

INDIRA MAHAVIDYALAYA

KALAMB, DIST. YAVATMAL 445401

www.indiramahavidyalaya.com

AISHE ID: C-42925

Institution Track ID: MHCOGN15368

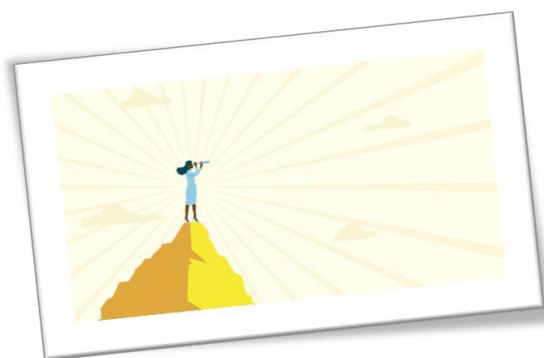
Criterion 3

Research, Innovations and Extension



KEY INDICATOR 3.3

Research Publications and Award



Metric No. 3.3.2 (QnM)

Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years.

3.3.2 (3) Copy of the Cover page, content page and first page of the publication indicating ISBN number and year of publication for books/chapters.

Session: 2022-23

Dr. Yashwant Moreshwar Donde Sarwajanik Shaikshanik Trust's

INDIRA MAHAVIDYALAYA

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

Principal: 9422867658

IQAC Co-Ordinator: 8668564641

NAAC Accredited with 'B+' Grade, Under UGC Section 2(f) and 12 (B)

College Code-414

AISHE: C-42925

E mail - imvkalamb@yahoo.co.in

Website - www.indiramahavidyalaya.com

DECLARATION

The information, reports, true copies of the supporting documents, numerical data, etc. furnished in this file is verified by IQAC and found correct.

B. S. S. S.
Co-ordinator
IQAC
Indira Mahavidyalaya
Kalamb



P. B. Mandekar
PRINCIPAL
Indira Mahavidyalaya
Kalamb Dist. Yavatmal

Table of Contents

Session: 2022-23

Sl. No.	Name of the teacher	Title of the book/ Chapters Published	Title of the Paper	Title of the proceedings of the conference	Year of publication	ISBN of the proceeding	Name of the Publisher
1	Dr. Pavan Mandavkar	Sant Sahitya	Book	Book	2023	978-81-925945-4-5	Shanti Publications, Pune
2	Dr. Pavan Mandavkar	Daya Pawarancha Baluta	Book	Book	2023	978-81-953708-0-1	Dr. Bhau Mandvkar Research Centre, Kalamb
3	Dr. Veera Mandavkar	Conf. Paper	Navya Shikshani k Dhoranach ya Ammalbaj awanipudh il Avhane	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandvkar Research Centre, Kalamb
4	Dr. Pavan Mandavkar	Conf. Paper	Language, Art, and Culture in NEP-2020	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandvkar Research Centre, Kalamb
5	Dr. K.R. Nemade	Research Trends in Science and Technology Volume III	Cutting-Edge Progress In Tandem Solar Cell Innovation	NA	2023	978-93-88901-74-1	Bhumi Publishing, India
6	Dr. K.R. Nemade	Research Trends in Material Science	Recent Advancem ents In Metamater ials	NA	2023	978-93-88901-83-3	Bhumi Publishing, India
7	Dr. K.R. Nemade	RECENT TRENDS IN RESEARCH IN CHEMICAL SCIENCES	Conductin g Polymers: A Review	NA	2023	935-854-449-x	Pragati Prakashan, India
8	Dr. K.R. Nemade	Frontiers in Life Science Volume X	Recent Advancem ents In Bio-Supercapa citors	NA	2023	978-93-88901-35-2	Bhumi Publishing, India

9	RAHUL ANIL SINHA	SPIDERS: MASTERS OF ADAPTATION AND SURVIVAL	LATEST TRENDS IN ZOOLOGY AND ENTOMOLOGY SCIENCES	NA	2023	978-93-55709-54-7	AKINIK PUBLICATION S,India
10	RAHUL ANIL SINHA	INSECT REPRODUCTION AND LIFE CYCLES	RESEARCH TRENDS IN LIFE SCIENCE	NA	2023	9789388901901	Bhumi Publication,India
11	Dr.Sharayu S.Bonde	Marketing Management	Book	NA	2023	978-93-91943-93-6	Adhyayan publisher& Disyributor,India
12	Rupesh R Atram	Research Trends in Mathematics and Statistics	Recent Trends in Coding Theory: Mathematics Behind Digital communication in a Noisy World	NA	2023	978-93-5570-852-6	AkiNik Publications C-11/169, Sector-3, Rohini, Delhi-110085
13	V.B. Watkar	Digital Vedic Mathematics	Technology Methods and Processes	NA	2023	978-81-967293-1-8	JEH Press,India
14	J.M. Bodulwar	Recent review and Research in physics	Nanoscale Science: Unveiling the Microscopic Marvels	NA	2023	978-93-5570-878-6	AkiNik Publications,India
15	S.B. Sangale	Recent review and Research in physics	Electrifying energy storage: unleashing the power of supercapacitors	NA	2023	978-93-5570-878-6	AkiNik Publications,India

16	Dr. P. R. Bonde	Research and Development	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe
17	S.B. Sangale	Research and Development	Sunrise of Innovation : The Evolution of Solar Cells	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe
18	S. R. Khandekar	Research and Development	An overview: Green synthetic approach towards Schiff's base metal complexes	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe
19	Dr. S. Bonde	Research and Development	An Introduction to Intellectual Property Rights and their Importance	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe
20	J. M. Bodulwar	Research and Development	Nanoscience in practice: A Deep Dive Into the modern healthcare	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe
21	R. R. Atram	Research and Development	Some Basic Graphs in Graph Theory	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalambe

22	Rahul A. Sinha	Research and Development	Biodiversity and Human Health: A Symbiotic Relationship	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
23	Dr. Vicky Watkar	Research and Development	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
24	Dr. P. Mandavkar	Research and Development	National Education Policy 2020 and Research in Higher Education	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
25	Dr. D. M. Chavhan	Research and Development	Heavy Metals, their Health Effects and its Precautions	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
26	Dr. S. A. Deshmukh	Research and Development	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
27	Dr. K.R. Nemade	Research and Development	Recent Advancements in the Spintronics Application of Carbon Nanotube	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre, Kalamb
28	Dr. V. R. Patki	Research and Development	Applications of Statistics	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research

			in Research				Centre,Kalamb
29	Shital S. Raut	Research and Development	Comparati ve Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District	NA	2023	978-81- 953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb
30	Dr. P. Ingle	Research and Development	A Comparati ve Study among Working and Non- Working Women with Respect to Life Satisfactio n	NA	2023	978-81- 953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb
31	S.Y. Lakhdive	Research and Development	Balkanchy a Vikasat Palkanchi Bhumika	NA	2023	978-81- 953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb
32	N.V.Narule	Research and Development	Chandrapu r jilhyachya Anusuchit Jamatichy a loksankhe chya vitarnavar parinam karnarya bhuprustar achna ya bhaugolic ghatkacha abhyas	NA	2023	978-81- 953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb

33	Dr.M.P. Rakhunde	Research and Development	Yavatmal Jilyatil Audyaogik Vikas	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb
34	Dr.V.Mandavkar	Research and Development	Mahanubhav Panthatil premibhakta: Baisaurfa Nagambika	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb
35	S.Y. Lakhdive	Conf. Paper	Role of Teacher in NEP 2020	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre,Kalamb
36	Shital S. Raut	Conf. Paper	Impact of plyometric & cycle ergometer training on handball players anerobic performance	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre,Kalamb
37	Prof. P. S. Jawade	Conf. Paper	NEP 2020 and Rabindranath Tagore's Vision of education	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre,Kalamb

38	Dr. D.M Chavhan	Conf. Paper	Value education: a GOEC through E-learning for sustainable development of society	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre, Kalamamb
39	Dr. S.A. Deshmukh	Conf. Paper	Synthesis spectral characterization and biological activity of heterocyclic compound of 2-imidazolones	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre, Kalamamb
40	Dr.K.R. Nemade	Conf. Paper	Re-Visiting Indian Education with a STEM: The Game Changer Teaching Methodology in NEP 2020	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre, Kalamamb
41	M.P.Rakhunde	Recent trends in Sustainable development	Recent trends in Indian Economy System	NA	2023	978-81-939083-4-1	Solan Publication, India
42	V.Patki	Recent trends in Sustainable development	Education study	NA	2023	978-81-939083-4-1	Solan Publication, India
43	V.P.Mandavkar	Recent trends in Sustainable development	Indian Economy: A challenge	NA	2023	978-81-939083-4-1	Solan Publication, India
44	S.Y.Lakhdive	Recent trends in Sustainable development	Indian Economy Growth Vs Slowdown	NA	2023	978-81-939083-4-1	Solan Publication, India

45	N.V.Narule	Recent trends in Sustainable development	Recent trends in india	NA	2023	978-81-939083-4-1	Solan Publication, India
46	S.A.Deshmukh	Recent trends in Sustainable development	Poultry farms in India	NA	2023	978-81-939083-4-1	Solan Publication, India
47	S.B. Sangale	Recent trends in Sustainable development	Influneece of children on family purchase decision making	NA	2023	978-81-939083-4-1	Solan Publication, India
48	P.B.Mandavkar	Recent trends in Sustainable development	Recent Education : oppertunities and challenges	NA	2023	978-81-939083-4-1	Solan Publication, India
49	K.R.Nemade	Recent trends in Sustainable development	Role of E conference	NA	2023	978-81-939083-4-1	Solan Publication, India
50	R.Sinha	Recent trends in Sustainable development	Recent trends in economy:Industrial sector	NA	2023	978-81-939083-4-1	Solan Publication, India
51	P.B.Ingale	Recent trends in Sustainable development	Impact of cashless economy	NA	2023	978-81-939083-4-1	Solan Publication, India
52	J.M.Bodulwar	Recent trends in Sustainable development	Analysis of goods credit-Debit and balance	NA	2023	978-81-939083-4-1	Solan Publication, India
53	D.M.Chavan	Recent trends in Sustainable development	Very recent trends in Indian Economy	NA	2023	978-81-939083-4-1	Solan Publication, India
54	P.R.Bonde	Recent trends in Sustainable development	Indias Recent agricuitural development	NA	2023	978-81-939083-4-1	Solan Publication, India
55	R.R.Atram	Recent trends in Sustainable development	Role of Agriculture in Indian Economy	NA	2023	978-81-939083-4-1	Solan Publication, India
56	S.Khandekar	Recent trends in Sustainable development	E-Commerce and Bussiness	NA	2023	978-81-939083-4-1	Solan Publication, India

57	P.S.Jawade	Recent trends in Sustainable development	New Technology: A Review	NA	2023	978-81-939083-4-1	Solan Publication, India
58	S.Raut	Recent trends in Sustainable development	Gas and Its Impact	NA	2023	978-81-939083-4-1	Solan Publication, India
59	R.M.Wath	Recent trends in Sustainable development	Growth Rate and Statistic of indian economy	NA	2023	978-81-939083-4-1	Solan Publication, India
60	Rupesh R. Atram	Conf. Paper	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre, Kalamb
61	Dr. P. Ingale	Conf. Paper	Adhyayan, adhyapan a mulyamapan prakriyatil navinyata va rashtriya dhoran 2020	NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education	2023	978-81-953708-1-8	Dr. Bhau Mandavkar Research Centre, Kalamb
62	Dr. V.R. Patki	Frontier in Life Science	GENETICALLY MODIFIED ORGANISMS: AN URGENT NEED	NA	2023	978-93-88901-35-2	Bhoomi Publishing

63	Dr. V.R. Patki	Research Trends in Animal Science	CELLULAR REGENERATION FRONTIERS: EXPLORING THE HORIZONS OF TISSUE REPAIR AND THERAPEUTICS	NA	2023	978-93-88901-73-4	Bhoomi Publishing,India
64	Dr. V.R. Patki	NEP2020: Innovation in Teaching-Learning &Evaluation Process in Higher Education	Revisiting Indian Education with STEM: The Game Changer Teaching Methodology in NEP2020	NA	2023	978-81-953708-1-8	Bhoomi Publishing,India
65	Dr. V.R. Patki	Research & Development	Application of Statistics in Research	NA	2023	978-81-953708-7-0	Dr. Bhau Mandavkar Research Centre,Kalamb

Dr. Pavan Mandavkar: Sant Sahitya

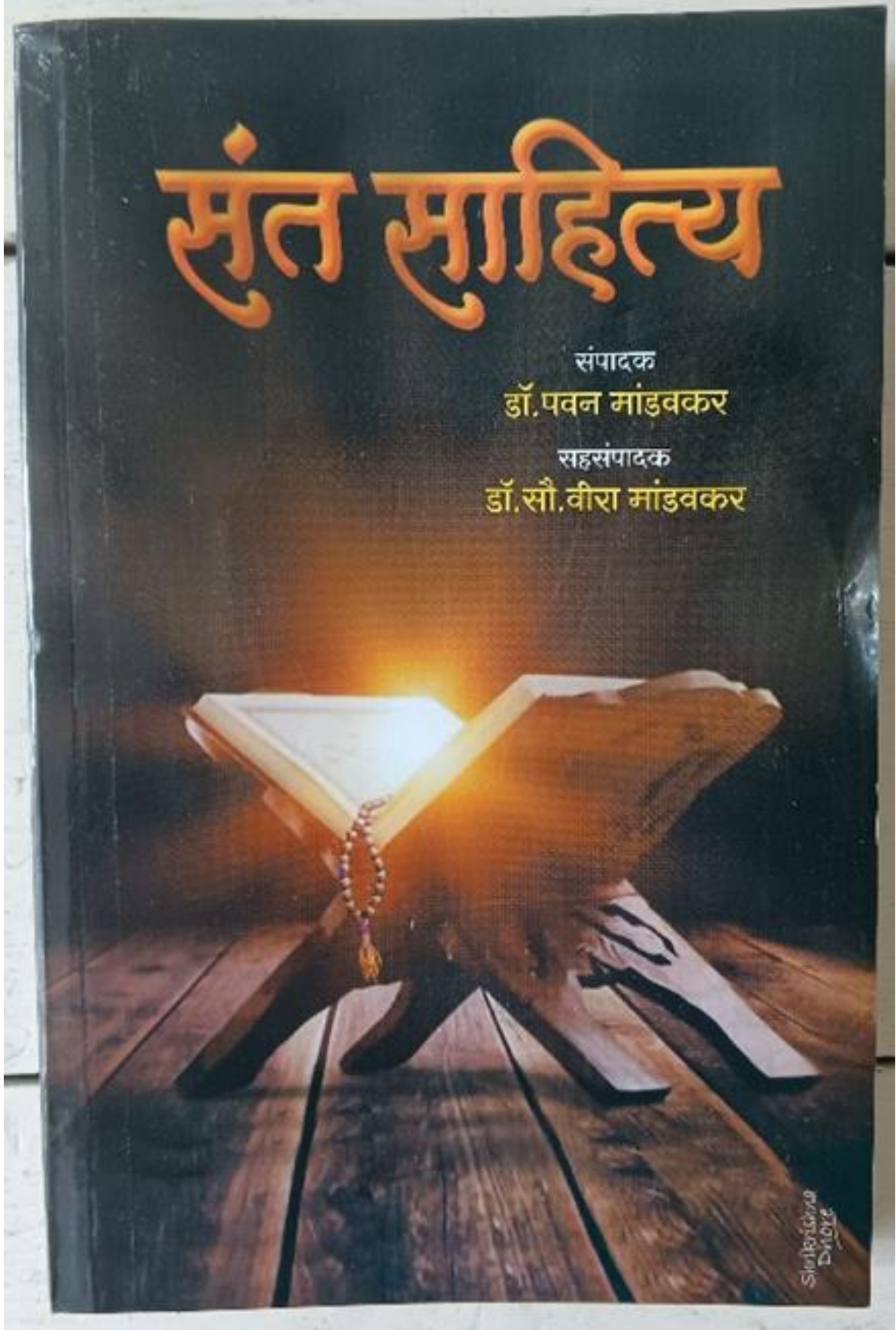
संत साहित्य

संपादक

डॉ. पवन मांडवकर

सहसंपादक

डॉ. सौ. वीरा मांडवकर



महाराष्ट्र राज्य ग्रंथ निवड समितीने शासनमान्य यादीसाठी
निवडलेले पुस्तक सन २०१९ यादीतील क्रमांक १३८२

विद्यापीठ अनुदान आयोगाच्या मार्गदर्शक तत्वांनुसार संशोधनपर
लेख व शोधनिबंधांचा संदर्भ ग्रंथ

संत साहित्य

संपादक

डॉ. पवन मांडवकर

सहसंपादक

डॉ. सौ. वीरा मांडवकर

शांती

शांती पब्लिकेशन्स, पुणे

प्रकाशक

रघुनाथ उकरंडे

शांती पब्लिकेशन्स

स. नं. ३४/१८/३, साईकृपा अपार्टमेंट,
स्वामी समर्थ नगर, दुर्गापुर गार्डन सोसायटी मागे,
धनकवडी, पुणे ४११०४३

मो. नं. ९०२२१७६३१८ / ८८०५२०२२५४

प्रथमावृत्ती : २०१९

द्वितीयावृत्ती : २०२३

मुखपृष्ठ : श्रीकृष्ण बोंरे

अक्षरजुळणी

वेदिका एन्टरप्रायजेस

२८/३९ चैतन्यनगर, धनकवडी, पुणे ४११०४३

मो. नं. ७५८८२७७०४२

मुद्रक

रुपेश व्ही. नायडू

टेक्सट्री पेपर प्रोडक्ट आणि स्टेशनरी,

१०३, नंदन हाऊस, नांदेड फाटा,

सिंहगड रोड, पुणे ४११ ०४१

मो.नं. : ९८८१०१०२०१

ISBN 978-81-925945-4-5

किंमत : ६७० /- रुपये

Dr. Pavan Mandavkar: Daya Pawarancha Baluta

ISBN 978-81-953708-0-1

दया पवार यांच्या 'बलुतं' या आत्मकथनाचा सर्वांगीण अभ्यास

विविध विद्यापीठांतील पदवी व पदव्युत्तर मराठी
तसेच मराठी वाङ्मयाच्या अभ्यासक्रमांकरिता उपयुक्त संदर्भ ग्रंथ

दया पवारांचं बलुतं

डॉ. पवन मांडवकर

डॉ. भाऊ मांडवकर रिसर्च सेंटर

Dr. Bhau Mandavkar Research Centre

इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ ४४५ ४०१

भ्रमणध्वनी ९४२२८६७६५८ / ९४०३०१४८८५

E mail : marathipradhyapak@gmail.com

सहयोगी वितरक

सेवा प्रकाशन

विजय कॉलनी, रुक्मिणी नगर, अमरावती ४४४ ६०६

सेवा प्रकाशन

'पद्मनिलया', ४२, शिवाजी नगर, यवतमाळ ४४५ ००१

मूल्य तीनशे रुपये

- ISBN 978-81-953708-0-1
- ग्रंथप्रकार संदर्भग्रंथ REFERENCE BOOK
- दया पवारांचं बलुतं
Daya Pawarancha Baluta
- © प्राचार्य डॉ. पवन मांडवकर
© Principal Dr. Pavan Mandavkar
इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ
- संशोधन/लेखन काल १९९७ ते २००१
- प्रथमावृत्ती २६ जानेवारी, २०२३ (गणराज्य दिन)
- प्रकाशन क्र. २० प्रती १०००
- आकार डेमी पृष्ठसंख्या २२४
- मुखपृष्ठ फोर कलर
- संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
- प्रकाशक / मुद्रक / वितरक
डॉ.सौ. वीरा मांडवकर
डॉ. भाऊ मांडवकर रिसर्च सेंटर
इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ ४४५ ४०१
भ्रमणध्वनी ९४२२८६७६५८ / ९४०३०१४८८५
E mail : marathipradhyapak@gmail.com

(अभ्यासकांना सूचना — ‘दया पवारांचं बलुतं’ हा ग्रंथ डॉ. पवन मांडवकर यांच्या आचार्य पदवीकरिता सादर केलेल्या ‘दया पवार : वाङ्मयदर्शन आणि चिकित्सा’ या प्रबंधातील एका प्रकरणावर आधारित आहे. हे संशोधन व लेखन १९९७ ते २००१ या कालावधीतील आहे. या पुस्तकातील मते ही लेखकाची आणि विविध अभ्यासकांच्या मतांचा परामर्श घेऊन मांडलेली असली तरी नवनवीन संशोधन आणि स्थल, काल तसेच वाचकांच्या दृष्टीने त्यात वेगळेपणा असू शकतो. हीच समीक्षा ग्राह्य धरावी, असा आमचा आग्रह नसून संशोधक व अध्ययनकर्त्यांनी निष्कर्ष मांडताना संदर्भ मूलतः तपासून घ्यावेत, ही विनंती.)

मूल्य ३०० रुपये

अनुक्रम

दोन शब्द	५
दया पवार	९
दया पवारांचे साहित्य	१३

दया पवारांचं बलुतं

१. प्रास्ताविक	१८
२. 'बलुतं' : आत्मचरित्र, आत्मकथन की स्वकथन?	२०
अ. आत्मचरित्र ब. आत्मकथन	
क. स्वकथन ड. निष्कर्ष	
३. मराठीतील दलित आत्मकथने	३५
अ. प्रास्ताविक	
ब. दलित आत्मकथनांचा प्रारंभ	
क. मराठीतील विविध दलित आत्मकथने	
४. 'बलुतं' : एक प्रभावी आत्मकथन	४४
५. 'बलुतं'चे कथानक : एक धावता आढावा	४९
६. 'बलुतं'ची वैशिष्ट्ये :	५२
६.१. 'बलुतं'चे मुखपृष्ठ	
६.२. शीर्षक	
६.३. 'बलुतं'ची प्रारंभिक पृष्ठे :	
पहिले पान, दुसरे पान, अर्पणपत्रिका	
६.४. 'बलुतं' आत्मकथनाचा प्रारंभ	
६.५. दगडू : 'बलुतं'चा हिरो की अण्टीहिरो?	
६.६. दगडू : एक दुभंगलेले व्यक्तिमत्त्व	
६.७. बलुतेदारी	
६.८. 'बलुतं'मधील रूढीपरंपरा	
६.९. 'बलुतं'मधील समाजजीवन	
६.१०. 'बलुतं'मधील समाजजीवन आणि	
लेखकाचे व्यक्तिगत जीवन यांचा परस्पर संबंध	
६.११. 'बलुतं'मधील ग्रामीणता	
६.१२. 'बलुतं'मधील जातिभेद	
६.१३. 'बलुतं'मधील समूहभावना	

Dr. Veera Mandavkar: Navya Shikshanik Dhoranachya Ammalbajawanipudhil Avhane



Three Days

Multidisciplinary National Conference on

NEP-2020:

**Innovation in Teaching-Learning &
Evaluation Process in Higher Education**

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

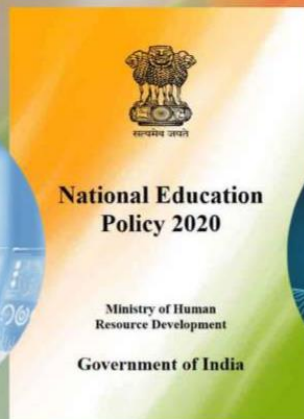
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने

डॉ. वीरा मांडवकर

सहायक प्राध्यापक

इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ, महाराष्ट्र (India)

इ मेल veeranmandavkar18@gmail.com मो. 9403014885

गोषवारा -

गेल्या वर्षीच्या जुलै महिन्यामध्ये भारताने २१व्या शतकातील पहिले व सर्वात व्यापक शैक्षणिक धोरण जाहीर केले. १९८६ नंतर पहिल्यांदाच असे शैक्षणिक धोरण जाहीर करण्यात आले. या धोरणामध्ये भारताच्या शिक्षण व्यवस्थेला भेडसावणाऱ्या विविध आव्हानांवर उपाय सुचवण्याचा प्रयत्न करण्यात आला. विद्यार्थ्यांच्या क्षमतांनुसार शिक्षण ही यामागील प्रमुख संकल्पना आहे. या धोरणामुळे शिक्षण सर्वसमावेशक आणि सर्वांच्या आवाक्यातले होण्यास मदत होईल. युवा पिढी ही भारताचे भविष्य आहे, त्यामुळे त्याचे शिक्षण हे भारताच्या सर्वांगीण विकासाच्या दृष्टीने अत्यंत महत्त्वाचे आहे. हे धोरण स्थानिक भाषांमध्ये शिक्षण देण्यास विशेष प्रयत्नशील आहे. तसेच यात 'अकॅडेमिक बँक ऑफ क्रेडिट' ही संकल्पना उदयास आणली आहे. हे नवे शैक्षणिक धोरण अत्यंत प्रभावी आणि उपकारक असूनही ते राबवताना अनेक अडचणी त्याच्यासमोर येणार आहेत. मुख्य म्हणजे लोकसंख्या बहुल भारतातील शिक्षण व्यवस्था ही जगातील दुसऱ्या क्रमांकावरील शिक्षण व्यवस्था आहे. इतक्या मोठ्या प्रमाणात हे नवे शैक्षणिक धोरण राबविणे हे मोठे आव्हान आहे. दुसरे म्हणजे निधीची कमतरता, तिसरे म्हणजे शिक्षण व्यवस्था चालवणाऱ्या लोकांचा व सोबतच शिक्षक, विद्यार्थी व पालकांचा पारंपरिक दृष्टिकोन बदलणे, चौथे आव्हान भारतातील सर्वच राज्य, संघराज्य, युनियन टेरेटरीज यांचा सहयोग मिळेलच अशी शक्यता कमी, पाचवे म्हणजे या धोरणाच्या प्रक्रियेसाठी खाजगी क्षेत्राचे योगदान मिळवणे व यातील एक महत्त्वाचा भागीदार म्हणून खाजगी क्षेत्राच्या योगदानाला मान्यता देणे हे एक आव्हान आहे. तसेच येत्या दशकात वाढणारी संसाधनांची गरज भागविता येण्यासाठी आत्तापासून पावले उचलणे हेही शिक्षणव्यवस्थेसमोरचे मोठे आव्हान आहे. या सर्व आव्हानांवर ही शिक्षणव्यवस्था कोणता मार्ग काढू शकते आणि नव्या शैक्षणिक धोरणाची अंमलबजावणी करू शकते, यावर या शोधनिबंधात प्रकाश टाकण्याचा प्रयत्न केला आहे.

बीजशब्द - धोरण, अंमलबजावणी, संसाधने, विद्यार्थी, शिक्षक, परिवर्तन, उददीष्टे, शिक्षण, गरज, बदल

प्रस्तावना -

आपण स्वातंत्र्याच्या 76 व्या वर्षामध्ये पदार्पण करत आहोत, एका प्रकारे नव्या शैक्षणिक धोरणाची अंमलबजावणी करणे हा आता अत्यंत महत्त्वाचा भाग बनला आहे, नवीन भारत आणि

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**
RECOGNIZED BY UGC UNDER 2 F & 12 B
NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)



Dr. Pavan Mandavkar: Language, Art, and Culture in NEP-2020



Three Days

Multidisciplinary National Conference on

NEP-2020:

**Innovation in Teaching-Learning &
Evaluation Process in Higher Education**

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

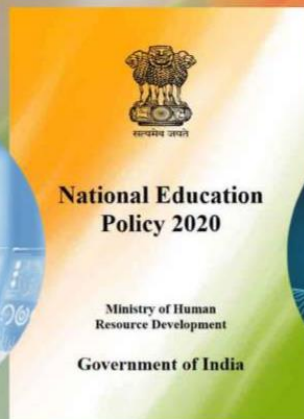
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Language, Art, and Culture in NEP–2020

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra, India
President, Sant Gadge Baba Amravati University Marathi Teachers' Association
E mail: pavanmandavkar@hotmail.com Mobile: 9422867658

Abstract:

National Education Policy 2020 aims to revise and revamp the education system of India. In NEP 2020 there is a special focus on regional, national and international languages. The new education system, methods and tools will contain videos, dictionaries, recordings of people speaking the language, telling stories, reciting poetry, and performing plays, folk songs and dances, and more. Universities and their research teams will work with each other and with communities across the country towards enriching such platforms. Scholarships for people of all ages to study Indian Languages, Arts, and Culture will be established. Incentives, such as prizes for outstanding poetry and prose in Indian languages across categories, will be given. Proficiency in Indian languages will be included as part of qualification parameters for employment opportunities.

Keywords: NEP-2020, National Education Policy, Languages, Arts, Culture, vocabulary, grammar

Introduction:

NEP-2020 means National Education Policy 2020 which aims to address the many growing developmental imperatives of India. This Policy proposes the revision and revamping of all aspects of the education structure of the Nation. Development of the creative potential of each individual is expected through this policy. 'It is based on the principle that education must develop not only cognitive capacities - both the 'foundational capacities' of literacy and numeracy and 'higher-order' cognitive capacities, such as critical thinking and problem solving - but also social, ethical, and emotional capacities and dispositions.'¹

There is a special focus on the part of Languages, Arts, and Culture in NEP 2020. This paper explains the importance of regional languages as well as National and International languages, different types of arts and culture in the education system of India.

Languages, Arts, and Culture in NEP–2020:

'The National Education Policy 2020 (NEP 2020) has emphasised on the use of mother tongue or local language as the medium of instruction till Class 5 while recommending its continuance till Class 8 and beyond. It recommends that all students will learn three languages in their school under the formula. The three languages learned by children will be the choices of States, regions, and of course the students' themselves.'²

Culture in India developed over thousands of years and manifested in the form of arts, literature, linguistic expressions, traditions etc. People from different countries partake in, enjoy, and benefit from this cultural wealth, in the form of visiting India as tourists. They are experiencing Indian hospitality, practicing yoga and meditation, purchasing handicrafts and handmade textiles. They read the classical literature of India. Many of them are inspired by Indian philosophy. They appreciate India's diverse music and art.

'Cultural awareness and expression are among the major competencies considered important to develop in children, in order to provide them with a sense of identity, belonging, as well as an appreciation of other cultures and identities.'³

We know the arts form a major medium for imparting culture. The arts are well known to enhance cognitive and creative abilities in individuals and increase individual happiness. The cognitive development and cultural identity of individuals are important reasons that Indian arts

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**
RECOGNIZED BY UGC UNDER 2 F & 12 B
NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

Dr. K.R. Nemade: Cutting-Edge Progress In Tandem Solar Cell Innovation

ISBN: 978-93-88901-74-1

RESEARCH TRENDS IN SCIENCE AND TECHNOLOGY VOLUME III

EDITORS

DR. ALOK RANJAN SAHU
MR. BASANT DESHWAL
DR. NARAYAN GAONKAR
DR. SANJAY SINGH



BHUMI PUBLISHING, INDIA



FIRST EDITION: JULY 2023

First Edition: July, 2023

ISBN: 978-93-88901-74-1



© Copyright reserved by the Editor

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: www.bhumipublishing.com

E-mail: bhumipublishing@gmail.com

Book Available online at:

<https://www.bhumipublishing.com/book/>



TABLE OF CONTENT

Sr. No.	Book Chapter and Author(s)	Page No.
1.	APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN BIOTECHNOLOGY Bindu Rajaguru, Meenakshi Johri and Bhakti Gavhane	1 - 12
2.	TRANSMISSION EMBEDDED COST ALLOCATION USING PROPORTIONAL NUCLEOLUS METHOD IN A LIBERALIZED ELECTRICITY MARKET Murali Matcha, Siddheswar Kar and Neha Verma	13 - 32
3.	SOCIAL WELFARE MAXIMIZATION IN A RESTRUCTURED POWER SYSTEM USING BAT ALGORITHM Murali Matcha, Siddheswar Kar and Neha Verma	33 - 53
4.	REVIEW ON APPLICATION PROGRAMMING INTERFACES FOR INTERNET PROTOCOL Sumit Chopra, Lovedeep Kaur, Anchal Nayyar and Gagandeep Singh	54 - 63
5.	PROCESS MANAGEMENT IN OPERATING SYSTEM Sumit Chopra, Diksha Rani, Rajesh Sharma and Simranjot Kaur	64 - 71
6.	INTRODUCTION TO SENSORS M. W. Bhade	72 - 75
7.	PROTEIN ENGINEERING FOR PRODUCTION OF INDUSTRIAL IMPORTANT ENZYMES Kirti Yadav, Neeraj K. Aggarwal and Awtar Singh	76 - 83
8.	BIOMATERIALS D. R. Nagapure	84 - 102
9.	A REVIEW OF THE INTERPRETATION OF DUALITY IN DIFFERENTIABLE AND NON-DIFFERENTIABLE MATHEMATICAL PROGRAMMING Ram Naresh Singh, Shailendra D. Deo and Ajay Kumar Sharma	103 - 108
10.	CELLULAR COMMUNICATION IN BREAST CANCER Juily R. Atitkar	109 - 117
11.	CUTTING-EDGE PROGRESS IN TANDEM SOLAR CELL INNOVATION Kailash Nemade	118 - 123

CUTTING-EDGE PROGRESS IN TANDEM SOLAR CELL INNOVATION

Kailash Nemade

Department of Physics,

Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401, Maharashtra, India

Corresponding author E-mail: krnemade@gmail.com

Abstract:

The demand for efficient and sustainable energy sources has spurred remarkable advancements in photovoltaic technology, particularly in the field of tandem solar cells. This research paper delves into the cutting-edge progress made in tandem solar cell innovation, exploring the latest developments, breakthroughs, and challenges in this rapidly evolving domain. Tandem solar cells, also known as multi-junction solar cells, offer the potential to surpass the efficiency limitations of traditional single-junction cells by stacking multiple sub-cells, each optimized for a specific portion of the solar spectrum. This chapter comprehensively reviews the state-of-the-art materials, design strategies, and fabrication techniques employed in tandem solar cell architectures. By critically evaluating the progress and prospects of tandem solar cell innovation, this research paper offers valuable insights into the future direction of photovoltaic technology. The synthesis of recent developments and emerging trends serves as a guide for researchers, engineers, and policymakers seeking to accelerate the deployment of high-efficiency solar energy solutions and drive the transition towards a sustainable energy landscape.

Keywords: Energy Conservation; Tandem Cell; Solar Cell

Introduction:

Energy conservation is a crucial and pressing need in today's world due to a myriad of reasons that encompass environmental, economic, and social dimensions. As global energy demand continues to rise, it is imperative that we adopt strategies to conserve energy and utilize it more efficiently. First and foremost, environmental concerns are at the forefront of the energy conservation movement. The excessive consumption of non-renewable energy sources, such as fossil fuels, leads to detrimental effects on the planet. Burning fossil fuels releases greenhouse gases into the atmosphere, contributing to climate change, air pollution, and the depletion of natural resources. By conserving energy, we can reduce our carbon footprint and mitigate the impact of climate change, thus preserving a habitable planet for future generations.

Economic factors also play a significant role in the necessity of energy conservation. Energy production and distribution require substantial financial investments, and high demand can strain energy infrastructure. By conserving energy, we can alleviate the pressure on energy grids, reduce the need for expensive infrastructure upgrades, and ultimately lower energy costs for consumers. Moreover, energy efficiency measures in industries and households can lead to substantial cost savings over time, enhancing economic stability and resilience [1].

Dr. K.R. Nemade: Recent Advancements In Metamaterials

ISBN: 978-93-88901-83-3

RESEARCH TRENDS IN MATERIAL SCIENCE

EDITORS:

DR. ALOKE VERMA

DR. PAYAL GOSWAMI

DR. VEERABHADRAYYA M

DR. R. G. VAIDYA

BHUMI PUBLISHING, INDIA



FIRST EDITION: SEPTEMBER 2023

First Edition: September, 2023

ISBN: 978-93-88901-83-3



© Copyright reserved by the Editor

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: www.bhumipublishing.com

E-mail: bhumipublishing@gmail.com

Book Available online at:

<https://www.bhumipublishing.com/book/>

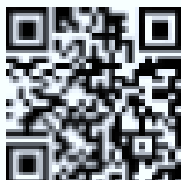


TABLE OF CONTENT

Sr. No.	Book Chapter and Author(s)	Page No.
1.	SELF-ASSEMBLY OF CYCLIC PEPTIDES: FORMATION OF SUPRAMOLECULAR CYCLIC PEPTIDE NANOTUBES (SCPNs) Krishnananda Samanta	1 - 15
2.	SOLID WASTE MANAGEMENT PRACTICES: A CASE STUDY OF KERALA, INDIA Rincy A and Anila George	16 - 25
3.	A REVIEW ON CADMIUM SULPHIDE (CdS) THIN FILMS SYNTHESIS AND ITS APPLICATIONS Y. A. Chaudhari	26 - 30
4.	RECENT ADVANCEMENTS IN METAMATERIALS Kailash Nemade	31 - 36
5.	NANOTECHNOLOGY: ENVIRONMENTAL, HEALTH AND SAFETY ISSUE M. S. Bisen, A. V. Bagde and Y. S. Bopche	37 - 49
6.	A CONDUCTING POLYANILINE AND ITS APPLICATIONS Sandip V. Patil	50 - 55
7.	BIOREMEDIATION OF HEAVY METAL CONTAMINATED SOILS R. Jayashree and V. Bhagyasree	56 - 66
8.	INTRODUCTION AND APPLICATIONS OF III-V SEMICONDUCTOR COMPOUNDS AND ALLOYS Uttam Paliwal	67 - 74

RECENT ADVANCEMENTS IN METAMATERIALS

Kailash Nemade

Department of Physics,

Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401, Maharashtra, India

Corresponding author E-mail: krnemade@gmail.com

Abstract:

This chapter presents a comprehensive review of the latest breakthroughs in metamaterial science and technology. We explore developments in various metamaterial applications, including invisibility cloaks, super lenses, acoustic manipulation, and quantum metamaterials. Additionally, we delve into emerging frontiers such as topological metamaterials and smart, adaptive structures. This chapter addresses the key challenges of metamaterial manufacturing, efficiency optimization, and integration into real-world systems. The implications of these advancements are far-reaching, offering prospects for revolutionizing fields ranging from telecommunications and quantum computing to energy efficiency and healthcare. In addition to this chapter highlights the remarkable progress in metamaterials and underscores their transformative potential in shaping the technological landscape of the future.

Keywords: Metamaterials; Negative Refractive index; Acoustic Metamaterials

Introduction:

Metamaterials represent a groundbreaking and interdisciplinary field of materials science that has gained immense attention and significance in recent years. These synthetic materials are meticulously engineered at the nanoscale to possess unique properties and capabilities that defy the natural constraints of conventional materials. Metamaterials owe their name to their inherent ability to manipulate and metamorphose the behaviour of waves, be they electromagnetic, acoustic, or thermal, in ways that were once considered purely theoretical. The concept of metamaterials originated from the pursuit of extending the boundaries of material science, particularly in the domain of wave manipulation. This innovative approach capitalizes on the idea that by structuring materials at scales much smaller than the wavelength of the waves they interact with, we can control and tailor their properties with unparalleled precision. One of the most striking features of metamaterials is their ability to achieve a negative refractive index. Unlike natural materials, which always refract light or other waves in a positive direction, metamaterials can bend waves in a

Research Trends in Material Sciences (ISBN: 978-93-88901-83-3)

About Editors



Dr. Alope Verma is the Head of the Physics Department at Kalinga University, Naya Raipur (CG). He has over 13 years of excellent teaching and academic experience. He earned his PhD in Physics. He has over 40 research papers, four books, and seven book chapters published in national and international journals. In national and international conferences and seminars, he has presented over 50 research papers. He has attended over 100 workshops, FDPs, and webinars. Several students successfully completed dissertation work under the supervision of Verma. He has received numerous teaching and academic awards.



Dr. Payal Goswami working as Guest Lecturer in the Department of Mathematics at Gout. Pt. J. L. N. PG Arts & Science College, Bemetara (CG). She has a decade of exemplary teaching experience and scholarly knowledge. In the field of mathematics, she earned a Doctor of Philosophy degree. She is the author of ten research papers and two book chapters that have appeared in national and international academic journals. She has presented 10 research papers at a national and international level. She has participated in over twenty workshops, faculty development programs (FDPs), and webinars. Under the supervision and guidance of Goswami, a number of students have successfully completed their dissertation. She has received numerous teaching and academic distinctions.



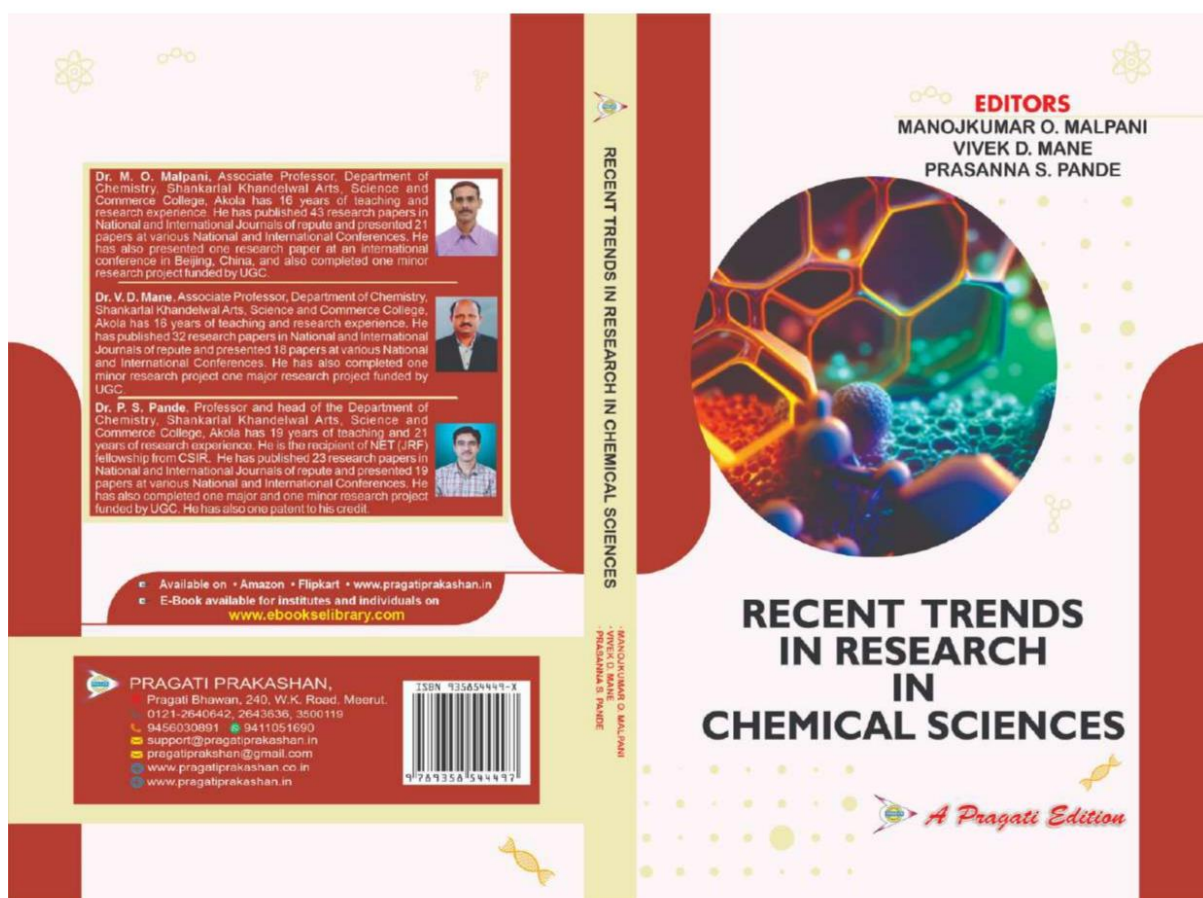
Dr. Veerabhadrayya M is presently serving as Assistant Professor of Physics at University College of Science, a constituent college of Tumkur University, Tumkur, Karnataka. He obtained his Master's degree in Physics from Karnatak University, Dharwad in 1997 and M. Phil. Degree from Annamalai University in 2007. He cleared SLET in 1998 and CSIR-NET in 2011. He is awarded with Ph.D. degree from Tumkur University, Tumkur in 2021. He has published 3 research articles in international journals and 8 research articles in international and National conference proceedings. He is interested in material science, XRD analysis, sensors and electronics. He has written two book chapters. He has 25 years of teaching experience at UG and PG level. He worked as a Coordinator of Department of studies and research in Physics (PG) at University College of Science, Tumkur. He is involved in academic activities of Tumkur University and other Universities. He is the life member of Indian Science Congress Association and Swadeshi Vignana Andolan.



Dr. R. G. Vaidya, is currently working as Assistant Professor in the Department of Physics, University College of Science, Tumkur University, Tumakuru, Karnataka. He has more than ten years teaching and research experience. He has published research papers in peer reviewed international journals. He has attended and presented his research work in various national and international level conferences, workshops, seminars, etc.



Dr. K.R. Nemade: Conducting Polymers: A Review



Pragati's

RECENT TRENDS IN RESEARCH IN CHEMICAL SCIENCES



Dr. MANOJKUMAR O. MALPANI

Associate Professor
Department of Chemistry
Shankarlal Khandelwal Arts,
Science and Commerce College,
Akola

Dr. VIVEK D. MANE

Associate Professor
Department of Chemistry
Shankarlal Khandelwal Arts,
Science and Commerce College,
Akola

Dr. PRASANNA S. PANDE

Professor and Head
Department of Chemistry
Shankarlal Khandelwal Arts,
Science and Commerce College,
Akola



PRAGATI PRAKASHAN

CONDUCTING POLYMERS: A REVIEW

Bhagyashri U.Tale*¹, Kailash R. Nemade², Pradip V. Tekade³

^{1,3}Department of Chemistry, Bajaj College of Science, Wardha, Maharashtra, India

²Department of Physics, Indira Mahavidyalaya Kalam, District: Yavatmal, Maharashtra, India

Corresponding author email address: bhagyashritale@gmail.com

ABSTRACT

The field of research has shown a significant interest in materials based on conducting polymers, primarily due to their advantageous mechanical, optical, and electronic characteristics. These conducting polymers exhibit an array of remarkable attributes, including stability, elasticity, strength, conductivity, and thermal stability. Hybrid materials that incorporate conducting polymers show a unique combination of optical and electronic properties, important for their use as the semiconductor material. This composite state makes them particularly valuable for applications in optoelectronic and electrochemical devices. Within this chapter, we delve into the comprehensive exploration of conducting polymers. This discussion encompasses their historical development, classification, intrinsic properties, and a wide range of applications that highlight their significance in various fields.

Keywords: Conducting polymers; inorganic semiconductors; hybrid materials.

1. INTRODUCTION

Polymers are one of the fundamental categories of substances. Polymers are used for the synthesis of many materials such as rubber, resins, plastic, adhesives etc. The terminology polymer originated from Greek words, 'poly' means 'many' and 'mers' means 'units or parts'). Polymers are made up of many monomeric structural units (low molecular weight molecules) interlinked by the process of polymerization [1 -4].

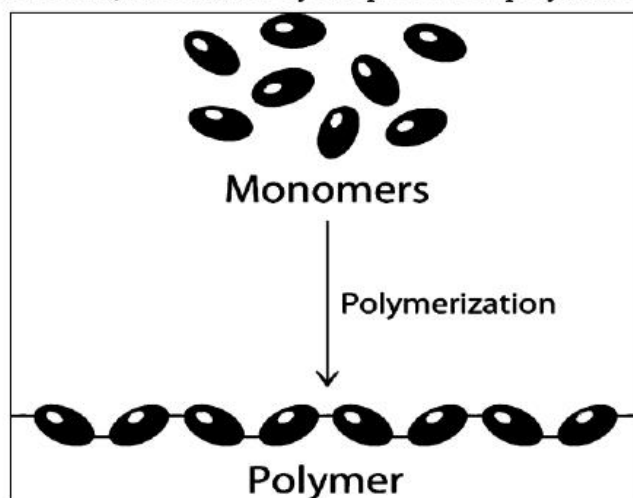


Fig.1: Polymer [3].

Dr. K.R. Nemade: Recent Advancements In Bio-Supercapacitors

ISBN: 978-93-88901-35-2

FRONTIERS IN LIFE SCIENCE

VOLUME X

Editors

Dr. Parimala B.

Dr. Priti Mishra

Dr. Kamlesh Kumar Yadav

Dr. Alok Ranjan Sahu



First Edition: 2023

12.	PROTEINS IN FISH Anil Kewat and Priti Mishra	74 - 81
13.	BIOETHANOL PRODUCTION FROM ORGANIC WASTE WITH IMMOBILISED YEAST CELL Shweta Humbarwadi, Shubham Jalgaonkar, Nayana Airekar and Poonam Raut	82 - 86
14.	EFFECT OF AIR POLLUTION ON PLANTS IN ULHASNAGAR GARDEN AREA AND AMBERNATH MIDC AREA D. Meena S. Rao and Suraj Maurya	87 - 93
15.	EFFECT OF SOME MICRO AND MACRO ELEMENTS ON ARTHROSPIRA SP. AND OPTIMIZATION OF ALGAL CULTURE MEDIUM D. Meena S. Rao and Monali Sonawane	94 - 99
16.	EVALI: WEEPING LUNGS DUE TO VAPING Saumya Sahajpal, Venu Gupta, Swati Chaudhary, Rakshit Sharma, Sahil Thakar and Navneet Sharma	100 - 108
17.	THE INCREASING TREND OF TYPE 2 DIABETES MELLITUS AMONG INDIANS Arvinda Shaw	109 - 119
18.	PLANT-DERIVED TANNINS: CHEMISTRY AND APPLICATION Mukesh Kumar Chaubey	120 - 131
19.	ANTI-CANDIDAL ACTIVITY OF <i>PSIDIUM GUAJAVA</i> BASED SILVER NANOPARTICLES Krubha Pauldas, Sakshi Alzende, Shreedevi Mehatre and Suman Kaver Rathod	132 - 138
20.	COMPLETE OVERVIEW OF QUERCETIN'S PHARMACOLOGICAL PROPERTIES AND MODE OF ACTION: A BIOACTIVE FLAVONOID Gobalan K, Sudharsan P, Purushothaman T, Koperuncholan M, Vasanth S and Siva Vijayakumar T	139 - 153
21.	PERFORMANCE OF WIDAL TEST IN TYPHOID FEVER IN TRIBAL AREA OF SIRONCHA TAHSIL S. R. Shaikh	154 - 156
22.	GENETICALLY MODIFIED ORGANISMS: AN URGENT NEED Ved Patki	157 - 159
23.	RECENT ADVANCEMENTS IN BIO-SUPERCAPACITORS Kailash Nemade	160 - 163
24.	FUNDAMENTALS OF POLYMERASE CHAIN REACTION (PCR) AND ITS APPLICABILITY IN DISEASE DIAGNOSIS Ashwin Atkulwar	164 - 167

RECENT ADVANCEMENTS IN BIO-SUPERCAPACITORS

Kailash Nemade

Department of Physics,

Indira College, Kalamb Dist. Yavatmal 445401

Corresponding author E-mail: krnemade@gmail.com

Abstract:

Due to their potential use as adaptable, highly effective, and long-lasting power sources for numerous portable electronic devices, such as computers, mobile phones, low-power medical equipment, hybrid electric vehicles, etc., supercapacitors and batteries are two significant technologies that are currently being developed. Supercapacitors and rechargeable batteries are complementing because, on average, supercapacitors have a greater specific power than rechargeable batteries while rechargeable batteries have a higher energy density. The current book chapter is intended to inform us about recent advancements in supercapacitors and their use in the field of medicine.

Keywords: Supercapacitors; Bio-Supercapacitors; Medical field

Introduction:

Economic and industrial growth heavily depend on the availability of fossil fuel supplies. By 2035, the global demand for fossil fuels will have increased to 18.30 billion tonnes of oil equivalent (BTOE) from its 2012 level of 13.731 BTOE. Natural resource depletion and unequal distribution lead to issues like economic imbalance, which have an effect on the sectors of energy production and storage, industrial operations, and transportation. In addition, burning fossil fuels produces pollutants and others that have a negative impact on the environment by causing greenhouse effects.

Several scientists are investigating alternatives to fossil fuels in this setting. This includes actively pursuing the development of renewable energy sources like solar energy, wind energy, tidal energy, geothermal energy, etc. In addition to producing biofuels, renewable energy sources primarily provide electricity, which requires sophisticated storage systems to store. As a result, there has been a high need for durable and highly effective electrochemical energy storage systems, such as batteries, fuel cells, and supercapacitors [1].

Comparison of supercapacitor and battery:

Fundamentally, electrical energy may be stored in two basic ways:

- In batteries, chemical energy is necessary to release charges that do electrical work via the movement of charges between two electrodes with differing electrode potentials, electrochemically active chemicals that are stored undergo faradaic oxidation and reduction.
- Directly through electrostatic means, which is a method known as non-faradaic electrical energy storage, as negative and positive electric charges on the plates of a capacitor.

The electrodes go through large phase shifts during discharge and recharge in batteries and capacitors, which causes irreversibility at the kinetic and thermodynamic levels. Hence,

Frontiers in Life Science Volume X (ISBN: 978-93-88901-35-2)

About Editors



Dr. Parimala B. from starting her career as school teacher she has successfully made till being conferred with Senior Scientist Award 2021 from ESDA, Delhi. Currently she is working as an Assistant Professor at the Department of Zoology of University College of Science, Tumakuru. She is widely acknowledged by innumerable students for her dedication, enthusiastic in teaching. She stands tall in providing all the necessary supports and guidance to the student's multidimensionality through her vast professional networks. Being an able and a promising administrator she has successfully lead the department of zoology as the head and has proved her potential by being an efficient personal in various academic and college developmental committees. She holds Ph.D. in Zoology, M.Phil. in Environmental Studies, Masters in Applied Zoology along with B.Ed. has built her multidisciplinary a strong resource and made her 15 years of professional life fruitful. Being an expert in the field of Ornithology she has made a remarkable contribution towards the conservation of aifauna. Her active involvement in research has made her come out with significant findings which are published in various reputed Scientific Journals. She has guided number of students in freelance research and is truly an inspiration for all her students who aspire their career in the field of Research and Development. Today, a good number of her students are pursuing Ph.D. in various institutions in the Country. Her works were presented in various symposiums National and International Conferences organised across states where she got recognised for her works and been conferred with best oral and poster presentation.



Dr. Priti Mishra is an Assistant Professor in College of Fishery Science, Nanaji Deshmukh Veterinary Science University (NDVSU), Jabalpur (M.P.). She completed her Ph.D. in Zoology from the Rani Durgavati Vishwa Vidyalyaya, Jabalpur in 1999. Prior to joining College of Fishery Science she had worked with Phoenix Group, Jabalpur as the Nutritionist for about 14 years and has wide technical experience in Poultry and Fish Nutrition. Her research areas include Fish processing technology, Fish Nutrition and Poultry nutrition. She has been awarded with 'Best Poster Award', 'Most Innovative Research paper Award', 'International Academic Achievers Award' and 'Best Teacher Award'. She has published book a on 'Fish Nutrition and Feed Technology and two booklets on Fish Culture. She has published five book chapters, more than '25 Research Papers and Popular Articles in different Journals of National and International repute and presented many scientific papers on various conferences.



Dr. Kamlesh K. Yadav is Assistant Professor and Head, Department of Zoology, Government Degree College, Unnao-209801, UP, India. He received his Post-graduation & Doctorate degrees from University of Lucknow, Lucknow, U.P., India. He has qualified CSIR-UGC-NET June 2001 and CSIR-UGC-JRF in Dec 2001. He has been involved in teaching and research for over 18 years. His expertise lies in the field of Aquatic toxicology, Environmental Pollution & Genotoxicity involving fish as models. Dr. Yadav has published more than 21 research papers of national and international repute, 06 Book Chapters, 01 Book and presented more than 22 research papers in various National and International seminars and conferences. He has been awarded "Congress of Zoology Medal 2022" by Zoological Society of India. He is life member of Indian Science Congress Association, Kolkata; Zoological Society of India, India and Society for Environmental Protection, Lucknow.



Dr. Alok Ranjan Sahu serves as an Assistant Professor in Botany at Vikash Degree College, Bargarh, Odisha. He received M.Sc., M.Phil. (Life Science) and Ph.D. in Biotechnology from the School of Life Sciences, Sambalpur University, Odisha, India. He has published more than 45 research papers in National and International Journals and Books. He also has obtained three National Patents and filed one Patents to his credit. He is the sole author of two books and co-author of four books. He is a Fellow and Life member of Six reputed International and National Academic Societies. He is a Reviewer and Editorial Board Member of more than 30 numbers of National and International Journals, including Biology, Genes, Biomolecules, Sustainability, BABT, JAPS, JABB, etc. For his outstanding research contribution, he was awarded Research Excellence Award-2023, Academic Excellence Award (Botany/ Plant Biotechnology)-2022, Young Achiever Award-2022, Outstanding Scientist Award-2022, Best Faculty Award-2021, Young Plant Breeder Award-2021, Best Researcher Award-2020, Young Scientist Award-2014, Best Poster Presentation Award-2013. His current areas of research interest are Plant Molecular Biology & Genome mapping, Medicinal Plant Conservation, Natural products & therapeutics.



Rahul Anil Sinha: Spiders: Masters of Adaptation and Survival

Peer Reviewed & Refereed

Indexing and Abstracting in Following Databases

1. Bowker: A ProQuest Affiliate

Bowker.
A ProQuest affiliate

2. Crossref

Crossref

LATEST TRENDS IN ZOOLOGY AND ENTOMOLOGY SCIENCES

Volume - 15

Chief Editor
Dr. Bhabesh Deka



Published by
AkiNik Publications,
#169, C-11, Sector - 3, Rohini
Delhi-110085, India
Toll Free (India): 18001234070



Attribution-NonCommercial-ShareAlike
4.0 International (CC BY-NC-SA 4.0)



AKINIK
PUBLICATIONS

LATEST TRENDS IN ZOOLOGY AND ENTOMOLOGY SCIENCES

Volume - 15

Chief Editor

Dr. Bhabesh Deka

Associate Professor and Head, Department of Entomology, Rajiv Gandhi
University, Arunachal Pradesh, India

AkiNik Publications®
New Delhi

Published By: AkiNik Publications

AkiNik Publications
169, C-11, Sector - 3,
Rohini, Delhi-110085, India
Toll Free (India) – 18001234070
Phone No.: 9711224068, 9911215212
Website: www.akinik.com
Email: akinikbooks@gmail.com

Chief Editor: Dr. Bhabesh Deka

The author/publisher has attempted to trace and acknowledge the materials reproduced in this publication and apologize if permission and acknowledgements to publish in this form have not been given. If any material has not been acknowledged please write and let us know so that we may rectify it.

The responsibility for facts stated, opinion expressed or conclusions reached and plagiarism, if any, in this book is entirely that of the author. So, the views and research findings provided in this publication are those of the author/s only. The Editor & Publishers are in no way responsible for its contents.

© AkiNik Publications™

Publication Year: 2023

Pages: 86

ISBN: 978-93-5570-954-7

Book DOI: <https://doi.org/10.22271/ed.book.2432>

Price: ₹ 696/-

Registration Details

- Printing Press License No.: F.1 (A-4) press 2016
- Trade Mark Registered Under
 - Class 16 (Regd. No.: 5070429)
 - Class 35 (Regd. No.: 5070426)
 - Class 41 (Regd. No.: 5070427)
 - Class 42 (Regd. No.: 5070428)

12.	INSECT REPRODUCTION AND LIFE CYCLES	111 – 120
	S. K. Zilpe and Rahul Sinha	
13.	STATUS OF WETLAND BIRDS IN AND AROUND PANVEL, NAVI MUMBAI, MAHARASHTRA	121 – 124
	Mayur Naik, Santosh Supanekar and Varun Sarwade	
14.	SHORT REVIEW ON UNDERUTILISED INDIAN RED GOOSE BERRY	125 – 127
	S. M. Prasad, A. S. Sumaya, A. Suji Devi Bala and S. Mohammed Yousuf	

Rahul Anil Sinha: Insect Reproduction and Life Cycles

ISBN: 978-93-88901-90-1

**RESEARCH TRENDS
IN LIFE SCIENCE
VOLUME II**

EDITORS:

DR. SNEHA VERMA

DR. ANURAG RAWAT

DR. KANCHAN AWASTHI

DR. SRIKANTA GURIA



BHUMI PUBLISHING, INDIA

FIRST EDITION: SEPTEMBER 2023



RESEARCH TRENDS IN LIFE SCIENCE

VOLUME II

(ISBN: 978-93-88901-90-1)

Editors

Dr. Sneha Verma

Department of Zoology,
School of Science, Maharishi University of
Information Technology, Lucknow

Dr. Anurag Rawat

Department of Zoology,
School of Science, Maharishi University of
Information Technology, Lucknow

Dr. Kanchan Awasthi

Department of Botany,
School of Science, Maharishi University of
Information Technology, Lucknow

Dr. Srikanta Guria

Department of Zoology,
Barasat Govt. College,
Barasat, Kolkata, West Bengal



Bhumi Publishing

September 2023

First Edition: September, 2023

ISBN: 978-93-88901-90-1



© Copyright reserved by the Editor

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: www.bhumipublishing.com

E-mail: bhumipublishing@gmail.com

Book Available online at:

<https://www.bhumipublishing.com/book/>



12.	INSECT REPRODUCTION AND LIFE CYCLES	111 – 120
	S. K. Zilpe and Rahul Sinha	
13.	STATUS OF WETLAND BIRDS IN AND AROUND PANVEL, NAVI MUMBAI, MAHARASHTRA	121 – 124
	Mayur Naik, Santosh Supanekar and Varun Sarwade	
14.	SHORT REVIEW ON UNDERUTILISED INDIAN RED GOOSE BERRY	125 – 127
	S. M. Prasad , A. S. Sumaya, A. Suji Devi Bala and S. Mohammed Yousuf	

INSECT REPRODUCTION AND LIFE CYCLES

S. K. Zilpe¹ and Rahul Sinha²

¹Department of Zoology, Smt. Radhabai Sarda Arts, Commerce & Science College,
Anjangaon Surji, Dist. Amravati, Maharashtra - 444705

²Department Zoology,
Indira Mahavidyalaya, Kalamb, Dist.- Yavatmal Maharashtra

Corresponding author E-mail: skzilpe13@gmail.com, rahulsinha2710@gmail.com

Abstract:

Insects, with their staggering diversity and numerical dominance in terrestrial ecosystems, have evolved an array of reproductive strategies and life cycles that are nothing short of remarkable. This chapter delves into the intricate world of insect reproduction and life cycles, shedding light on the mechanisms that drive their survival and perpetuation.

The chapter begins by exploring the reproductive strategies of insects, ranging from sexual reproduction with intricate courtship rituals to asexual reproduction via parthenogenesis. These strategies, honed over millions of years, influence genetic diversity and adaptation in insect populations.

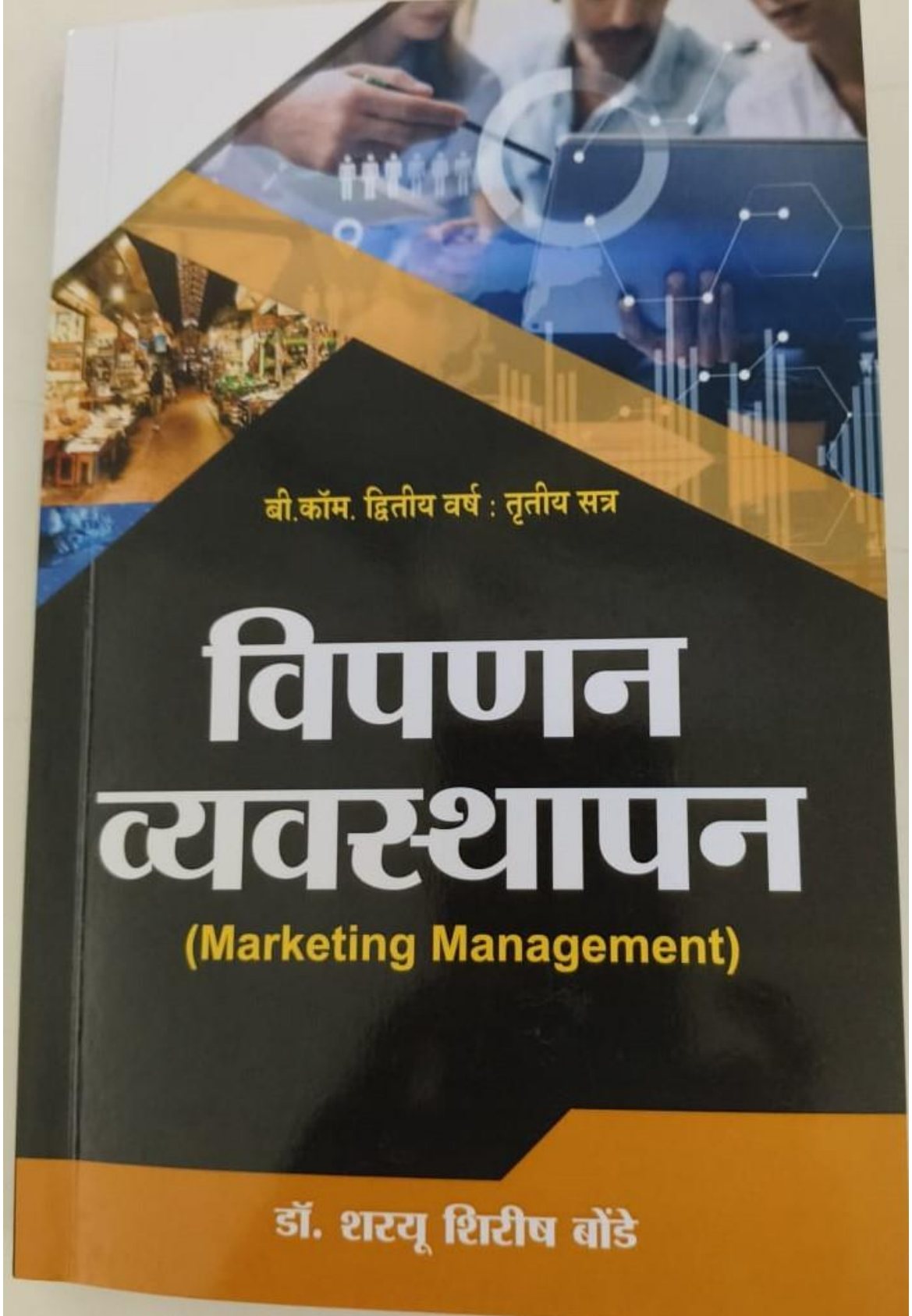
Next, the chapter delves into the various stages of the insect life cycle: eggs, larvae, pupae, and adults. Each stage boasts unique morphological and physiological adaptations tailored to their specific roles in the insect's life history. Eggs exhibit astonishing diversity in shape and structure, while larvae, with their varied forms, are the primary feeding stage. Pupation marks a transformative period, showcasing the marvel of metamorphosis, which ultimately leads to the emergence of the adult insect, the pinnacle of their life cycle.

Environmental influences on insect reproduction and life cycles are also examined in detail. Factors such as temperature, photoperiod, humidity, and resource availability play pivotal roles in shaping these processes. Temperature, for instance, affects developmental rates and can even determine the sex of offspring in certain species. Photoperiod cues insects to undergo seasonal changes, leading to adaptations known as seasonal polyphenism.

This chapter underscores the importance of understanding insect reproduction and life cycles not only for scientific curiosity but also for practical applications, including pest management and conservation efforts. The intricate interplay between insects and their environment continues to captivate researchers, offering valuable insights into the intricacies of Earth's most abundant and diverse organisms. As we peer deeper into this entomological realm, we unlock secrets that contribute to our broader understanding of ecosystems and inspire awe for the miniature wonders that share our world.

Keywords: Insect reproduction, Insect life cycles, Reproductive strategies, Mating behaviour, Metamorphosis, Environmental influences, Parthenogenesis, Seasonal polyphenism, Insect ecology, Pest management

Dr.Sharayu S.Bonde: Marketing Management





अध्ययन पब्लिशर्स एंड डिस्ट्रीब्यूटर्स

4378/4 बी, 105, जे एम डी हाउस, गली मुरारीलाल

अंसारी रोड, दरियागंज, नई दिल्ली-110002

फोन : 011-23263018, मोबाइल: 91-9899349433

E-mail : adhyayanpublishers@yahoo.com

Website : www.adhyayanbooks.com

₹ 300/-



विद्यापीठ अनुदान आयोगाच्या शिफारशीनुसार संत गाडगेबाबा अमरावती
विद्यापीठाच्या बी. कॉम. द्वितीय वर्षाच्या तृतीय सत्राकरिता नव्या अभ्यासक्रमानुसार
लिहिलेले पाठ्यपुस्तक तसेच महाराष्ट्रातील सर्व विद्यापीठांच्या
वाणिज्य शाखेकरिता उपयुक्त

बी. कॉम. द्वितीय वर्ष : तृतीय सत्र

विपणन व्यवस्थापन (Marketing Management)

डॉ. शरयू शिरीष बोंडे

एम.कॉम., एम.फिल., पीएच.डी.
सहाय्यक प्राध्यापक (वाणिज्य),
इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ



अध्ययन पब्लिशर्स आणि डिस्ट्रीब्युटर्स, नवी दिल्ली

SYLLABUS

Sant Gadge Baba Amravati University, Amravati
B. Com. - I : Semester : I
(2022 - 2023)

Marketing Management

Unit-I : Introduction to Marketing and Marketing Management

Marketing Concepts Marketing Process Marketing mix - Marketing environment - Consumer Markets and buying behaviour Market segmentation and targeting and positioning.

Unit-II : Product Decisions

Concept of a Product - Product mix decisions - Brand Decision - New Product Development - Sources of New Product idea - Steps in Product Development - Product Life Cycle strategies- Stages in Product Life Cycle.

Unit-III : Price Decisions

Pricing objectives - Pricing policies and constraints - Different pricing method - new product pricing, Product Mix pricing strategies and Price adjustment strategy.

Unit-IV : Place/Channel Decision

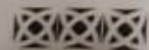
Nature of Marketing Channels - Types of Channel flows - Channel functions - Functions of Distribution Channel - Structure and Design of Marketing Channels - Channel co-operation, conflict and competition - Retailers and wholesalers.

Unit-V : Promotion Decision Promotion mix Advertising Decision

Advertising objectives Advertising and Sales Promotion Development Advertising Programme - Role of Media in Advertising - Advertisement effectiveness - Sales force Decision.

Unit-VI : Skills Enhancement Module :

1. Analyze the marketing mix for vegetable and fruits market.
2. Analyze the marketing mix for Local Service Industries.
3. Analyze the marketing segmentation for vegetable and fruits market.
4. Analyze the marketing segmentation for Local Service Industries.



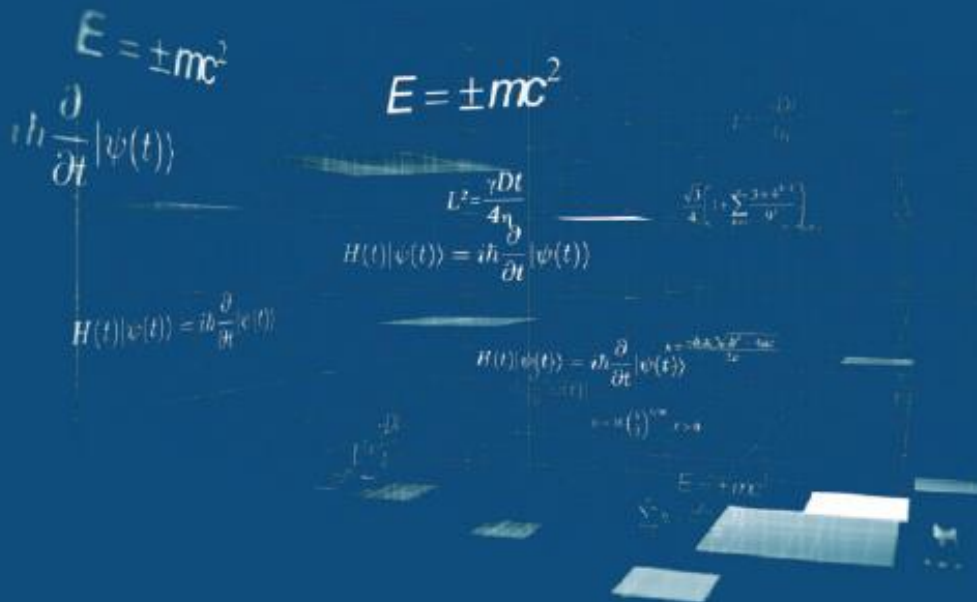
Peer Reviewed & Refereed

Research Trends in Mathematics and Statistics

VOLUME - 24

Chief Editor
Dr. Arun Kumar Bharti

Co-Editor
Dr. V.K. Tripathi



AKINIK
PUBLICATIONS

Research Trends in Mathematics and Statistics

Volume - 24

Chief Editor

Dr. Arun Kumar Bharti

Assistant Professor, Department of Statistics, Meerut College, Meerut,
Uttar Pradesh, India

Co-Editor

Dr. V.K. Tripathi

Assistant Professor (Mathematics),
Department of Mathematics, Directorate of Distance Education,
GJUS & T, Hisar, Haryana, India

Dr. Savita Deswal

Associate Professor, Department of Mathematics, Government P.G. College
for Women, Rohtak, Haryana, India

AkiNik Publications®

New Delhi

Published By: AkiNik Publications

AkiNik Publications
169, C-11, Sector - 3,
Rohini, Delhi-110085, India
Toll Free (India) – 18001234070
Phone No. – 9711224068, 9911215212
Email – akinikbooks@gmail.com

Chief Editor: Dr. Arun Kumar Bharti

Co-Editor: Dr. V.K. Tripathi and Dr. Savita Deswal

The author/publisher has attempted to trace and acknowledge the materials reproduced in this publication and apologize if permission and acknowledgements to publish in this form have not been given. If any material has not been acknowledged please write and let us know so that we may rectify it.

The responsibility for facts stated, opinion expressed or conclusions reached and plagiarism, if any, in this book is entirely that of the author. So, the views and research findings provided in this publication are those of the author/s only. The Editor & Publishers are in no way responsible for its contents.

© AkiNik Publications™

Publication Year: 2023

Pages: 143

ISBN: 978-93-5570-852-6

Book DOI: <https://doi.org/10.22271/ed.book.2462>

Price: ₹ 753/-

Registration Details

- Printing Press License No.: F.1 (A-4) press 2016
- Trade Mark Registered Under
 - Class 16 (Regd. No.: 5070429)
 - Class 35 (Regd. No.: 5070426)
 - Class 41 (Regd. No.: 5070427)
 - Class 42 (Regd. No.: 5070428)

Contents

S. No.	Chapter	Page No.
1.	Recent Trends in Coding Theory Mathematics behind Digital Communication in a Noisy World <i>(Rupesh R Atram)</i>	01-19
2.	Knapsack Solution by Reflection: A Theoretical Perspective <i>(Elias Munapo)</i>	21-33
3.	Spatial Autocorrelation Analysis of HIV/AIDS in Botswana <i>(Thokozile Mupundu, Ntebogang Dinah Moroke and Elias Munapo)</i>	35-48
4.	Review: Recent Developments in Linear Integer Programming <i>(Elias Munapo and Santosh Kumar)</i>	49-62
5.	Mathematical Modelling of Infectious Disease <i>(Tirthanath Doley)</i>	63-74
6.	Numerical Approximation of Nonlinear Inhomogeneous Dispersive-Diffusive Equation by Semi-Analytical Method <i>(Dr. Amitha Manmohan Rao and Dr. Anand H Agadi)</i>	75-86
7.	Weakly Nonlinear Bénard-Darcy Convection under Rotation Speed Modulation and Internal Heating Effects <i>(Sh. Manjula and Palle Kiran)</i>	87-105
8.	A Numerical Study on Impact of Mass and Heat Transfer on MHD Micropolar Fluid Flow over a Permeable Surface in Presence of Thermal Radiation <i>(Mayzul Alom Hussain and Sahin Ahmed)</i>	107-130
9.	Solvable Groups <i>(Dr. Krishna Gopal Pradhan)</i>	131-143



TECHNOLOGY METHOD AND PROCESS

CHAPTER AUTHOR

DEEPA MATHOLA, DR. BUCHI RAJWADE, SUBENDRA VIKRAM SINGH PADIYAL, DR. UMESHCHANDER SINGH, PRADEEP SINGH, DR. S. PRAVEENKUMAR, MR. VEERAM KESARASANI VEDU, MR. MUNAK DEEPAKUMAR DANDU, MR. DIBAKRANAND AJITBHO LAD, ANAND SINGH THAKUR, DR. SHALINI SHUKLA, DR. CH. VENKATESWARA RAO, DIVYAN DR. NITIN SHARMA, DR. ANJAN SINGHA, JYOTI KUMAR, DR. N. VASOYA, DR. REENU BAN, MEDHRA, DR. SATYAJA SINGH RAO, DR. SHYU RAJ, DR. VICKY WATEAR, SUMIT KUMAR GUPTA, SUMIT KUMAR GUPTA, SUMIT KUMAR GUPTA, MAHOMANZI, MR. AJEELSHYA JYOTI PATTANAYAK, MR. ADNA PRYADARSHAN, SUMIT KUMAR GUPTA, DR. AMAN SHARMA, DR. CH. VENKATESWARA RAO, DR. LIENA PREETI LAERA, DR. YASHKANT KUMAR PATIL, SHUBHAM SUBHASH MAURTA, SAHJ DEVENDRA SINGH, SOHRAJ SATISH, VISHAKHAR SUDARSHAN DIXIT, POOJESH D. NADIVKAR, SHUBHAM SUBHASH MAURTA, SAHJ DEVENDRA SINGH, SAMYA SARANAM, PROF. K. SANKHU BANSI, DR. RAJUL CHOUDHARY, DR. SACHA KRISHNA PEDI, AMIT MATHY, MRS. SUREKA SHARMA, RAJAM NIRMAL K KIRAN, DR. SUBHASINI KAS, SHANAY AHMAD KHAN, DR. ETTOM VITA, DR. GONIND SINGH, DR. SHEERA NAR, PROF. DEEPA MANJU NAR, PROF. RAJHPAL KASHI SAINI, PROF. GAURAV DESHMUKH, PROF. SHEENA NAR, DR. VIKASHAY SHARMA, ASHESH PANDAY, MR. MADHURAN PANDURAN SHAR, MRS. SHEEPA RAJAL, SHANORAKA, DR. KALPANA TEWARI, MR. SHINATH'S PAL UDAY SHARMA



Geh Press

Copyright & Scientific Book Publishers
For Your Progress & Knowledge

BOOK EDITORS:

A YASHODAS

PRADEEP SINGH

PROF. DR. B. K. SARKAR (PATENT GURU)

PROF. DR. NEENA SINGH (CO-FOUNDER)

TECHNOLOGY METHOD AND PROCESS

ISBN 978-81-967293-1-8

CHAPTER 15: DIGITAL MANAGEMENT METHOD AND PROCESS	208-223
Prof. Gaurav Deshmukh	
CHAPTER 16: MORAL EDUCATION SYSTEM	224-239
Dr. Reenu Rani Mishra	
CHAPTER 17: ADVANCED MORAL EDUCATION SYSTEM	240-253
Dr. Bathula Srihari Rao	
CHAPTER 18: HUMAN RESOURCE MANAGEMENT METHODS	254-270
Prof. Sheena Nair	
CHAPTER 19: DIGITAL VEDIC MATHEMATICS.	271-283
Dr Vicky Watkar	
CHAPTER 20: DIGITAL BANKING METHOD AND PROCESS	284-305
Prof. Rashpal Kaur Saini	
CHAPTER 21: STRATEGIC HUMAN RESOURCE MANAGEMENT OBSERVATION	306-318
Prof. Deepa Manoj Nair	
CHAPTER 22: NEW PRIMACY OF POLITICS	319-336
Sumit Kumar Gupta	
CHAPTER 23: ADVANCED VICTORY THROUGH ORGANIZATION	337-348
Dr. Sheeba Nair	
CHAPTER 24: BIOLOGY OF ANIMALS	349-362
Sumit Kumar Gupta	
CHAPTER 25: BIOLOGY OF DEFINED ANIMALS	363-374
Madhumanti	
CHAPTER 26: BIOLOGY OF ANIMALS AND OTHER	375-386
Mr. Adrushya Jyoti Pattanayak, Ms. Asma Priydarshani	
CHAPTER 27: IMMUNOLOGY FOR PHARMACY SYSTEM	387-401
Dr. Aman Sharma	
CHAPTER 28: NEW IMMUNOLOGY FOR PHARMACY SYSTEM	402-412
Sumit Kumar Gupta	
CHAPTER 29: NEW MEDICAL DIAGNOSIS AND TREATMENT SYSTEM	
Dr. Reena Singh, Dr. Vandana Singh.	413-423

TECHNOLOGY METHOD AND PROCESS
ISBN 978-81-967293-1-8

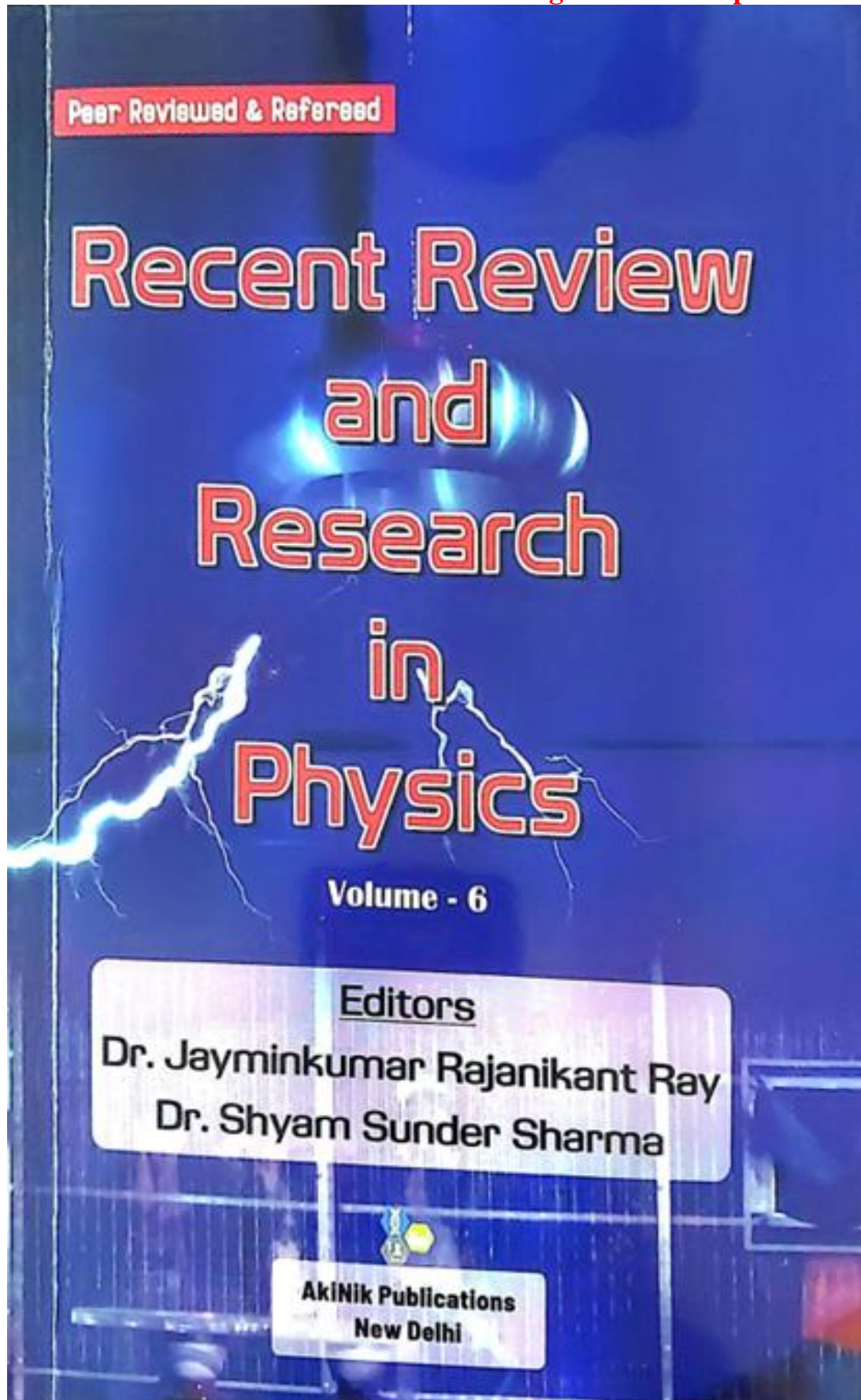
CHAPTER 19

DIGITAL VEDIC MATHEMATICS.

Dr Vicky Watkar

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

J.M. Bodulwar: Nanoscale Science: Unveiling the Microscopic Marvels



Peer Reviewed & Refereed

Recent Review and Research in Physics

Volume - 6

Editors

Dr. Jayminkumar Rajanikant Ray
Dr. Shyam Sunder Sharma


AkINik Publications
New Delhi

Recent Review and Research in Physics

Volume - 6

Editors

Dr. Jayminkumar Rajanikant Ray

Assistant Professor, Department of Physics, UKA Tarsadia University,
Surat, Gujarat, India

Dr. Shyam Sunder Sharma

Assistant Professor, Department of Physics, Govt. Mahila Engineering
College, Ajmer, Rajasthan, India

AkiNik Publications®
New Delhi

Contents

Chapters	Page No.
1. Gamma Ray Shielding and Protection <i>(Atia Atiq, Maria Atiq, Sana Mahrooz and Maria Nasrullah Khan)</i>	01-23
2. Basics of Cosmological Model <i>(Dr. Preetam Singh Gour and Dr. Shiva Soni)</i>	25-38
3. Nanoscale Science: Unveiling the Microscopic Marvels <i>(Jawahar M. Bodulwar and Sakharan B. Sangale)</i>	39-61
4. Electrifying Energy Storage: Unleashing the Power of Supercapacitors <i>(Sakharan B. Sangale and Jawahar M. Bodulwar)</i>	63-79
5. Unlocking the Secrets of Nuclei <i>(Ashish Kumar Meena and Preetam Singh Gour)</i>	81-105
6. Interstellar Dust: Unveiling Cosmic Grains and Their Enigmatic Journey <i>(Olag Pratim Bordoloi and Rupjyoti Gogoi)</i>	107-117
7. Blazars through the Eye of High Energy Astronomy <i>(Hritwik Bora and Rupjyoti Gogoi)</i>	119-133
8. A Study of Magnetized Anisotropic THDE Cosmological Model <i>(Tazmin Sultana)</i>	135-148
9. An Overview of Time Dilation Effects in the Global Positioning System <i>(Manoj Kumar Nath and Animesh Phukan)</i>	149-162
10. FLRW Universe with Barrow Holographic Dark Energy in the Framework of $f(R,T)$ theory of Gravity <i>(Dibyajyoti Das and Kankana Pathak)</i>	163-181

Chapter - 3
**Nanoscale Science: Unveiling the Microscopic
Marvels**

Authors

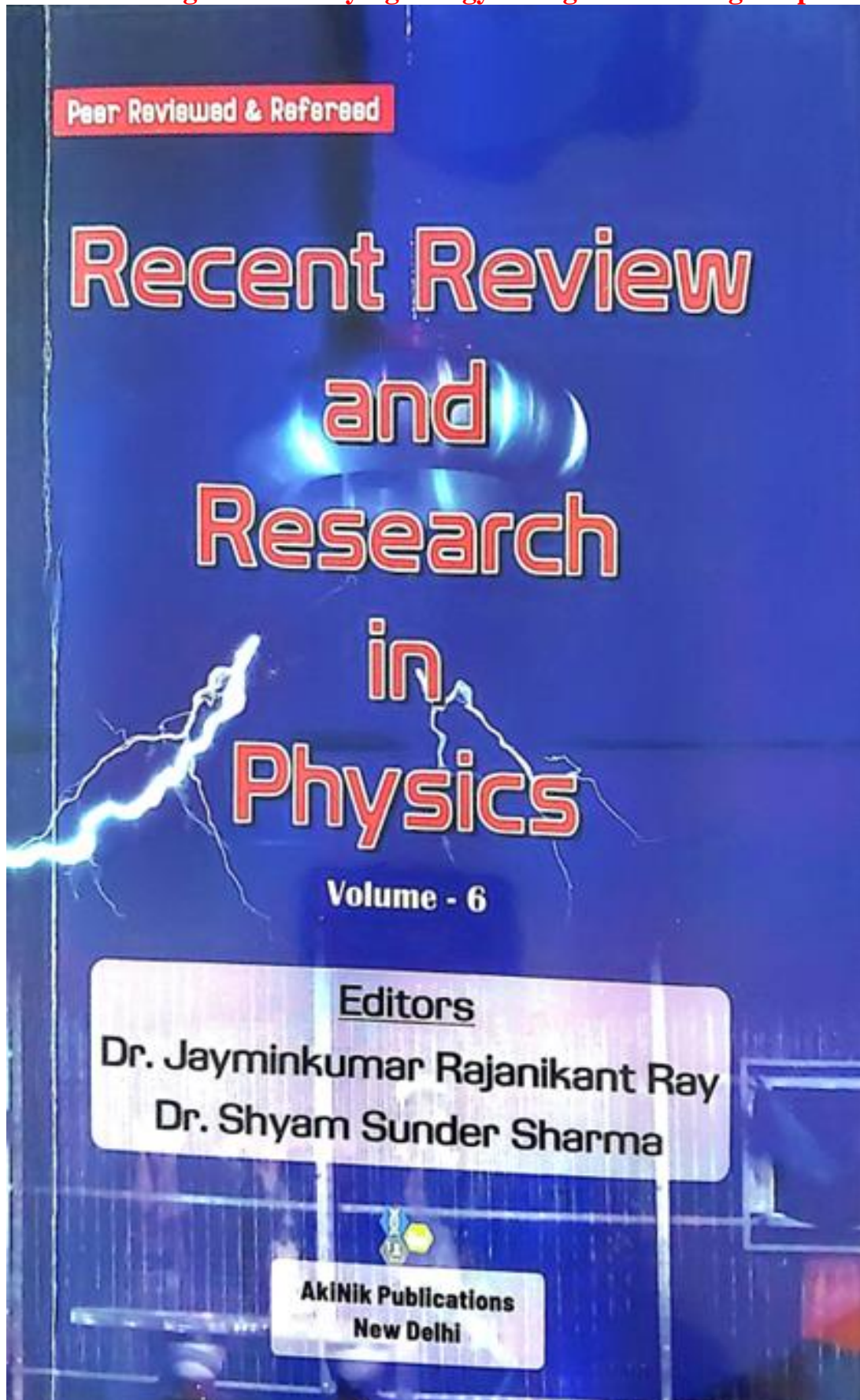
Jawahar M. Bodulwar

Assistant Professor of Physics, Department of Physics, Indira
Mahavidyalaya, Kalamb, Yavatmal, Maharashtra, India

Sakharam B. Sangale

Assistant Professor of Physics, Department of Physics, Indira
Mahavidyalaya, Kalamb, Yavatmal, Maharashtra, India

Sakharam.B. Sangale: Electrifying energy storage: unleashing the power of



Recent Review and Research in Physics

Volume - 6

Editors

Dr. Jayminkumar Rajanikant Ray

Assistant Professor, Department of Physics, UKA Tarsadia University,
Surat, Gujarat, India

Dr. Shyam Sunder Sharma

Assistant Professor, Department of Physics, Govt. Mahila Engineering
College, Ajmer, Rajasthan, India

AkiNik Publications®
New Delhi

Contents

Chapters	Page No.
1. Gamma Ray Shielding and Protection <i>(Atia Atiq, Maria Atiq, Sana Mahrooz and Maria Nasrullah Khan)</i>	01-23
2. Basics of Cosmological Model <i>(Dr. Preetam Singh Gour and Dr. Shiva Soni)</i>	25-38
3. Nanoscale Science: Unveiling the Microscopic Marvels <i>(Jawahar M. Bodulwar and Sakharan B. Sangale)</i>	39-61
4. Electrifying Energy Storage: Unleashing the Power of Supercapacitors <i>(Sakharan B. Sangale and Jawahar M. Bodulwar)</i>	63-79
5. Unlocking the Secrets of Nuclei <i>(Ashish Kumar Meena and Preetam Singh Gour)</i>	81-105
6. Interstellar Dust: Unveiling Cosmic Grains and Their Enigmatic Journey <i>(Olga Pratim Bordoloi and Rupjyoti Gogoi)</i>	107-117
7. Blazars through the Eye of High Energy Astronomy <i>(Hritwik Bora and Rupjyoti Gogoi)</i>	119-133
8. A Study of Magnetized Anisotropic THDE Cosmological Model <i>(Tazmin Sultana)</i>	135-148
9. An Overview of Time Dilation Effects in the Global Positioning System <i>(Manoj Kumar Nath and Animesh Phukan)</i>	149-162
10. FLRW Universe with Barrow Holographic Dark Energy in the Framework of $f(R,T)$ theory of Gravity <i>(Dibyajyoti Das and Kankana Pathak)</i>	163-181

Chapter - 4
**Electrifying Energy Storage: Unleashing the
Power of Supercapacitors**

Authors

Sakharam B. Sangale

Assistant Professor, Department of Physics, Indira
Mahavidyalaya, Kalamb, Yavatmal, Maharashtra, India

Jawahar M. Bodulwar

Assistant Professor, Department of Physics, Indira
Mahavidyalaya, Kalamb, Yavatmal, Maharashtra, India

Dr. Prachi. R. Bonde: A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application

ISBN 978-81-953708-7-0



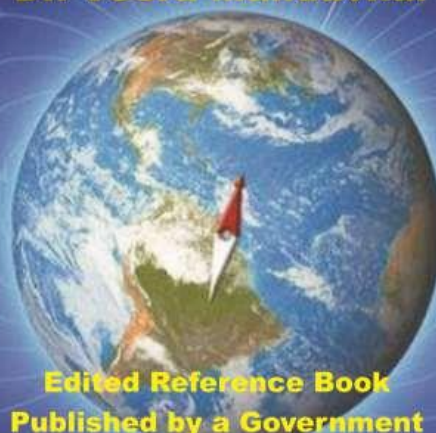
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathi pradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application

Dr. Prachi R. Bonde

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401,
Maharashtra, India, bondeprachi@gmail.com

Abstract:

In this study, the structural, optical, and electrochemical properties of chemically oxidatively polymerized polyaniline nanoparticles (PANi NPs) are investigated. The researchers get more understanding of the optical band gap, shape, electrical structure, charge transport behaviour, and redox characteristics of the nanoparticles by employing a variety of analytical approaches. This paper also explores potential applications of PANi NPs in biological applications, sensors, electrochromic devices, energy storage, and corrosion prevention. PANi NPs' high specific capacitance and energy density are examined as potential supercapacitor electrode materials. As analyte contact occurs, conductivity changes are used in the fabrication and characterization of gas sensors. Additionally, PANi NPs are assessed for altering light transmission in displays and smart windows. Because of their self-healing and conductive qualities, they are also being investigated for corrosion prevention coatings. The study's conclusion highlights important findings and offers recommendations for more PANi NP research and development for cutting-edge technological applications.

Keywords: *Optical Properties, Electrochemical Behaviour, Structural Characterization, Polyaniline Nanoparticles, Nanostructured Polymers, And Nanoparticle Synthesis.*

Form IV (See Rule 8)

Statement about ownership and other particulars about the edited book
Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhaui Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Sakharam.B. Sangale: Sunrise of Innovation: The Evolution of Solar Cells

ISBN 978-81-953708-7-0



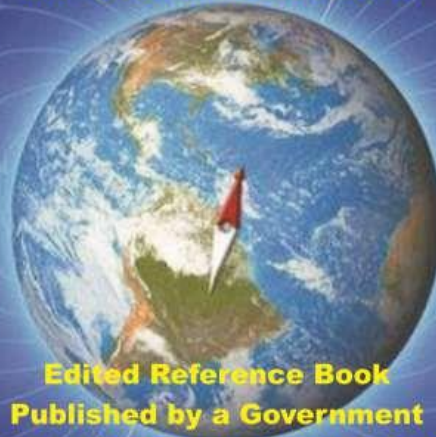
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

Sunrise of Innovation: The Evolution of Solar Cells

Sakharam B. Sangale

Assistant Professor

Department of physics

Indira Mahavidyalaya kalamb, Yavatmal, Maharashtra

sakhya813@gmail.com

Abstract:

The urgent need for clean energy in the face of environmental challenges has led to the exploration of various sustainable sources, including solar power. This chapter serves as an introduction to the intricate world of solar cells, delving into their scientific principles and historical evolution. The journey of solar cells spans key milestones from the discovery of the photoelectric effect in 1839 to the modern era of technological innovations and increased solar power installations. The working principle of solar cells involves the photovoltaic effect, converting sunlight into electricity through semiconductor materials. The chapter explores the basic types of solar cells, such as Crystalline Silicon Solar Cells, Thin-Film Solar Cells, Organic Photovoltaic Cells, Perovskite Solar Cells, Multijunction Solar Cells, and Dye-Sensitized Solar Cells, each with its unique characteristics and applications. The summary encapsulates the significance of solar cells in the quest for cleaner and more efficient energy sources, setting the stage for a deeper exploration of their types, applications, and challenges.

Keywords: clean energy, sustainable sources, solar cells, photoelectric effect, photovoltaic effect, semiconductor materials, Crystalline Silicon Solar Cells, Thin-Film Solar Cells, Organic Photovoltaic Cells, Perovskite Solar Cells, Dye-Sensitized Solar Cells

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book
Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

S. R. Khandekar: An overview: Green synthetic approach towards schiff's base metal complexes

ISBN 978-81-953708-7-0



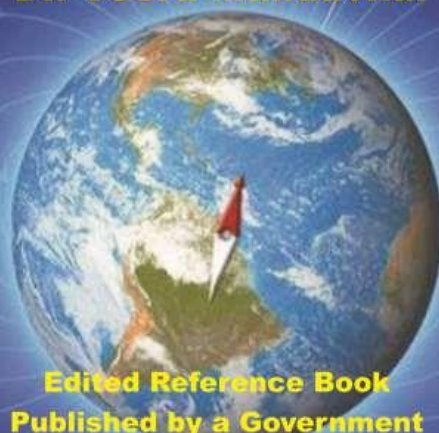
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathi pradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

An overview: Green synthetic approach towards schiff's base metal complexes

S. R. Khandekar

Department of Chemistry, Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal, (MH) India.

Email – snehalkhandekar18@yahoo.com

Abstract

This review paper explores the emerging paradigm of green synthesis as applied to the fabrication of Schiff base metal complexes. The significance of Schiff base metal complexes lies in their versatile applications, ranging from catalysis to medicinal chemistry. Green synthesis methodologies are increasingly recognized for their sustainable and environmentally friendly attributes. This paper delves into various green synthesis approaches, including plant-mediated synthesis and the use of renewable resources, highlighting their potential to revolutionize the traditional methods of obtaining Schiff base metal complexes. The study emphasizes the advantages of green synthesis, such as reduced environmental impact and improved sustainability, comparing these outcomes with complexes obtained through conventional methods. Furthermore, the research explores the applications of green-synthesized Schiff base metal complexes, showcasing their efficacy in catalytic processes and medicinal applications. The paper concludes by discussing the challenges and future prospects of implementing green synthesis in this domain, paving the way for a more environmentally conscious and sustainable approach to the synthesis of Schiff base metal complexes.

Keywords: Green synthesis, Schiff base metal complexes, plant-mediated synthesis.

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Sharayu. Bonde: An Introduction to Intellectual Property Rights and their Importance

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathi pradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

An Introduction to Intellectual Property Rights and their Importance

Dr. Sharayu Bonde
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal 445401, Maharashtra, India

Abstract:

This research paper provides a comprehensive introduction to Intellectual Property Rights (IPRs) and explores their significance in contemporary society. Intellectual Property (IP) encompasses a broad range of creations, including inventions, literary and artistic works, designs, symbols, names, and images used in commerce. The protection of these intellectual creations is crucial for fostering innovation, promoting economic growth, and safeguarding the rights of creators and innovators. The paper delves into the various types of IPRs, such as patents, copyrights, trademarks, and trade secrets, examining their individual characteristics and the role they play in shaping the modern global economy. Additionally, the paper discusses the challenges and debates surrounding IPRs, including issues of accessibility, balancing public interest, and addressing the ethical implications of IP protection.

Keywords: Intellectual Property Rights, Patents, Copyrights, Trademarks, Trade Secrets

Introduction:

In today's interconnected and rapidly evolving world, the realm of intellectual property has emerged as a cornerstone in fostering innovation, protecting creativity, and driving economic growth. Intellectual Property Rights (IPRs) play a pivotal role in shaping the landscape of commerce, technology,

Form IV (See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Jawahar. M. Bodulwar: Nanoscience in practice: A Deep Dive Into the modern healthcare

ISBN 978-81-953708-7-0



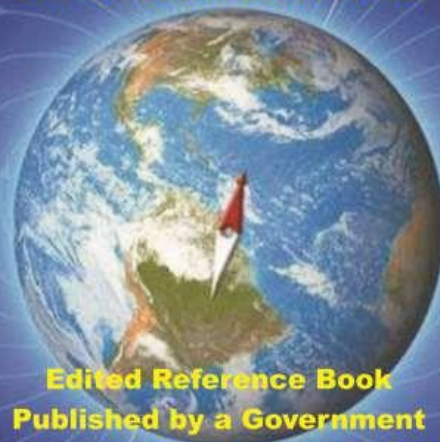
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions

Jawahar M. Bodulwar

Assistant Professor of Physics

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

jawaharbodulwar@gmail.com 7841989736

Abstract

In recent decades, the integration of nanotechnology into healthcare has ushered in an era of unprecedented advancements, revolutionizing diagnostics, drug delivery, and overall patient care. This research paper explores the multifaceted realm of nanotechnology in healthcare, delving into its profound impact on early disease detection and targeted drug delivery. Operating at the nanoscale, nanotechnology manipulates materials at dimensions smaller than 100 nanometers, offering unique capabilities for addressing longstanding challenges in medicine. The paper navigates the transformative landscape of nanotechnology applications, from the development of nanoscale diagnostic tools for early disease detection to the precision and efficacy of nanocarriers in drug delivery. Nanoparticles, nanodevices, and nanomaterials exhibit properties distinct from their macroscopic counterparts, providing novel avenues for personalized medicine and enhanced medical imaging. However, alongside these breakthroughs come challenges and ethical considerations. Safety and toxicity of nanomaterials raise concerns about their long-term impact on human health, necessitating a thorough understanding of the safety profile of nanomedicines and robust regulatory frameworks. Ethical considerations surrounding patient consent, privacy, and equitable distribution of nanomedical technologies must be carefully examined to balance innovation with ethical standards and foster public trust.

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Rupesh Rambhau Atram: Some Basic Graphs in Graph Theory

ISBN 978-81-953708-7-0



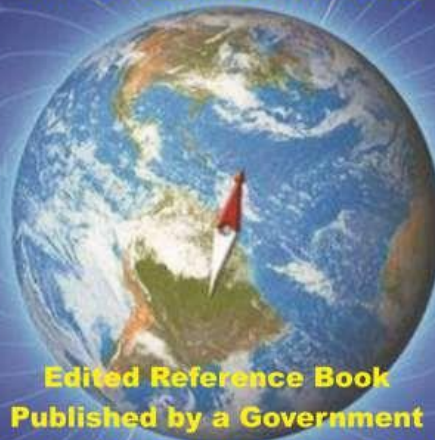
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - Dr. Savita V. Nichit	07-12
2	Optical properties and photoluminescence study of Sm ³⁺ activated BaAl ₂ B ₂ O ₇ phosphor by combustion method - R. S. Palaspagar	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - Dr. Prachi R. Bonde	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - S. R. Khandekar	33-41
5	An Introduction to Intellectual Property Rights and their Importance - Dr. Sharayu Bonde	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - Jawahar M. Bodulwar	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - Sakharam B. Sangale	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - Dr. Antara Saha	72-80
9	Some Basic Graphs in Graph Theory - Rupesh Rambhau Atram	81-88

Some Basic Graphs in Graph Theory

Rupesh Rambhau Atram

Assistant Prof. in Mathematics

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

rupeshatram10@gmail.com 8999048630

Abstract

Graph theory, a captivating field at the intersection of mathematics and network science, provides a powerful framework for modelling and understanding complex relationships. This chapter serves as a gateway to the world of graphs, beginning with the foundational elements such as types, representation, and terminology.

Moving beyond the basics, we explore connectivity patterns, cycles, and critical structural components like bridges and cut vertices. As we unravel these concepts, the chapter introduces the way for a comprehensive journey into advanced topics, real-world applications, and algorithmic problem-solving techniques. From social networks to transportation systems, the abstract relationships within graphs this chapter aims to illuminate the essence of graph theory and its pervasive impact on modern problem-solving and analysis.

Key Words: Königsberg problem, Complete Graph, Planar Graphs

Introduction

Graph theory, a captivating branch of mathematics, unveils a world of interconnectedness and structure, where relationships and dependencies are visualized through nodes and edges. Originating from the study of the renowned Seven Bridges of Königsberg problem in the 18th century, graph

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Rahul A. Sinha: Biodiversity and Human Health: A Symbiotic Relationship

ISBN 978-81-953708-7-0



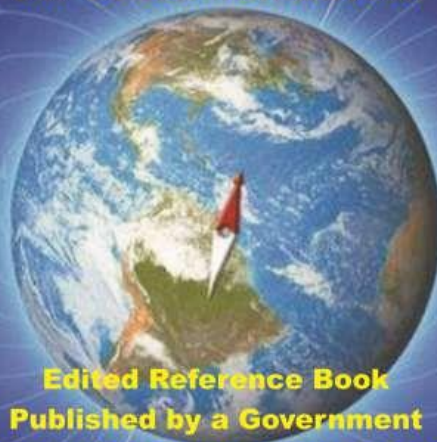
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Biodiversity and Human Health: A Symbiotic Relationship

Rahul A. Sinha

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra
rahulsinha2710@gmail.com

Introduction

Biodiversity, a portmanteau of "biological diversity," refers to the variety of life on Earth across all levels of biological organization, encompassing genetic diversity within species, diversity between species, and diversity of ecosystems. This complex and dynamic web of life is the result of billions of years of evolution, resulting in a staggering array of organisms, ecosystems, and ecological processes. Biodiversity is not static but rather continuously evolves in response to environmental changes and interactions among living organisms.

At its core, biodiversity comprises three main components: genetic diversity, species diversity, and ecosystem diversity. Genetic diversity refers to the variety of genes within a species, allowing for adaptation and evolution. Species diversity encompasses the number and variety of different species in a given area, fostering a rich tapestry of life. Lastly, ecosystem diversity involves the variety of ecosystems within a region, each with its unique set of species and environmental conditions.

Recognizing the interconnectedness between biodiversity and human health is crucial for understanding the intricate relationships that exist in the natural world. Human health is intricately linked to the health of the planet, and disruptions in biodiversity can have profound implications for our well-being. Ecosystems provide a myriad of services that directly and indirectly influence human health, including the provision of clean air and water, pollination of crops, regulation of climate, and the development of medicines. Moreover, the

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

**Prof. P. S. Jawade - Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem,
'Mother' & 'Caves'**

ISBN 978-81-953708-7-0



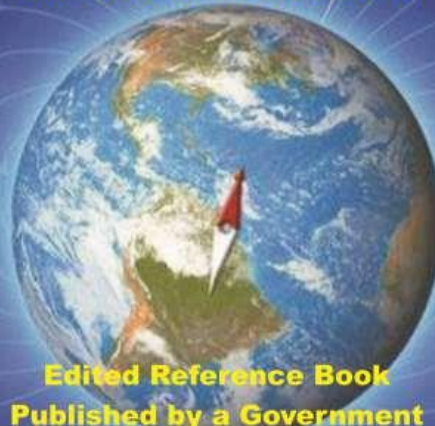
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

**Dalit women feminism & Rebel
traversed in Jyoti Langewar' Poem,
'Mother' & 'Caves'**

Prof. P. S. Jawade
Indira Mahavidyalaya Kalamb
Email Id: bhaktijawade@gmail.com

Abstract

In the literary domain the Dalit female writers gave awesome conditions of Dalit and still surviving under uncongenial and hostile atmosphere. This subjugation, caste-based oppression, possession of discriminating attitude of upper caste and their inferior treatment given to lower caste/ is observed in socially forward states like Maharashtra etc. The Dalit writers, poets portrayed the condition of underprivileged about exploitation and slavery from their own experiences and circumstances which they faced and seen in the society. These writers have been influenced by the ideologies and principles of Jyotiba Phule and Dr. B. R. Ambedkar the Dalit icons who fought for equality and liberty of Dalit in India.

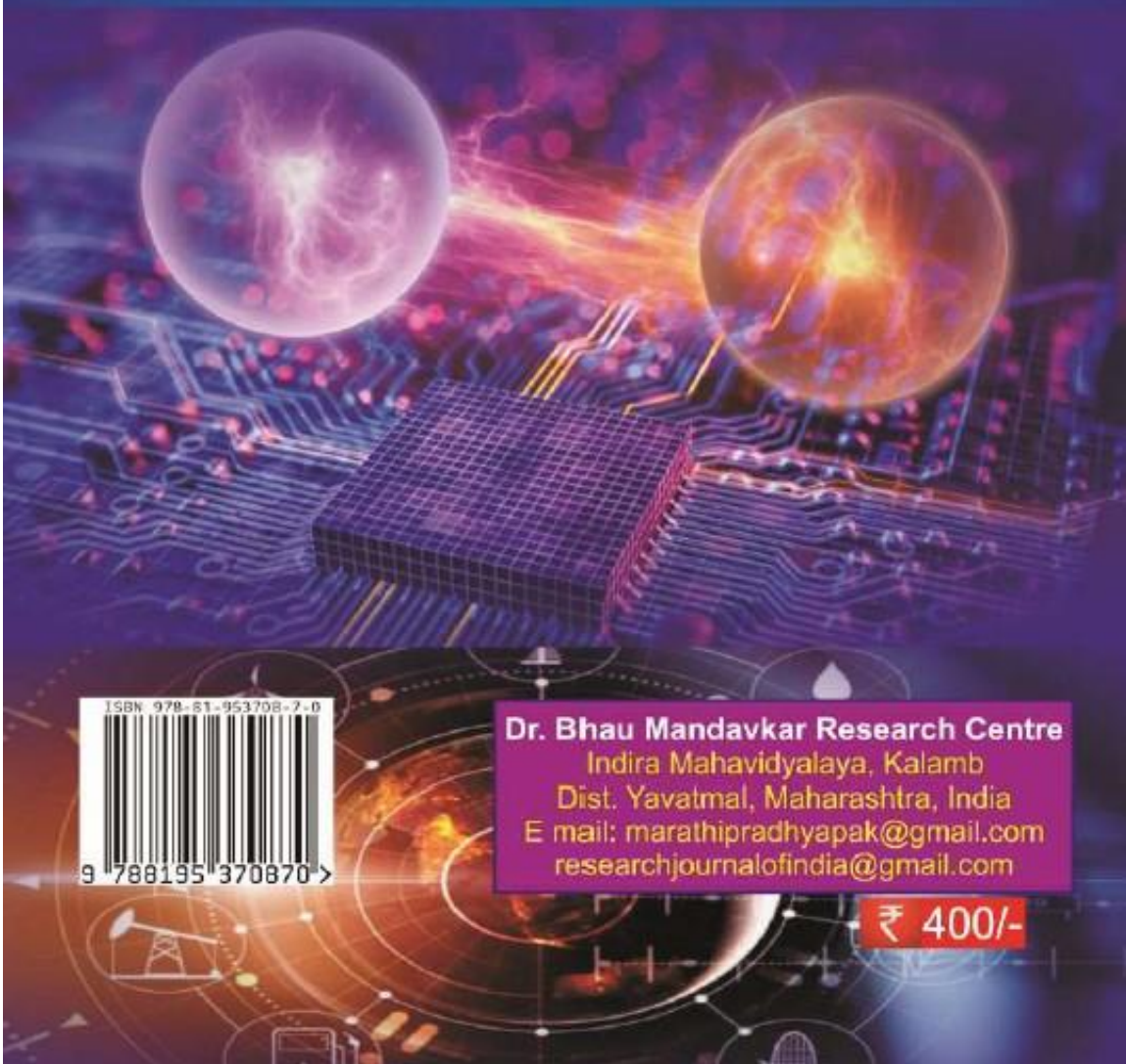
After the literary meet in Nagpur in 1976 Dalit women's writing came into prominence. The emergence of Dalit poetry was full of aggressive language and focused on the collective identity. Their poems mirrored Dalit existence and demands of human values useful to bring social stability. Jyoti Langewar Dalit- feminist poet advocated the Dalit feminism and raising the rebel against upper caste section of society. Her poem *Caves* and *Mother* can be read on the feministic approach. In Langewar's poem collective consciousness of Dalits assertions about caste and gender-based discrimination. The poem *Mother* is real perception about double oppression by the patriarchal power dominated by women. She provokes the Dalit sensibilities to seek changes in social consciousness to make the Dalit more revolutionary about their rights and identity. This

Form IV (See Rule 8)

Statement about ownership and other particulars about the edited book
Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Vicky Watkar: Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



**Edited Reference Book
Published by a Government**

**Recognized National Level Publisher
under Peer Review System as per UGC Guidelines**

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board. The opinion expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions

Dr. Vicky Watkar

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra

Email: vickywatkar24@gmail.com

Abstract

This book chapter explores the implementation of fuzzy logic in temperature control systems, presenting a detailed analysis of its adaptive and intelligent attributes. The chapter introduces the core principles of fuzzy logic, underscoring its significance in delivering versatile and effective control solutions for temperature dynamics. Through real-world applications and case studies, the chapter illustrates the prowess of fuzzy logic in enhancing adaptability, positioning it as an indispensable tool in temperature control systems.

Keywords: Fuzzy Logic, Temperature Regulation, Adaptive Control, Linguistic Variables, Fuzzy Inference System, Membership Functions, Rules, Intelligent Control.

Introduction

Traditional temperature control methods have evolved over the years and often rely on conventional engineering approaches to maintain a desired temperature within a system. Here's a brief overview of some traditional temperature control methods:

On/Off Control: Simple on/off switching based on the deviation of the current temperature (T) from the setpoint (SP).

Proportional Control: Adjusts heating or cooling intensity proportionally to the temperature error ($e = SP - T$), We Can Mathematically express $\mu(t) = K_p \cdot e(t)$

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Pavan Mandavkar: National Education Policy 2020 and Research in Higher Education

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



**Edited Reference Book
Published by a Government**

**Recognized National Level Publisher
under Peer Review System as per UGC Guidelines**

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

National Education Policy 2020 and Research in Higher Education

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya

Kalamb, Dist. Yavatmal, Maharashtra, India 445 401

E-mail: pavanmandavkar@hotmail.com

Abstract

Research plays a significant role in accreditations as well as the competitiveness of the university or colleges, which ultimately enables it to attract top talent in terms of both students and faculty. It has been shown that research productivity is positively correlated with institutional ranking and reputation. The new National Education Policy is based on the pillars of Access, Equity, Quality, Affordability, and Accountability. Inclusion of artificial intelligence, 3D machines, data-analysis, biotechnology etc. in graduate education will create skilled professionals even in cutting edge areas and increase employability of youth. NEP-2020 has made a commitment to funding scholarly research. National Research Foundation (NRF) framed under NEP will look after funding, mentoring and development of high-end research. The strong synergy established between research, academia, and industry is bound to increase and address the global yearning for research and development. Outstanding research through higher education and development is expected through NEP-2020.

Key words:

NEP-2020, National Education Policy, Indian education system, Higher Education, Research, National Research Foundation

Introduction

The generation of new information is one of the goals of higher education, always with the intention of instructing and

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Dashrath M. Chavhan: Heavy Metals, their Health Effects and its Precautions

ISBN 978-81-953708-7-0



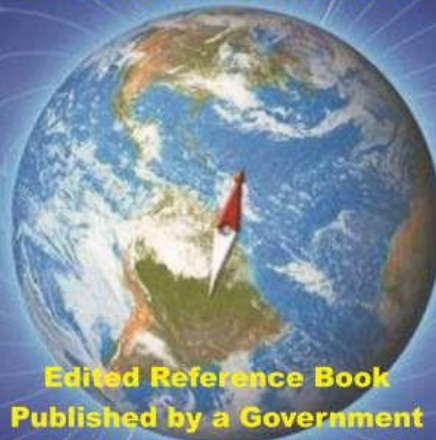
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Heavy Metals, their Health Effects and its Precautions

Dr. Dasharath M. Chavhan

Assistant Professor

Department of Chemistry

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Introduction: -

Heavy metals are nothing but the metals as like the usual metals we found in the nature, but these metals are harmful not only to the human being but also to the ecosystem¹. Due to the modernization and industrial development the heavy metals accumulation in the environment increases. Some examples of naturally occurring heavy metals are as follow.



These are the properties of a metallic substance at room temperature like to the usual metals²⁻³. Heavy metals are generally defined as metals with relatively high densities, atomic weights, or atomic numbers. Some of the most common

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Suraj A. Deshmukh: Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand

ISBN 978-81-953708-7-0



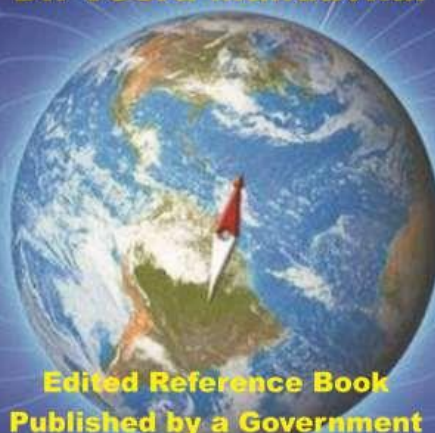
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand

Suraj A. Deshmukh

Department of Chemistry

Indira Mahavidyalaya, Kalamb Dist. Yavatmal

Abstract

Heterocyclic compounds are cyclic compound with the ring containing carbon and other element, the component being oxygen, nitrogen and sulphur. The simplest of the five membered heterocyclic compound are pyrrole, furan and thiophene, each of which contains a single heteroatoms. The five membered ring containing more than one or two heteroatoms also such as azole, pyrrole, thiazole, thiadiazole, oxadiazole, triazene Synthesis of 2-amino -5-substituted -1, 3, 4-thiadiazole (ATDA) from 4-chloro benzoic acid and thiosemicarbazide. In the present investigations synthesis and characterization of Schiff bases synthesized along with transition metal (II) complexes have been attempted due to their wide range of applicability in various field.

Keywords: Schiff Base Ligands; Thiadiazole Ring; Vanadium-Induced Cyclization

Introduction

Heterocyclic compounds are cyclic compound with the ring containing carbon and other element, the component being oxygen, nitrogen and sulphur. The simplest of the five membered heterocyclic compound are pyrrole, furan and thiophene, each of which contains a single heteroatoms. The five membered ring containing more than one or two

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Kailash Nemade: Recent Advancements in the Spintronics Application of Carbon Nanotube

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



**Edited Reference Book
Published by a Government**

**Recognized National Level Publisher
under Peer Review System as per UGC Guidelines**

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathi pradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhangre	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Recent Advancements in the Spintronics Application of Carbon Nanotube

Kailash Nemade
Department of Physics
Indira Mahavidyalaya
Kalamb, Dist. Yavatmal 445401, India

Abstract

Carbon nanotubes have emerged as promising candidates for spintronics applications due to their unique electronic and magnetic properties. In recent years, significant advancements have been made in harnessing these properties for spin-based devices and technologies. This paper reviews the latest developments in utilizing carbon nanotubes for spintronics applications, focusing on key areas such as spin transport, spin manipulation, and spin injection. Overall, this review provides valuable insights into the recent progress and potential applications of carbon nanotubes in spintronics, paving the way for the development of next-generation spin-based devices with enhanced performance and functionality.

Keywords: Electronics; Spintronics; Carbon Nanotube

1. Introduction

Spintronics, a rapidly evolving field at the intersection of electronics and magnetism, has garnered considerable attention in recent years for its potential to revolutionize information processing and storage technologies. Unlike conventional electronics, which rely solely on the charge of electrons, spintronics exploits the intrinsic spin of electrons as an additional degree of freedom for carrying and manipulating

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Ved Ramesh Patki: Applications of Statistics in Research

ISBN 978-81-953708-7-0



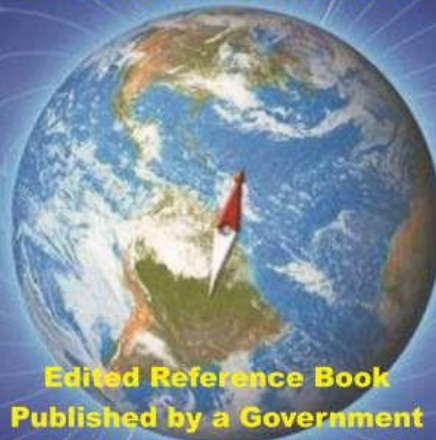
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Applications of Statistics in Research

Dr. Ved Ramesh Patki
Asst. Prof. and Head
Dept. of Zoology,
Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal, Maharashtra, India

Introduction:

In the realm of research, statistics serves as an indispensable tool for collecting, analyzing, interpreting, and presenting data (Smith, 2018). Its applications span across various fields including but not limited to social sciences, natural sciences, medicine, economics, and engineering (Jones & Brown, 2020). Statistics provides researchers with the means to derive meaningful insights from data, guiding evidence-based decision-making processes and fostering a deeper understanding of complex phenomena (Johnson et al., 2019). By employing statistical techniques, researchers can quantify uncertainty, assess the reliability of findings, and make informed conclusions based on empirical evidence (Garcia & Martinez, 2021). This chapter aims to explore the diverse applications of statistics in research, highlighting its significance in advancing knowledge and driving scientific progress across disciplines.

Descriptive Statistics:

Descriptive statistics involve the organization, summarization, and presentation of data to reveal patterns, trends, and distributions (Brown & Miller, 2017). Common descriptive techniques include measures of central tendency (mean, median, mode), measures of dispersion (range, variance, standard deviation), and graphical representations (histograms,

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Shital S. Raut: Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District

ISBN 978-81-953708-7-0



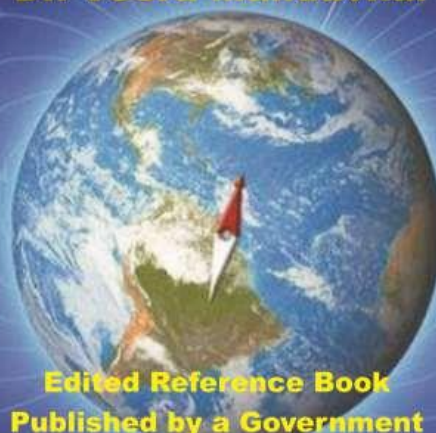
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhange	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District

Shital S. Raut

Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
shital.raut123@gmail.com

Abstract

This research aims to investigate the comparison between physical fitness and BMI concerning the position of handball players in Yavatmal district. The study encompasses a total sample size of sixty subjects, with twenty players each from back, centre, and forward positions, practicing handball for a minimum of one year across various government and private clubs/grounds in Yavatmal (M.S.). The age range of the participants falls between 18 to 25 years, and random sampling techniques were employed for participant selection. The study's hypothesis postulates that there is a significant difference in physical fitness and BMI among players of different positions. Statistical analysis will involve an independent samples t-test to compare physical fitness and BMI scores across forward, centre, and back position players. The study seeks to identify any significant differences in physical fitness and BMI, thereby informing training strategies and player development programs in the sport.

Keywords: Handball, Physical Fitness, Body Mass Index (BMI), Playing Positions, Comparative Analysis, Yavatmal District.

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

**Dr. Pandurang Ingle: A Comparative Study among Working and Non-Working Women
with Respect to Life Satisfaction**

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhangе	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction

Dr. Pandurang Bhausahab Ingle
Assist. Prof. Department of Psychology
Indira Mahavidyalaya, kalamb, Dist. Yavatmal
Contact No. : 9158686066

Abstract

This paper aims to compare life satisfaction between working and non-working women. The sample of the study 10 working women and 10 non- working women age range of 20 year to 40 year, were selected randomly from Chatrapati Sambhaji Nagar. Researcher hypotheses was that there will no significant difference between working and non working women on life satisfaction. 't' test was used to compare five dimensions of life satisfaction; Health, Personal, Economic, Marital, Social and Job. The overall life satisfaction mean score working 39.2, 5.17 S.D., and Non-working women 39.4, 2.65 S.D. ($t = 0.11$, $df = 18$, $P = NS$). which indicate there is no significance difference.

Keyword: Life satisfaction, Marital satisfaction, Job satisfaction, Marital satisfaction, working women, non- working women.

Introduction:-

Life satisfaction is the way people evaluate their lives and how they feel about their directions and options for the future. It is a measure of well-being and may be assessed in terms of mood, satisfaction with relations with others and with achieved goals, self-concepts, and self-perceived ability to cope with daily life. It is having a favorable attitude of one's life as a whole rather than an assessment of current feelings. Life

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Saroj Y. Lakhdive: Balkanchya Vikasat Palkanchi Bhumika

ISBN 978-81-953708-7-0



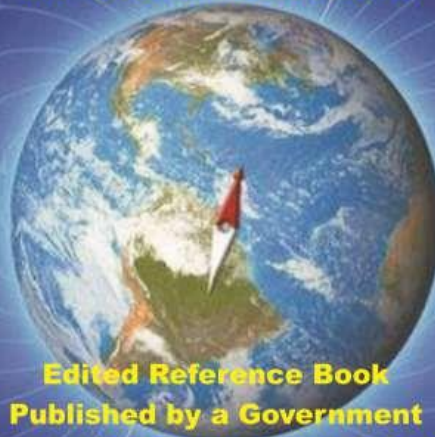
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

22	संत गाडगेबाबा यांचे जीवनकार्य — प्रा. डॉ. अनंत वराडे	192-196
23	माध्यमिक स्तरावरील विद्यार्थ्यांची स्वनियंत्रण क्षमता आणि त्यांचे सामाजिक समायोजन — एक सहसंबंधात्मक अध्ययन — डॉ. डी. एम. तिडके	197-204
24	रविकिरण मंडळाची कविता : एक दृष्टिक्षेप — डॉ. गजानन भाऊराव घोंगटे	205-214
25	पैनगंगातिरी : जगण्याच्या पुनर्रचनेची मांडणी करणारे स्वकथन — डॉ. युवराज मानकर	215-227
26	आधुनिक स्त्रीवादी मराठी कवितेतील अभिनव प्रतिमासृष्टी — डॉ. मीता दिनकरराव कांबळे	228-239
27	वैदर्भीय आंबेडकरी कविता : जागतिकीकरण वास्तव व दाहकता — प्रा. विक्रान्त कृष्णराव मेश्राम	240-261
28	लोकसाहित्य व वर्तमान समाज — डॉ. रवींद्र डाखोरे	262-268
29	चंद्रपूर जिल्ह्यातील अनुसूचित जमातीच्या लोकसंख्येच्या वितरणावर परिणाम करणाऱ्या भूपृष्ठरचना या भौगोलिक घटकाचा अभ्यास — प्रा. एन. व्ही. नरले	269-274
30	डॉ. नरेंद्र दाभोलकरांचा वैज्ञानिक व अंधश्रद्धा निर्मूलक दृष्टिकोण — प्रा. पंडित ल. काळे	275-283
31	बालकांच्या विकासात पालकांची भूमिका — प्रा. सरोज या. लखदिवे	284-289
32	यवतमाळ जिल्ह्यातील औद्योगिक विकास — डॉ. माधुरी पं. राखुंडे	290-295
33	महानुभाव पंथातील प्रेमीभक्त : बाइसा उर्फ नागबिका — डॉ. वीरा मांडवकर	296-304

बालकांच्या विकासात पालकांची भूमिका

प्रा. सरोज या. लखदिवे

गृहअर्थशास्त्र विभाग प्रमुख

इंदिरा महाविद्यालय, कलंब, जि. यवतमाळ, महाराष्ट्र

saroj20lakhadive@gmail-com

सारांश

मुलांच्या सर्वांगीण विकासात पालकांची भूमिका सर्वात महत्त्वाची असते. पालकांचे योग्य मार्गदर्शनच मुलाचे चारित्र्य विकसित करते. पालकत्व हे सतत चालणारे काम आहे. एकदा वेळ आली की आपण त्यापासून दूर जाऊ शकत न आवश्यक आहे. ज्या घरात बालकाचा जन्म होतो, त्या घरच्या वातावरणाचा संस्कार हा बालकावर प्रथम संस्कार म्हणून होतो. बालकाचा सर्वात जास्त संबंध हा घराशी येतो. मुले घरात जास्त वेळ राहात असतात. त्यामुळे घरच्या वातावरणामध्ये त्याचे व्यक्तिमत्व खुलत असते. पालकांच्या व्यक्तिमत्त्वाचा पहिला प्रभाव हा बालकांच्यावर होत असते.

बीजशब्द – पालक, बालक, विकास

प्रस्तावना

सुरुवातीला बालक हे मातीचा गोळा असते. त्याला आकार देण्याचे काम पालकांचे असते. पालकत्व आणि बालविकास हातात हात घालून चालतात. सफरचंद झाडापासून फार दूर पडत नाही आणि फांदी वाढत जाते या म्हणी मुलांच्या वाढीवर आणि विकासावर पालकत्वाच्या शैलीच्या परिणामांचे चांगले वर्णन करू शकतात. सर्व वपालकांच्या शिक्षणबरोबरच आर्थिक व सामाजिक परिस्थितीचा परिणाम बालकाच्या जडणघडणी मध्ये होत असतो. लहान मुले पालकांच्या प्रत्येक गोष्टीचे बारकाईने निरीक्षण करित असतो. परंतु पालक बालक लहान आहे असे समजून त्याच्या गोष्टीकडे दुर्लक्ष करित असतो. बालविकासात पालकांची भूमिका उत्तरदायी, जबाबदार

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

**N.V. Narule: Chandrapur jilhyachya Anusuchit Jamatichya loksankhechya vitarnavar
parinam karnarya bhuprustarachna ya bhaugolic ghatkacha abhyas**

ISBN 978-81-953708-7-0



**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar

Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

22	संत गाडगेबाबा यांचे जीवनकार्य — प्रा. डॉ. अनंत वराडे	192-196
23	माध्यमिक स्तरावरील विद्यार्थ्यांची स्वनियंत्रण क्षमता आणि त्यांचे सामाजिक समायोजन — एक सहसंबंधात्मक अध्ययन — डॉ. डी. एम. तिडके	197-204
24	रविकिरण मंडळाची कविता : एक दृष्टिक्षेप — डॉ. गजानन भाऊराव धोंगटे	205-214
25	पैनगंगातिरी : जगण्याच्या पुनर्रचनेची मांडणी करणारे स्वकथन — डॉ. युवराज मानकर	215-227
26	आधुनिक स्त्रीवादी मराठी कवितेतील अभिनव प्रतिमासुष्टी — डॉ. मीता दिनकरराव कांबळे	228-239
27	वैदर्भीय आंबेडकरी कविता : जागतिकीकरण वास्तव व दाहकता — प्रा. विक्रान्त कृष्णराव मेश्राम	240-261
28	लोकसाहित्य व वर्तमान समाज — डॉ. रवींद्र डाखोरे	262-268
29	चंद्रपूर जिल्ह्यातील अनुसूचित जमातीच्या लोकसंख्येच्या वितरणावर परिणाम करणाऱ्या भूपृष्ठरचना या भौगोलिक घटकाचा अभ्यास — प्रा. एन. व्ही. नरुले	269-274
30	डॉ. नरेंद्र दाभोळकरांचा वैज्ञानिक व अंधश्रद्धा निर्मूलक दृष्टिकोण — प्रा. पंडित ल. काळे	275-283
31	बालकांच्या विकासात पालकांची भूमिका — प्रा. सरोज या. लखदिवे	284-289
32	यवतमाळ जिल्ह्यातील औद्योगिक विकास — डॉ. माधुरी पं. राखुडे	290-295
33	महानुभाव पंथातील प्रेमीभक्त : बाइसा उर्फ नागविका — डॉ. वीरा मांडवकर	296-304

चंद्रपूर जिल्ह्यातील अनुसूचित जमातीच्या
लोकसंख्येच्या वितरणावर परिणाम करणाऱ्या
भूपृष्ठरचना या भौगोलिक घटकाचा अभ्यास

प्रा. एन. व्ही. नरुले

(भूगोल विभाग प्रमुख)

इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ, महाराष्ट्र

narulenilkantha3@gmail.com संपर्क - ९९२३९०९२९६

सारांश :-

मानव विकास क्रम जाणून घेण्याकरिता अनुसूचित जमातीच्या आर्थिक व सामाजिक वैशिष्ट्यांचा अभ्यास करणे महत्वाचे आहे. कारण की काळानुसार होणारी परिवर्तने रेखांकित करणे शक्य होते. निसर्गाशी एकरूपता, सहज संबंध, विशिष्ट बोली त्याद्वारे विचारांची देवाण घेवाण, लोकाचार व देशाचार यांचे विशिष्ट गुण, आस्था, मान्यता ईत्यादी अनुसूचित जमातीच्या लोकांचे विशेष पैलू आहेत. अलिकडच्या काळात अनुसूचित जमातींच्या समाजावरही या परिवर्तनाचा परिणाम होत आहे. सध्या यांचा विकास घडवून आणण्याकरिता शासन वेगवेगळे कार्यक्रम, धोरण, योजना राबवित आहेत. परंतु अनुसूचित जमातीचे लोक आपल्या सामाजिक सांस्कृतिक परंपरा विषयी अत्यंत संवेदनशिल असतात. त्यामुळे त्यांच्या विकासाकरिता आखलेल्या योजनांचा लाभ ते किती घेतात व त्यामुळे त्यांच्यात काही परिवर्तन घडून आलेले आहेत काय हे सुध्दा अलिकडे महत्वाचे आहे.

महाराष्ट्र राज्यातील अनुसूचित जमातींचे भौगोलिक वितरण, त्यांची लोकसंख्या व स्थिती भिन्न भिन्न आहे. महाराष्ट्रातील विविध प्रदेशातील अनुसूचित जमातींच्या संस्कृतीचे अध्ययन फारसे झालेले नाही, कारण हे लोक दुर्गम भागात राहत असल्यामुळे त्यांचा सामाजिक, आर्थिक व सांस्कृतिक रचनेचा पूर्णतः अभ्यास आजवर झालेला नाही. म्हणूनच चंद्रपूर जिल्ह्यातील अनुसूचित जमातींच्या विकासावर परिणाम करणाऱ्या भूपृष्ठरचना या भौगोलिक घटकांचा अभ्यास हा विषय घेतलेला आहे.

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Madhuri.P. Rakhunde: Yavatmal Jilyatil Audyaogik Vikas

ISBN 978-81-953708-7-0



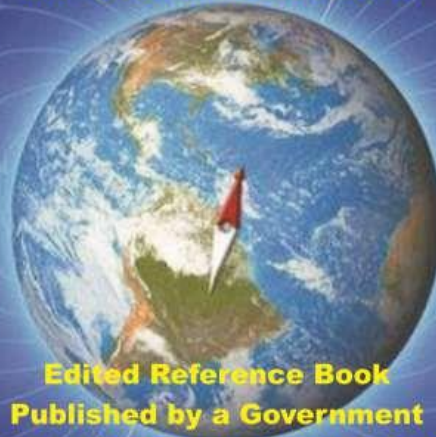
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

22	संत गाडगेबाबा यांचे जीवनकार्य — प्रा. डॉ. अनंत वराडे	192-196
23	माध्यमिक स्तरावरील विद्यार्थ्यांची स्वनियंत्रण क्षमता आणि त्यांचे सामाजिक समायोजन — एक सहसंबंधात्मक अध्ययन — डॉ. डी. एम. तिडके	197-204
24	रविकिरण मंडळाची कविता : एक दृष्टिक्षेप — डॉ. गजानन भाऊराव पोंगटे	205-214
25	पैनगंगातिरी : जगण्याच्या पुनर्रचनेची मांडणी करणारे स्वकथन — डॉ. युवराज मानकर	215-227
26	आधुनिक स्त्रीवादी मराठी कवितेतील अभिनव प्रतिमासृष्टी — डॉ. मीता दिनकरराव कांबळे	228-239
27	वैदर्भीय आवेडकरी कविता : जागतिकीकरण वास्तव व दाहकता — प्रा. विक्रान्त कृष्णराव मेश्राम	240-261
28	लोकसाहित्य व वर्तमान समाज — डॉ. रवींद्र डाखोरे	262-268
29	चंद्रपूर जिल्ह्यातील अनुसूचित जमातीच्या लोकसंख्येच्या वितरणावर परिणाम करणाऱ्या भूपृष्ठरचना या भौगोलिक घटकाचा अभ्यास — प्रा. एन. व्ही. नरुले	269-274
30	डॉ. नरेंद्र दाभोलकरांचा वैज्ञानिक व अंधश्रद्धा निर्मूलक दृष्टिकोण — प्रा. पंडित ल. काले	275-283
31	बालकांच्या विकासात पालकांची भूमिका — प्रा. सरोज या. लखदिवे	284-289
32	यवतमाल जिल्ह्यातील औद्योगिक विकास — डॉ. माधुरी पं. राखुंडे	290-295
33	महानुभाव पंथातील प्रेमीभक्त : थाइसा उर्फ नागबिका — डॉ. वीरा मांडवकर	296-304

यवतमाळ जिल्ह्यातील औद्योगिक विकास

डॉ. माधुरी पं. राखुडे
इंदिरा महाविद्यालय, कळंब, जि. यवतमाळ, महाराष्ट्र

सारांश -

यवतमाळ शहर हे यवतमाळ जिल्ह्याचे प्रशासकीय मुख्यालय आहे. २०११ च्या जनगणनेनुसार या शहराची लोकसंख्या १,२२,९०६ इतकी आहे. हे शहर जिल्ह्यातील महत्त्वाचे व्यापारी केंद्र असून येथे कापूस पिंजण्याचे आणि दावून त्याचे गडे बनवायचे उद्योग आहेत. त्यामुळे यवतमाळला कापसाचे शहर (cotton city) म्हटले जाते. जिल्ह्याचा आर्थिक व सामाजिक विकास घडविण्यात जुनी मंदिरे, यात्रा व सहलीची ठिकाणे ह्या सर्व गोष्टी मोलाचे योगदान देतात. जिल्ह्यात प्रेक्षणीय स्थळांच्या दृष्टीकोनातून असा कोणताही ऐतिहासिक किल्ला नाही. काही मंदिरे व सुंदरश्या बनवाईने नटलेली सहलीची ठिकाणे हे मात्र भाविकांना व यात्रेकरूंना नेहमी आकर्षित करतात. जिल्ह्यातील कापूस हे महत्त्वाचे पिक असल्यामुळे त्याची प्रचंड बाजारपेठ येथे आहे. कापसावर आधारित उद्योग जसे कापूस संकलन केंद्रे, जिनिंग फॅक्टरीज, सूतगिरण्या इ. येथे पहावयास मिळतात. रमंड समूहाच्या कापड उद्योगाशी संबंधित मोठा प्रकल्प येथे आहे.

प्रास्ताविक -

यवतमाळजवळच लोहारा येथे एमआयडीसी (महाराष्ट्र इंडस्ट्रियल कॉरपोरेशनने बनवलेली औद्योगिक व्यावसायिकांची उद्योग-

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Dr. Veera Mandavkar: Mahanubhav Panthatil premibhakta: Baisa urfa Nagambika

ISBN 978-81-953708-7-0



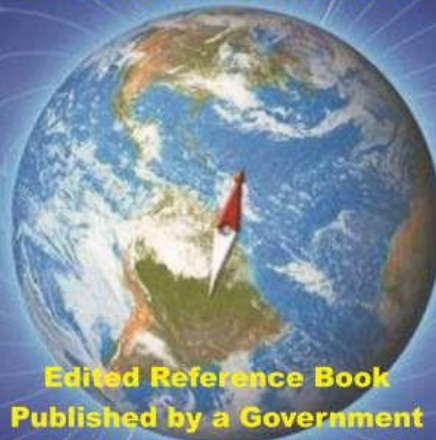
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board.
The opinion expressed are of the authors & the association advisory
board, editorial board as well as the peer committee does not hold any
responsibility for any of the views expressed. Judiciary matter in
Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

22	संत गाडगेबाबा यांचे जीवनकार्य — प्रा. डॉ. अनंत वराडे	192-196
23	माध्यमिक स्तरावरील विद्यार्थ्यांची स्वनियंत्रण क्षमता आणि त्यांचे सामाजिक समायोजन — एक सहसंबंधात्मक अध्ययन — डॉ. डी. एम. तिडके	197-204
24	रविकिरण मंडळाची कविता : एक दृष्टिक्षेप — डॉ. गजानन भाऊराव घोंगटे	205-214
25	पैनगंगातिरी : जगण्याच्या पुनर्रचनेची मांडणी करणारे स्वकथन — डॉ. युवराज मानकर	215-227
26	आधुनिक स्त्रीवादी मराठी कवितेतील अभिनव प्रतिमासृष्टी — डॉ. मीता दिनकरराव कांबळे	228-239
27	वैदर्भीय आंबेडकरी कविता : जागतिकीकरण वास्तव व दाहकता — प्रा. विक्रान्त कृष्णराव मेश्राम	240-261
28	लोकसाहित्य व वर्तमान समाज — डॉ. रवींद्र डाखोरे	262-268
29	चंद्रपूर जिल्ह्यातील अनुसूचित जमातीच्या लोकसंख्येच्या वितरणावर परिणाम करणाऱ्या भूपृष्ठरचना या भौगोलिक घटकाचा अभ्यास — प्रा. एन. व्ही. नरुले	269-274
30	डॉ. नरेंद्र दाभोलकरांचा वैज्ञानिक व अंधश्रद्धा निर्मूलक दृष्टिकोण — प्रा. पंडित ल. काले	275-283
31	बालकांच्या विकासात पालकांची भूमिका — प्रा. सरोज या. लखदिवे	284-289
32	यवतमाळ जिल्ह्यातील औद्योगिक विकास — डॉ. माधुरी पं. राखुंडे	290-295
33	महानुभाव पंथातील प्रेमीभक्त : बाइसा उर्फ नागबिका — डॉ. वीरा मांडवकर	296-304

महानुभाव पंथातील प्रेमीभक्त :

बाइसा उर्फ नागंबिका

डॉ. वीरा पवन मांडवकर

सहायक प्राध्यापक

इंदिरा महाविद्यालय, कळव, जि. यवतमाळ

veeramandavkar18@gmail.com भ्रमणध्वनी 9403014885

गोषवारा :

महानुभाव पंथाला महाराष्ट्रात अत्यंत महत्त्वाचे स्थान आहे. श्रीचक्रधरस्वामींच्या शिष्यपरिवारात अनेक स्त्रिया आहेत, ज्यांनी आपल्या प्रेममयी सेवाभावाने महानुभाव पंथात स्थान मिळविले. त्यापैकीच एक म्हणजे बाइसा उर्फ नागंबिका. प्रेमीभक्त म्हणून पंथात 'बाइसा' अजरामर आहे. बाइसेच्या उक्तीला श्रीचक्रधरांच्या उक्तीएवढेच पंथात महत्त्व दिले गेले. बाइसेच्या देहत्यागानंतर निर्माण झालेली पोकळी श्रीचक्रधरांनाही प्रकर्षाने जाणवण्याइतपत तिची पंथात मान्यता होती. तिने आपल्या कडक शिस्तीने आणि प्रेमळ स्वभावाने पंथातील सर्वांची मने जिंकली होती. मठाचा कारभार व्यवस्थित होण्यास नागंबिकेचे व्यवस्थापन हा प्रमुख घटक होता. आपले संपूर्ण आयुष्य तिने श्रीचक्रधर स्वामींची सेवा करण्यात घालविले.

Abstract:

The Mahanubhava cult has a very important place in Maharashtra. Among the disciples of Shree Chakradharaswami there are many women, who have earned a place in the Mahanubhava Pantha by their loving service. One of them is

Form IV
(See Rule 8)

Statement about ownership and other particulars about the edited book

Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-

Saroj.Y. Lakhdive: Role of Teacher in NEP 2020



Three Days

Multidisciplinary National Conference on

NEP-2020:

**Innovation in Teaching-Learning &
Evaluation Process in Higher Education**

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

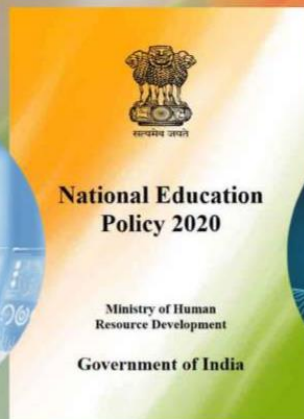
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP–2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Role of Teacher in NEP 2020

Miss. Saroj Y. Lakhadive

H.O.D. of Home-Economics

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra (India)

Email id- saroj20lakhadive@gmail.com

Abstract:

The main goal of NEP 2020 is to have an education system which gives fair access to the highest-quality education for all students regardless of social or financial background. This Policy proposes the assessment and re-forming of all aspects of the education structure to create a new system which is related with the aspirational goals of 21st century education based on traditions and values of Indian culture. The ancient and endless Indian knowledge and thoughts has been a guiding principle for this Policy. The aim of education in ancient India was not just to acquire knowledge but also to prepare one to sustain in this world. To achieve this aim, we need highly knowledgeable and experienced teachers. So, NEP has focused on maximizing the ability of teachers to do their jobs efficiently. Teacher task is not to mould the student but to unfold the hidden talent and expertise present inside the student. The National Education Policy offers various options for students to choose between subjects therefore teachers will have to play a key role in proper execution of this flexible and student-centred policy and to help students to decide on what options are to be selected for their enhancements and growth.

Keywords: NEP, Role of Teacher, Teaching Methods

Introduction:

The success of any education policy depends upon the certainty and efforts of its building blocks i.e., teachers and educators. Hence teachers must be pre-emptive in understanding in detail the aims, objectives and the axiom of the NEP and upskill themselves with laborious Incessant Professional Expansion programs, trainings, involvement in seminars, workshops, and conferences at various levels. Implementation of NEP will require dumping the old practices of memorization and repetitive learning, and adopting various innovative methods which are beyond textbooks which helps to get maximum outputs from students. The aim of Teacher should not be the syllabus completion only but to achieve learning outcomes. Teachers must recognize the concepts of unified and multiple approaches needed for development of 21st century skills. While implementing the NEP at the ground level, it becomes imperative for the teaching faculty to have strong coordination, commitment co-operation, and the motivation to transform students' life through skill and character building. Teachers are responsible for conning the future of our children which in turn results in building future of our nation. Hence the teacher is kept at the centre of this new fundamental reforms in the education system. This new education policy focuses on re-establishment of teachers at all levels, as the most respected and indispensable members of our society and tries to give everything to empower teachers and help them to do their job as effectively as possible.

Teachers play a vital role in the life of every student. Like a potter who gives proper shape to clay, teachers have the ability to mould the students and shape up their personality by influencing their thinking and motivating them to achieve their dreams.

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@sgbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

**Shital S. Raut: Impact of plyometric & cycle ergometer training on handball players
anaerobic performance**



Three Days

Multidisciplinary National Conference on

NEP-2020:

**Innovation in Teaching-Learning &
Evaluation Process in Higher Education**

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

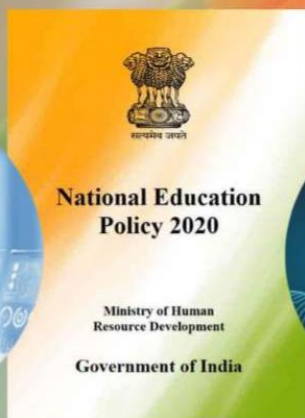
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM: The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

IMPACT OF PLYOMETRIC & CYCLE ERGOMETER TRAINING ON HANDBALL PLAYERS' ANAEROBIC PERFORMANCE

¹Mrs. Shital S. Raut

Indira Mahavidyalay, Kalamb
District: Yavatmal (M.S.)
Email: shital.raut123@gmail.com

²Dr. Pravin C. Dabare (Supervisor)

Shripad Krushna Kolhatkar Mahavidyalaya,
Jalgaon Jamod
Email: pravin.dabre@gmail.com

ABSTRACT

The purpose of the present study was to determine impact of plyometric & cycle ergometer training on Handball Players' anaerobic capacity. The participants were 30 men shot putters from Yawatmal Senior Secondary Schools, aged 14 to 18. (Maharashtra). Ten volunteers from each of the two experimental groups (Plyometric and Cycle Ergometer) and the control group were randomly chosen among the participants. The training was provided for six weeks. The two experimental groups got training three times each week, while the control group went about their normal daily activities. Data gathering focused on anaerobic capability. The Pre- and Post-tests were given in order to collect the data. Once the data had been gathered, the t-test was used to see whether there were any significant differences between the groups. For the anaerobic capacity, a covariance analysis was also utilised to identify significant differences. In order to find significant variations between the training regimens, the LSD Post hoc test was performed. The significance threshold was set at 0.05. The findings have shown the significant value of F-ratio's for anaerobic ability of all the experimental groups i.e. plyometric and cycle ergometer training programs as compared with the control group. The plyometric training program proved better than the cycle ergometer training.

Key words: Plyometric, Cycle ergometer, Anaerobic Ability

INTRODUCTION

The performance in most of the sports is determined by three factors namely physical fitness, technique and tactics. Strength is one such component which influences the performance and special attention has to be paid to it. There are three main forms of Strength viz. Maximal strength, explosive strength and strength endurance. Strength may be developed in many ways such as weight lifting, bounding with or without resistance, various drills and of course depth jumping or plyometric. In 1996, V.M. Zaciorskij's work, which was published in Russian sports literature, introduced the term "plyometric." Plyometric exercise has also been referred to by various names as shock training, speed strength, bounce training, and elastic reactivity. Exercises like plyometric training are meant to build more powerful muscles. It is preferable for athletes, sprinters, football players, and occasionally boxers to include plyometric training into their training regimen in order to increase their level of explosive power.

Layers should gradually incorporate Handball Players into their workouts and should be sure to include plenty of rest intervals in the workout so that the body can recover sufficiently between sets and between exercises. Plyometric training can be so beneficial to Handball Players because, unlike standard weightlifting, they improve the explosion of the leg muscles rather than just building strength and muscle mass. a stationary one-wheeled bike that is used as an ergometer to evaluate a person's ability to do labor-intensive tasks under controlled conditions. Cycle ergometers are not very good at determining peak performances in those who are not accustomed to riding since the leg muscles often fatigue before the rest of the body. a fitness tool that makes it possible to measure under control the volume and speed of a person's physical activity. There are various distinct ergometer kinds, each with unique benefits and drawbacks.

Form IV

(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings

NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education

1. Place of Publication	-	Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
2. Published on	-	24 Feb. 2023
3. Printer's Name	-	Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.)
4. Publisher's Name	-	Dr. Mrs. Veera Mandavkar
Nationality	-	Indian
Address	-	Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
5. Chief Editor's Name	-	Dr. Pavan Mandavkar
Nationality	-	Indian
Address	-	Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@sgbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

Prof. P. S. Jawade: NEP 2020 and Rabindranath Tagore's Vision of education



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

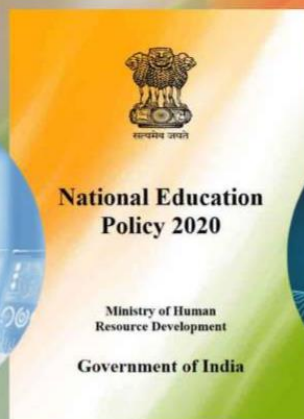
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

NEP 2020 and Rabindranath Tagore's Vision of Education

Prof. P. S. Jawade

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra (India)
Affiliated to Sant Gadgebaba Amravti University
Email: bhaktijawade@gmail.com

Abstract

India is stepped in 21st century and moving towards, knowledgeable, and skilled nation, younger Indians are likely to aspire for higher education. Taking it into consideration futuristic and well structured education policy is essential for a country at college levels due to the reason that education leads to economic and social progress. On 29 July 2020 The National Education Policy 2020 (NEP 2020), which was approved by the Union Cabinet of India and it layouts the vision of India's new education system The new policy replaces the previous National Policy on Education, 1986 This policy has a comprehensive framework regarding higher education as well as vocational training in both rural and urban India. To satisfy the global market demand the policy aims to transform India's education system by 2021. The Indian education system is very popular and diversified on the international level. It is changed from medieval to modern. but there are national figures who brought revolutionary changes in the education system and made it friendlier than pressure. Rabindranath Tagore is one of them he was divine poet born in pre-independence India. He advocated for the development of a free mind, free knowledge and a free nation he thought that schools are schools as mills of rote learning with no freedom for creativity had no influence in their life. He regarded that education is process of enlightenment and divine wealth for entire life. These thoughts are very useful in modern way of education also some pedagogies and methodologies are implemented and in draft of NEP 2020 also. This research paper highlights the relevance of educational notion of Rabindranath Tagore great literary figure in English and Bengali in the context of NEP-2020.

Keywords:

Rabindranath Tagore, freedom, nature; imagination Higher Education, National Education Policy 2020 Vishwabharti Strategies, Approaches, Challenges

Review of literature:

National Policy on Education of 1986 wanted some reforms and modifications so it is replaced by The NEP 2020. The Draft New Education Policy (DNEP) 2019 was followed by the public consultations. It had laid down many inclusive policies in the field of education for the betterment of unprivileged society. It is found that the small sized institutions are running single program and enrollment is decreasing hence to make them able to improve the quality of education.

Introduction:

Rabindranath Tagore was a multi-faceted genius; he handled every form of literature – poetry, fiction, drama, letters, lectures, and essays – and excelled in them all. Tagore also travelled far and wide, especially after receiving the Nobel Prize. Tagore also played the role of an educationist. There are mainly four fundamental principles of

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings

**NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education**

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

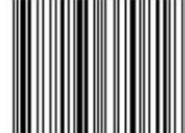
Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

Dr. Dashrath Chavhan: Value education: a GOEC through E-learning for sustainable development of society



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

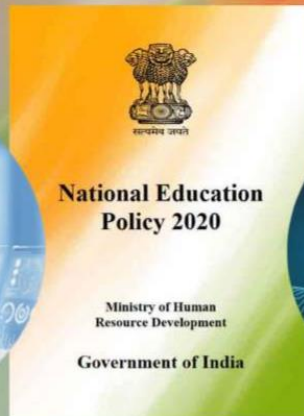
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

VALUE EDUCATION: A GOEC THROUGH E-LEARNING FOR SUSTAINABLE DEVELOPMENT OF SOCIETY

¹Dr. Dasharath M. Chavhan

¹Department of Chemistry

Indira Mahavidyalaya, Kalamb Dist Yavatmal, Maharashtra (India) 445 401

Mobile No. 9637360295/9420422581 dmchavhan1985@gmail.com

Abstract:-

Education plays the important role in transformation of knowledge among the society. Value education is the process by which people give moral values to others. E-learning as a learning process created by interaction with digitally delivered content, network-based services and tutoring support. The tremendous development in the science and technology, life of human being become more complex and faster. By preparing the live story on the moral value, recorded lecture of eminent professor can made available to people through app. It is time saving and cost effective learning. It is the easy way of learning any time anywhere without disturbing the regular life schedule of learner. This method of e-learning is beneficial for promoting equality, social justice, national cohesion and democratic citizenship. Through this we can solve the some social issues like social and emotional learning, moral reasoning development, life skills education, violence prevention, critical thinking, ethical reasoning, it also helps in becoming a better person who will be the tomorrow's future of our country it is the need of the day.

Keywords:- Value education, E-learning, moral value, time saving, social issues, democratic citizenship.

Introduction

Education plays the important role in transformation of knowledge among the society. Education also play the role in the development of an all round and well-balanced personality of the students, it will leads to all dimensions of the human intellect so that our children can help make our nation more democratic, cohesive, socially responsible, culturally rich and intellectually competitive nation. Value education is the process by which people give moral values to others.⁽¹⁾ Value-education is a many sided endeavor and in an activity during which young people are assisted by adults or older people in schools, family homes, clubs and religious and other organizations, to make explicit those underlying their own attitudes, to assess the effectiveness of these values for their own and others long term well-being and to reflect on and acquire other values which are more effective for long term well-being. Value- education is thus concerned to make morality a living concern for students. Hence, what is needed is value-education.

According to Markus E-learning as a learning process created by interaction with digitally delivered content, network-based services and tutoring support. E-learning is any technologically mediated learning using computers whether from a distance or in face to face classroom setting (computer assisted learning), it is a shift from traditional education or training to ICT-based personalized, flexible, individual, self-organized, collaborative learning based on a community of learners, teachers, facilitators, experts. E-learning is the use of Internet technologies to enhance knowledge and performance. E-learning technologies offer learners control over content, learning sequence, pace of learning, time, and often media, allowing them to tailor their experiences to meet their personal learning objectives to manage access to e-learning materials, consensus on technical standardization, and methods for peer review of these resources.⁽²⁾ e-learning can make the people more educate on the value. Recently, there has been

Form IV

(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings

NEP-2020: Innovation in Teaching-Learning & Evaluation Process in Higher Education

1. Place of Publication	-	Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
2. Published on	-	24 Feb. 2023
3. Printer's Name	-	Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.)
4. Publisher's Name	-	Dr. Mrs. Veera Mandavkar
Nationality	-	Indian
Address	-	Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
5. Chief Editor's Name	-	Dr. Pavan Mandavkar
Nationality	-	Indian
Address	-	Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@sgbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)



Suraj Deshmukh: Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

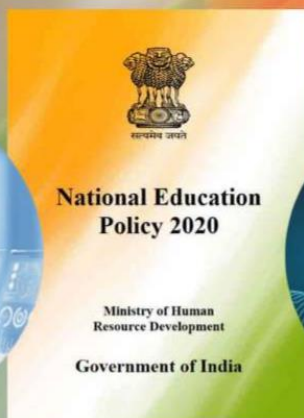
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP–2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM: The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones

Dr. Suraj Deshmukh Dr. M K Rahangdale

Nagarjuna Institute of Engineering Technology and Management

Abstract:

2-imidazolones have gained immense significance in human life due to variety of their applications. Though there are several methods for the synthesis of 2-imidazolones, most of them required longer reflux time of 8 to 10 hours. Hence the proposed work was undertaken to workout simple methodology for the synthesis of 2-imidazolones and to improve the yield of the products, by employing Zeolite as a catalyst. The work presented here describes the synthesis of some substituted 2-imidazolones obtained from substituted benzoin and urea in CH_3COOH as a solvent in presence of Zeolite as a catalyst. Substituted benzoin in turn were obtained from aromatic aldehydes by their condensation in presence of aqueous NaCN. The characterisation of synthesized compounds was made on the basis of chemical properties, elemental and spectral analysis.

Keywords:

Substituted benzoin, Urea, Methyl urea, Phenyl urea, Zeolite catalyst, 2-imidazolones

INTRODUCTION

2-Imidazolones are the heterocyclic compounds containing nitrogen atoms at 1 and 3 position and C=O group at 2 position. Imidazolones are believed to be associated with several pharmacological activities. Many natural products are believed to contain imidazolones. For example Leucetta and the Oroidin families of alkaloids have been reported to contain either 2-aminoimidazole or 2-imidazolone moiety.

1,3 Azoles (e.g. 2-imidazolones) are found to exist in their carbonyl tautomeric forms. There is less aromatic character in such systems which can be illustrated by the acid catalyzed dimerization of 2-imidazolone which acts as an enamide in the process. The Leucetta and Oroidin families of alkaloids¹ have been identified which contain either 2-aminoimidazole or 2-imidazolone moiety²⁻³. Glass D et al.⁴ reported 4-(4-Guanidinobenzoyl)-2-imidazolones and related compounds having phosphodiesterase inhibitors and novel cardio tonics with combined histamine H_2 receptor agonist and PDE 111 inhibitor activity. Stoffel and speziale⁵ described the preparation of 2-imidazolones by a novel ring closure of propynylureas with phosphorous penta chloride 2-imidazolone was obtained via a stable isolable imidazolium chloride. Jie-Fei Cheng et al.⁶ carried out A traceless solid phase synthesis of 2-imidazolones. Polymer-bound glycerol resin was reacted with bromo acetaldehyde diethyl acetal to give the cyclic acetal bromide on the solid support. Inas M AlNashef⁷ described a novel method for the synthesis of 2-imidazolones. The superoxide ion electrochemically generated reduction of oxygen or chemically generated by dissolving potassium superoxide in ionic liquids, react with alkyl imidazolium cations of imidazolium based ionic liquids at room temperature and atmospheric pressure to give the corresponding 2-imidazolones in excellent yield. Congiu et al.⁸ reported in vitro antitumor activity of new 1,4-diarylimidazole-2-ones and their 2-thione analogues has been conceded by Compounds bearing a 3,4,5-trimethoxyphenyl ring linked to either N-1 or C-4 position of the imidazole core demonstrated an interesting profile of cytotoxicity with preferential activity against leukemic cell lines. Compound exhibited a potent antitumor activity against MOLT-4 (GI50 = 20 nM) and SR (GI50 = 32 nM) cell lines.

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
**NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education**

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@sgbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**
RECOGNIZED BY UGC UNDER 2 F & 12 B
NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



**Kailash Nemade: Re-Visiting Indian Education with a STEM: The Game Changer
Teaching Methodology in NEP 2020**



Three Days

Multidisciplinary National Conference on

NEP-2020:

**Innovation in Teaching-Learning &
Evaluation Process in Higher Education**

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

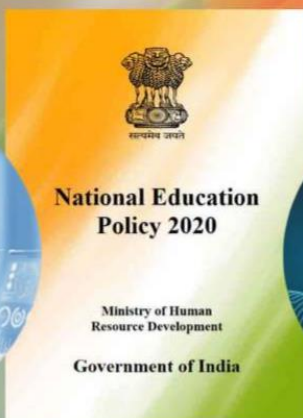
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Re-Visiting Indian Education with a STEM: The Game Changer Teaching Methodology in NEP 2020

Kailash Nemade^a, Ved Patki^b

^aDepartment of Physics, Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401.

^bDepartment of Zoology, Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401.

Corresponding Author E-Mail Address : vedpatki@gmail.com (Dr. VedPatki)

Abstract

Science Technology Engineering Mathematics (STEM) subjects are gradually being acknowledged as being an essential component of education. Consequently, STEM education plays a crucial part in the National Education Policy 2020. When discussing the lack of trained people and subpar education in certain disciplines, the term "STEM education" has become popular. Modern technology is used in STEM education to improve STEM abilities. Additionally, this promotes interest in STEM disciplines.

Keywords: Indian Education; STEM, NEP 2020

1. Introduction

Because of our growing reliance on technology, the world's workforce is now both smaller and more competitive. Likewise, nations must make sure that their future leaders are able to adapt to change, think critically, and work quickly. Science, Technology, Engineering, and Mathematics, or STEM, is a term that was first used in the US in the 1990s. It was formed in the early 2000s as a way to demonstrate how the four disciplines are interrelated. Simply said, STEM illustrates the needs of the future global workforce.

STEM-related job postings have grown by 44% in India between 2016 to 2019. The National Science Foundation estimates that 80 percent of the new occupations developed around the world in the upcoming ten years will involve some kind of math or science. A number of nations, such as the UK, Canada, and Australia, have national STEM strategies to close the skills gap in their workforces [1].

According to NEP, the child's report card must include both objective and skilled or vocational issues. A child's learning was formerly evaluated on the basis of rote memory of the subjects. Currently, it is competency-based, which encourages more analysis and conceptual clarity in the learning graphs of the children. This evaluation goal satisfies the need to enhance the educational system as a whole and brings about ongoing revisions to the teaching-learning process for the growth of a student. STEM fosters the highest performance for evaluation, aids in reviewing and analyzing prior learning, and aids in a child's overall growth [2]. It denotes

- Marks will be nothing more than a number.
- Your child's future is entirely dependent on the knowledge and abilities that he or she can keep. When we refer to someone's skills, we imply how well their theoretical knowledge translates into real-world application.
- STEM education can cover this type of instruction, particularly for areas like science and math. For nations like ours, which have a large youth population, the aforementioned, high-quality education will do best to enrich their talent and do the best resource utility over the next ten years.
- Only school-level instruction will now be provided in the high-quality, practical education that we previously received in colleges and other higher education institutions.

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings

**NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education**

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

M.P.Rakhunde: Recent trends in indian Economy System

Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

in Indian Economy System

Dr. M.P. Rakhunde

Dept. of Commerce

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

India has been increasingly looked at as an engine that will drive global growth in future. This is reason enough to look at the economics prospects of India over the current decade. Our forecasts indicate that the likelihood of India sustaining 9.0 % growth during the current decade is very high. According to D&B's estimate, in the journey during the current decade as India traverses a high growth path, it would eventually surpass Japan's GDP level (as in 2010 at current US) by FY20. The concomitant rise in income levels coupled with increasing young working – age population will work towards increasing the share of discretionary spending in private final consumption expenditure and raising the savings rate. Growth of urban population will be one of the most important demographic shifts that we will witness during the current decade.

Introduction:

The current decade will be rich with profound changes that will present us with both challenges and opportunities. Our forecasts for the current decade can help us to prepare for future challenges and seize opportunities. Economics growth during the current decade will bring with it challenges in terms of meeting rising energy needs in ways that are cost efficient, sustainable and environmentally compatible. Pressures on natural resources will exacerbate during the current decade. Increased demand and environmental concerns will make innovation imperative. The solution will need to lie in technology that meets rising energy demand that are cost efficient, sustainable and environmentally compatible and reduces reliance on natural resources.

India's growth to be driven by a rapidly expanding services sector

Despite reduction in net sown area due to growing urbanisation and industrialisation, the agriculture sector is expected to record an average growth of 4.3% (the growth forecast for agriculture sector is underscored by an assumption of normal monsoon) during FY11-FY20 owing to increase in investment in agricultural infrastructure such as irrigation facilities, warehousing and cold storage,

We expect the industrial component of GDP to growth an average 9.5% during FY11-FY20, backed by robust private consumption demand, increase in India's exports, growth in domestic investments and government's thrust on infrastructure development. Among industries, sector such as 'basic, metal & alloy industries'. 'metal products & parts' and during the current decade owing to strong investment demand and increased expenditure on infrastructure development. Moreover, rising income levels and increasing of the middle class working age population are expected the result higher demand for consumer durables. India's Real GDP is expected to register an average growth of around 9.2% during FY11-FY20, on the back of robust private consumption demand, increased infrastructure spending, substantial growth in investment activity and strong growth in services sector. Strong GDP growth is expected to result in considerable increase in real per capital income, which in turn would lead to significant reduction in the percentage of people living below the poverty line. With rising income levels, India is expected to move from a low income country to a middle income or upper middle income country by 2020

Performance during 2013-14 and 2014-15

Recent Trends of the Sustainable Development (ISBN 978-81-939083-4-1)

Dr. Ved Patki: Commerce Education: A study



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

COMMERCE EDUCATION: A STUDY

Dr. Ved Patki

Assistant Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

ABSTRACT

The higher education system in India has grown in a remarkable way, mainly in the past-independence period, to become one of the largest organisations of its kind in the world. As a result today India's 70 million student population is a force to reckon with. Among them are potential thought leaders-researches and academics-positioned at the helm of knowledge creation. Among them are entrepreneurs and executives of the future industry-ready and highly sought after. From among them emerges India's massive workforce, the engine of its US\$13trillion economy. Our universities today don't face a shortage of academics ready to be recruited a faculty, just as our industries find adequate talent that can be inducted with minimal on-boarding. These issues are significant for the country, as it is now engaged in the use of higher education as a power full tool to build knowledge based information society of the 21st century. The paper is an outcome of a review of a substantial number of secondary sources on the current issues and challenges of higher education in India. Following are the two major areas, for the higher education in India and commerce education opportunities for the society and challenges of commerce education present completion world.

Key words: Higher Education, Commerce Education, E-commerce, E-banking

INTRODUCTION:

The higher education system in India has grown in a remarkable way, mainly in the past-independence period, to become one of the largest organisations of its kind in the world. There has been considerable improvement in the higher education scenario of India in both quantitative and qualitative terms. Higher education in India is seen as one of the ways to upward social mobility. However, the system has many issues of concern at present, like financing and management including access, quality and relevance, re-orientation of programmers by laying importance on health consciousness, values and ethics and quality of higher education together with the assessment of institutions and their education. These issues are significant for the country, as it is now engaged in the use of higher education as a power full tool to build knowledge based information society of the 21st century. As a result today India's 70 million student population is a force to reckon with. Among them are potential thought leaders-researches and academics-positioned at the helm of knowledge creation. Among them are entrepreneurs and executives of the future industry-ready and highly sought after. From among them emerges India's massive workforce, the engine of its US\$13trillion economy. Our universities today don't face a shortage of academics ready to be recruited a faculty, just as our industries find adequate talent that can be inducted with minimal on-boarding. The first commerce school was established in Chennai in 1886 by trustees of pachiyapps charities. Commerce classes started in the presidency college, Kolkata in 1903. In post-independence period, commerce education has emerged as one of the techno managerial revolution. Commerce has grown from a subject to a fully-fledged faculty in most of the universities and had acquired a pride of place amongst different academic disciplines.

OBJECTIVES:

1. To study the status of higher education India
2. To analyse the commerce education in India

METHODOLOGY OF THE STUDY:

The study is mainly based on secondary data. The secondary data is taken from the books, annual reports of higher education, journal and newspapers.

Dr.Veera Mandavkar: Indian Economy: A challenge



**Recent Trends of the
Sustainable
Development**

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solon Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solon Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Indian Economy: A Challenge

Dr. Veera Mandavkar

Assistant Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

The global economic and financial crisis has sent Tsunami ripples and wave shocks across the different socio-economic and political institutions in the present global environment. Tension is mounting everywhere as job cuts are on the increase, while many global corporate organizations are shutting down their operations and a few are declaring bankruptcy. The down turn that appears to have begun in the USA in September, 2008 have some negative impact on Indian economy. The most immediate effect of this global financial crisis on India is an out flow of foreign institutional investment (FII) from the equity market. This withdrawal by the FIIs led to a steep depreciation of the rupee. The banking and non-banking financial institutions have been suffering losses. The recession generated the financial crisis in USA and other developed economies have adversely affected India's exports of software and IT services. For fighting this crisis, government of India responded through its monetary policy by pumping the liquidity into the system rather than using effective fiscal policy i.e. public expenditure and investment to face the recession. No doubt, government has introduced three fiscal stimulus packages for stimulating demand in the economy but it was not sufficient, the larger government expenditure should be oriented towards agriculture and infrastructure. Although India has revived to high growth, this new growth should have to come not from some new speculative bubble but from enlarged government expenditure that directly improves the livelihood of the people. The present paper is an attempt to analyze the impact of recent global financial & economic crisis on Indian economy.

Keywords: Economic Recession, Depreciation, foreign institutional investment (FII), global financial meltdown, India, recession, Unemployment.

Introduction:

Experts around the world believe that a true economic recession can only be confirmed if Gross Domestic Product (GDP) growth is negative for a period of two or more consecutive quarters. In other words, when the value of goods and services produced decreases for six months in a row. While the "two quarter" definition is accepted globally, many economists feel that definition does not factor in other important economic change variables. For instance, current national unemployment rates or consumer confidence and spending levels are all a part of the economic system and should be taken into account when defining a recession. The agency that is officially in charge of declaring a recession in the United States is known as the National Bureau of Economic Research, or NBER. According to the NBER, a recession is a "significant decline in economic activity lasting more than a few months. "The global financial crisis is unique in its kind. What started off as a sub-prime crisis in the US housing mortgage sector had turned subsequently into a global banking crisis and then into a global economic crisis. Housing is commonly cited as a fixed asset. It is ironic that this 'fixed asset' is the one that has triggered the greatest economic crisis since the 'Great Depression' of 1930s. The world economy went into a steep recession in the last three months of 2008 with global real GDP dropping at a 6 percent annual rate. This was clearly the worst decline in world output and also in world industrial production and world trade of the post-World War II era, with virtually all countries getting affected by the downturn and many registering record declines in GDP. Since the United States dominates the global economy, this had led to slowing down of economies of all major countries. Many economists and experts foresee a global recession lasting well into 2010. However almost all believe that whatever may be the duration of the recession, the recovery is going to be slow. The Indian

S.Y.Lakhdive: Indian Economy Growth Vs Slowdown

Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

N.V.Narule : Recent trends in india



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Dr. Suraj Deshmukh: Poultry Farms in India



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Poultry Farms in India

Dr. Suraj Deshmukh

Assistant Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

Indian poultry industry is one of the fastest growing segments of the agricultural sector today in India. As the production of agricultural crops has been rising at a rate of 1.5 to 2% per annual while the production of eggs and broilers has been rising at a rate of to 10% per annual. Today India is world's fifth largest egg producer and the eighteenth largest producer of broilers.

The Indian poultry industry has undergone a paradigm shift in structure and operation a very significant feature of Indian's poultry industry is its transformation from a mere backyard activity into a major commercial activity in just about four decades which seems to be really fast. The kind of transformation has involved sizeable investment in breeding, hatching, rearing and processing. Indian farmers have moved from rearing non-descript birds to today's rearing hybrids such as Hyaline, Shaver and Babcock which ensure faster growth, good liveability, excellent feed conversion and high profits to the rearers. The Indian poultry industry has grown largely due to the initiative of private, enterprises minimal government intervention, and very considerable indigenous poultry genetics capabilities and supports from the complementary veterinary health, poultry feed, poultry equipment and poultry processing sectors. India is one of the few countries in the world that has put into place a sustained specific pathogen free (SPF) egg production projects.

Keywords: *Indian poultry industries, Types of birds, production, growth rate, size of industry and demand and supply.*

Introduction:

India today is the one of the world's largest produce of eggs and broilers meat. The poultry industry in India has undergone a major shift in structure and operation during the last two decades transforming from a mere backyard activity into a major industry with the presence of a large number of integrated players. This transformation has involved a sizeable investment in breeding, hatching, rearing and processing activities.

India with a population of 1.25 billion people is highly focussing on 'development' i.e. good food, better health and living condition for everyone, with the increase in the income, people can now afford better nutrition and hence, since last two decades the demand for eggs and chicken is growing. The recent data of the years 2017 state that the egg production in India is 75 billion and the broiler production is 4.2 million tonnes per annum. The growth rate of layer market is 6.7 percent per annum and broiler market is 8.10 percent per annum. 75 percent of egg production is contributed by commercial poultry farms, remaining comes from household / backyard poultry. Total poultry feed production of the country stands at 22 million tonnes. The Indian poultry sector is valued at INR 1 Lakh crore USD 15.38 billions in coming years. Poultry production and consumption in India is predicated to grow due to various factors such as a shift in food habit, urbanization, increasing awareness of balanced nutrition etc. The Broiler meat consumption pattern shows that around 62 percent of meat is consumed in major 10 cities and rest of the consumption comes from other cities with a smaller percentage from villages.

Objectives:

- 1) To study the concept of poultry industry.
- 2) To study the poultry production.
- 3) To study the growth rate of eggs and broilers.
- 4) To study the recent trends and growth in Indian Poultry Industries.



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING

Prof. Sakharam Sangle

Assistant Proffessor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

ABSTRACT

In the last two decades since Sheth's (1974) pioneering work on family purchasing decisions, the family's impact on consumer behaviour has often been overlooked. However, family decision-making is gaining in attention as it increasingly recognizes the extent to which each individual in the family influences the consumer activities of this primary social group.

This article examines the impact children have on the decision-making process of family consumers. The unique approach is to examine the buying influence both from the perspective of the child and the parent. High and low participation products were considered as well as children's age and gender, family structure, family decision-making and a variety of demographic factors.

The paper concludes with a brief examination of the social and ethical implications of this work given the conflicting evidence from other studies conducted to assess the economic benefits associated with advertising. Finally, some suggestions for future research will be made.

INTRODUCTION

Parents and children were asked to rate the influence of children and children to assess their own impact on the buying process. Responses to these questions The foundations for studying how families buy products and services were set out in 1974 by Sheth in the essay "A Family Purchasing Theory." It took some time for consumer decision making research to recognize the family as a key consumer group. A major obstacle to this metamorphosis was the recognition that family decision types, processes and determinants are not just an aggregation of individual buying behaviour. In the past, the focus of consumer research in the family has been on the dyadic relationship between husband and wife, and the impact that children have on family purchasing decisions has been largely ignored. Earlier Family Purchase Surveys have also measured largely abstract concepts such as power and influence rather than focusing on the tangible consumer behaviour of family members in purchasing decision-making processes.

More recently, a transition can be seen away from the dyadic definition of the family, towards consideration of multiple participant decision making. Whereas earlier studies on family decision making only really examined spousal interaction (Davis 1976, Burns 1977, McDonald 1980), greater importance is now being placed on the role and impact of children in decisions (Belch, Belch and Sciglimpaglia 1980, Moschis and Mitchell 1986, Foxman and Tansuhaj 1988). However, the triadic (multi-adic) interaction of mother, father and children in family decision making is still a relatively unexplored area, and the research that has been carried out has developed adhoc with limited attempts made to integrate concepts.

Decision-making activity involving the purchase of goods and services within a family appears to be more of an outcome of group decision making than ever before (Burns, 1992). Such decision-making activity typically involves several family members who play a variety of roles in the process. Furthermore, evidence is building that children play a much greater role in the family decision-making process than has been predicted by previous studies.

S.S. Bonde- Recent Trends in Sustainable Development



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT

Dr. Sharayu Bonde

Asst. Professor, Dept. of Commerce
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract

Modern Business commerce Education covers diversified fields of education and research in different aspects of business environment. It includes Finance, Marketing, Accounting, Human Resource Management, Entrepreneurship Development, Commercial and Business Law etc. In order to attain Economic Growth of a region or a country, one needs professional Economists and Accountants either advanced practical knowledge to enable to evaluate and analyze the complexities of the large scale business and other financial institutions in one side and to face the stiff competition from the MNCs from the other side. Here the commercial experts who have trained in different aspects of business environment have to play a very important role. Keeping in view the above facts and demands of the time, prospect of Commerce Education seems very bright. To avail the advantage of Commerce, a lot of educational institutions have been opened to educate students in the field of Commerce with more knowledge on practical.

Keywords: Higher Education, Commerce, Students, Business, E-commerce, Finance.

INTRODUCTION

Commerce is one of the three fundamental academic streams, the other two being humanities and science. Commerce is a division of trade or production which deals with the exchange of goods and services from producer to final consumer. It comprises the trading of something of economic value such as goods, services, information or money between two or more entities. While pursuing a course in the field of commerce, one acquires the knowledge of business or trade, nature and fluctuations in market, basic of economics, fiscal policies, industrial policies etc. The concept of commerce consists of a wide range of interdisciplinary branches including Accountancy, Business Administration, E-Commerce, Finance, Economics and Marketing. Since the Indian economy is one of the fastest growing economies among the third world countries, the need for talented professionals, who can contribute towards the growth of the economy, is increasing. To serve the purpose, many commerce colleges in India are imparting quality education. A commerce aspirant can pursue course related to the field at any of the colleges and work on organizations that deal with finance and commerce. Several commerce colleges and institutes in India are imparting courses in the field of commerce at the undergraduate and postgraduate levels.

1. Meaning of Commerce

Commerce is the strongest and the most influential social institution in all societies these days. It is a social institution which provides goods and services. Commerce is operated for a profit-that is, individuals using the system find it advantageous to pay a money price¹ to have other individuals make goods and render services for them. Commerce is owned privately by individuals or group of individuals or by Government or partly by Government and partly by individuals; it competes with other commercial units to make goods and render services of the highest quality, at the lowest prices and in the shortest possible time; and it is regulated by the Government.

2. Challenges before commerce education

Presently, the business world feels that the commerce graduates and postgraduates degree holders lack in right kind of skills, practical knowledge and exposure to outside

Dr.Pavan Mandavkar: Recent Education: Opportunities and Challenges



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

RECENT EDUCATION:- OPPORTUNITIES AND CHALLENGES

Dr. Pavan Mandavkar

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract

The developing marvel of globalization, progression and privatization has been monstrosly impacting the Commerce Education. Alvin Toffler in his celebrated book "Future Shock" says that, "To help turn away future stun, we should make a super modern instructive framework and to do this, we should look for our goals, strategies later on as opposed to past. Training must move into future tense." The Higher Education division in India is extremely tremendous. The part of Higher Education in national improvement is settled. The targets of Higher Education can be accomplished just through subjective change in the framework. The yield of Commerce Education ought to be multidimensional and with full worldwide aggressiveness. However, we need to understand that the Commerce graduate have absence of viable information. Business instruction is adopting gradually an expert strategy. Strategy producers and also clients are embracing a more positive approach while taking a gander at business instruction. New specializations educational programs and methodologies are being acquired the trade training. The purpose behind this change can be properly comprehended in the event that one takes a gander at changing business and monetary condition in the nation. The ventures are never again needing mono talented or single gifted individual, they expect a prepared, qualified and multi gifted authority who can meet the business necessity appropriately.

Keywords: commerce education, online education, e-marketing, e-commerce

Introduction

Education ought to be a three-crease procedure of conferring learning, creating aptitudes instilling appropriate demeanors and qualities towards life and society by and large. It must empower the person to build up the movement ability. To gain and carry on sensible way of life, it should likewise empower him to build up his innovative resources to the most extreme with the goal that mentally, ethically, physically and profoundly he is in a position to advance his identity. Despite the fact that trade training began in India very nearly a century back, it has seen numerous progressions because of progress in mechanical and financial circumstance. Ordinarily instruction has gone on rushes of changes of economy and modern progression. A settled type of business and administration instruction came into late forties. This paper plans to toss light on the new patterns of business training.

The principal Commerce school was built up in Chennai in 1886 by Trustees of Pachiyappa's Charities. Trade classes began in the Presidency College, Kolkata in 1903. The Sydenham College of Commerce and Economics was set up in 1913 as the main organization for advanced education in Commerce. In post-Independence period, Commerce instruction has risen as a standout amongst the most potential interests in the wake of industrialization, financial improvement and techno-administrative transformation. Trade has developed from a subject to an undeniable personnel in the greater part of the colleges and had procured a pride of place among various scholastic orders.

The developing wonder of globalization, advancement and privatization has been affecting the Commerce training. The innovative upset has additionally given new measurements' E-keeping money, E-promoting, E-business, E-fund, E-venture paper less exchanging and administration has been picking up significance of everywhere throughout the world. In the meantime, the outsourcing business, call Center, private company activity, IT based administrations and so on are extending quick.

Dr.K.R.Nemade: Role of E-Commerce



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Role of E-Commerce

Dr. K.R. Nemade

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

In this paper its clear that how e-commerce is important in Indian economy. We all know India is among the fastest growing economy of the world, thus it is very much important to have government intervention and huge investment inflow in form of foreign direct investment in large economy like India to stabilise and increase the growth of ecommerce industry in the economy. In India with the digital penetration has increased significantly, according to statistical data internet use has increased to 429.23 million user in India and is expected to reach around 830m by year 2021 .E-commerce has immensely increased economic growth in domestic welfare and changes have arisen in the market scenario too. Internet represents a new environment for extensive growth of e-commerce, providing exchange of goods and services and also directing access of customer's own personal accounts online. The trade negotiations on the fundamental key domestic policies, particularly in telecommunications, financial services, and distribution and delivery have significant important in economic growth. The varying characteristics of local environments, both infrastructural and socio-economic also play a significant role in the variation of the acceptance and growth of e-commerce in different regions of the world. The e-commerce technology and the usage of online shopping have increased domestic economics tremendously in India. This paper is an attempt to study and identify the factors influencing the growth of e-commerce and report the various issues faced in the e-commerce growth.

Keywords: E-Commerce, Growth- Indian Economy, Evolution

1. Introduction:

Now a days, The E-commerce has been used for describing a variety of market transactions, enabled by information technology and conducted over the electronic Network. In the past, a dominant firm in the value chain typically put out a Network that deployed proprietary applications over this private Network .For example, Chrysler, Ford and General Motors. In 21st century internet has become most important and frequently and most necessity device, it will surely race to achieve more growth and sales via internet. "According to eMarketer, worldwide retail Ecommerce sales will reach \$1.915 trillion by the end of 2017. with increase in digital penetration all across the globe and cheap and frequent easy accessibly of internet , it is prone to increase the growth of ecommerce all across the world , meanwhile lot of traditional people are quite worried and tensed with change in pattern of sale via internet" , with the availability of cheap and high speed internet with variety and security options , lot of individual and firms have connected their business with e-commerce.(As in recent world it is highly impossible to grow without being available online . Thus to grow more and earn higher profit it is highly recommended to have proper structure availability and easy accessibility of online sites , because it not only determines profit and no. of users but also determines the ranking and position of enterprise of the firm in overall business world. Also in this research paper I will focused about the growth and pattern of e-commerce in India and its sales and impact in Indian economy, of all different types of e-commerce, my research paper restricts its study to mainly b2c types of business, though it did cover other types of e-commerce and its social impact also in India via sales of e-commerce in India. India's E-commerce revenue is expected to jump from US\$ 39 billion in 2017 to US\$ 120 billion in 2020, growing at an annual rate of 51 percent, the highest in the world. India has got its own version of Cyber Monday known as Great Online Shopping Festival which started in December 2012, when Google India partnered with e-commerce companies including Flipkart, HomeShop18, Snapdeal, Indiatimes shopping and Makemytrip. "Cyber Monday" is a term coined in the US for the Monday coming after Black Friday, which is the

Rahul Sinha: Recent trends in Indian Economy: Industrial Sector



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Recent trend in Indian Economy: Industrial Sector

Prof. Rahul Sinha

Assistant Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

The growth potential of the economy can be judged to some extent by the performance of the economy in the past, and especially the performance in recent years. The Indian economy has emerged with remarkable rapidity from the slowdown caused by the worldwide financial crisis.

Industrial performance in the tenth plan period improved to a respectable 9.2 percent from the very low growth rate of 4.3% in the Ninth plan. This reveal of Industrial growth is a major achievement of the policy in recent years. However, industrial performance needs to be improved further if high quality employment in the nonagricultural sector is to be generated within industry, the manufacturing sector, accounting for 77 of industrial output has shown significant growth acceleration within the last two years. The Eleventh plan aims at integer growth both in manufacturing and in industry. Accelerated growth in industry will help to provide faster will help to provide faster growth in organized sector employment. India achieved a remarkable industrial recovery since June 2009.

Table No 1

Share of Industrial Sector in G. D. P. at constant prices (at 2004-05 Prices)

Year	GDP	Industrial Sector	Share in real GDP %
2007-08	3893457	805423	20.69
2008-09	4154973	830246	19.98
2009-10	464081	916356	20.53

Source- Central Statistical Organization

Table No1 Shows the contribution industrial sector to GDP and its real contribution to GDP at constant prices. The contribution of industrial sector increased from Rs 805423 crores during 2007-08 to Rs 916356 crores in 2009-10. There is no much variation in the percentage contribution by the industrial sector. It remains 20 percent recently.

Table No 2

Share of Industrial Sector in GDP at current prices (at 2004-05 prices)

Year	GDP	Industrial Sector	Share in real GDP %
2007-08	45440987	939868	20.98
2008-09	5228650	1034935	19.79
2009-10	5868332	1169376	19.93

Source- Central Statistical Organization

Table 2 Highlights the share of industrial sector to GDP is Rs 939868 crores in 2007-08 and it increased to Rs 1169376 crores in 2009-10. The percentage share to real GDP is 20 percent in 2007-08 and it declined to 19 percent during 2009-10.

Table No 3

Share of Sub Sectors Contribution to industrial Sector at Constant Prices (at 2004-05 prices)

Year	Industry	Mining & Quarrying	%	Manufacturing	%	Electricity, Gas & Water Supply	%
2007-08	805423	97201	12.1	629446	78.16	78776	9.78
2008-09	830246	98745	11.89	6496325	78.25	81866	9.86
2009-10	916356	109182	11.91	719975	78.57	87199	9.52

Source- Central Statistical Organization

The table illustrates sub sectors contribution to industrial sector at constant prices and its percentage. The contribution mining and quarrying increased from Rs 97201 crores in

Dr. Pandurang Ingale: Impact of cashless Economy



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

IMPACT OF CASHLESS ECONOMY

Dr. Pandurang Ingle

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

ABSTRACT

The Research paper focuses on impact and importance of cashless policy in India. According to Government of India the cashless policy will increase employment, reduce cash related robbery thereby reducing risk of carrying cash. Cashless policy will also reduce cash related corruption and attract more foreign investors to the country. In many countries introduction of cashless economy can be seen as steps in the right direction. It is expected that its impact will be felt in modernization of payment system, Reduction in the cost of banking service, Reduction in high security and safety risk and also curb banking related corruption. Electronic banking will be made banking transaction to be easier by bringing services closer to its customers hence improving banking industry performance. The financial safety over the digital payment channel is important for pushing the cashless economy idea. A major obstacle for the quick adoption of alternate mode of payment is mobile internet penetration, which is crucial because point of sale terminal works over mobile internet connection, while banks have been charging money on card-based transaction which is seen in hurdle. India has been using electronic payment system for many year now, However, the retail sector still has predominance of cash transaction and payment through cash is yet to pick up card is the one of the most secure, convenient mode of cashless payment in retail market.

INTRODUCTION

The Indian payment system is rapidly transiting to more and more IT based systems. In the retail sector we have very high volumes of money transactions. Other than cash, one of the growing payment methods adopted by merchants in the sector is payment cards. However, the whole isometrics of moving from cash-driven economy to cashless economy has somehow been assorted with demonetization that was aimed to extract liquidity from the system to unearth black money. With increasing adoption of electronic payments, particularly those driving e-commerce and m-commerce, there is a growing demand for faster payment services which, in turn, facilitate ease in doing financial transactions. Reducing Indian economy's dependence on cash is desirable for a variety of reasons. India has one of the highest cash to grossdomestic product ratios in the world, and lubricating economic activity with paper has costs. According to a 2014 study by Tufts University, The Cost Of Cash In India, cash operations cost the Reserve Bank of India (RBI) and commercial banks about Rs21,000 crore annually. Also, a shift away from cash will make it more difficult for tax evaders to hide their income, a substantial benefit in a country that is fiscally constrained.

OBJECTIVE OF THE STUDY

The aim behind this Research is:

- To know what a Cashless Transaction means.
- Impact and importance of Cashless Transaction System.
- Requirement of cashless transaction in future.

RESEARCH METHODOLOGY

The study is based on secondary sources of data/ information. Different books, journals, newspapers and relevant websites have been consulted in order to make the study an effective one. The study attempts to examine the Impact and Importance of Cashless Transaction in India.

Jawahar Bodulawar: Analysis of Goods Credit-Debit And Balance



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE

Prof. Jawahar Bodulwar

Asst. Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

International monetary transactions of a country with rest of the world which are carried out in one year are recorded systematically in the accounting document called Balance of Payment (BOP). The present paper tried to focus the international goods exports and imports transactions which have been recorded as Goods or Trading Account in the current account of the respective countries.

There is a stiff competition on international level in today dynamic world. Emerging countries like China, India etc. have been trying to prove they Trade predominance on international stage. They have been trying to increase the international trade position. Especially Indian international trading has to fight with China, United States and other emerging and developed countries. Since the independence of India, the current account has been in deficit due to deficit on goods. International transactions of India have been facing a number of problems and difficulties relating to monetary, legally, politically, socially and internationally. The major focus of the paper is on comparing the international transactions relating to the Goods elements of current account and to know the position of India on the international stage as compare to China. In view of this, the study has attempted to benchmark the questions such as, what is the growth of goods of the India and China. How is the overall performance of China and India in the goods element of current account?

Key Words: Balance of Payment / Trade (BOP / BOT), Current Account, Goods, BPM6.

Introduction:

International monetary transactions of a country with rest of the world which are carried out in one year are recorded systematically in the accounting document called Balance of Payment (BOP). The Balance of payment is an accounting record document of all monetary transactions between the residents a country and rest of the world. It has standard format structured on the basis of BPM6 by International Monetary Fund (IMF). The Balance of Payment includes current account, Capital account, financial account and errors and omission. The main aim of the BOP statement is to provide information and understand the financial aspects of the country. The current account shows flows of goods, services, primary income, and secondary income between residents and nonresidents. The current account is an important grouping of accounts within the balance of payments.

Goods: As per the IMF's latest BOP manual sixth edition, the goods account comprises (a) general merchandise, (b) goods under merchanting and (c) non-monetary gold.

General merchandise: General merchandise on a balance of payments basis covers goods whose economic ownership is changed between a resident and a nonresident and that are not included in the following specific categories: goods under merchanting, nonmonetary gold, and parts of travel, construction, and government goods and services.

Re-exports: Re-exports are foreign goods (goods produced in other economies and previously imported) that are exported with no substantial transformation from the state in which they were previously imported. Goods that are bought and resold but do not pass through the territory of the owner are included in goods under merchanting

Goods under merchanting: Merchanting is defined as the purchase of goods by a resident (of the compiling economy) from a nonresident combined with the subsequent resale of the same goods to another nonresident without the goods being present in the compiling economy. Merchanting occurs for transactions involving goods where physical possession of the goods by the owner is unnecessary for the process to occur. Merchanting arrangements are

Dr. Dashrath Chavan: Very recent trends In Indian Economy



**Recent Trends of the
Sustainable
Development**

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solon Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solon Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Very Recent Trends In Indian Economy

Dr. Dasharath Chavhan

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

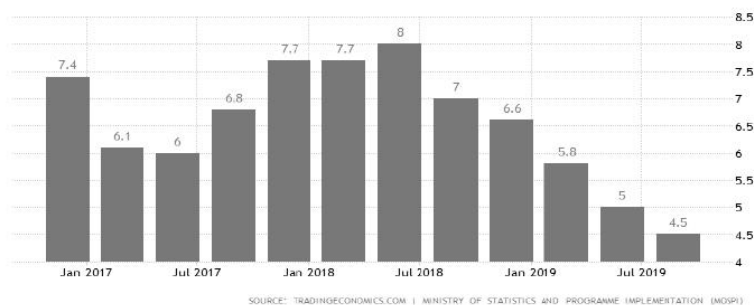
India is a developing country with the fastest growing economy in the world. In the last two quarters it has come down to 2nd position as the result of many big changes by the current government in the economic sector which are GST, Demonetization, many new plans for small scale as well as large scale industry.

India's growth rate for the current year has slowed down to 6 per cent from last year's 7.4 per cent, but the country will be the world's second fastest growing economy, lagging by just a tiny fraction behind China.

The Trade and Development Report 2019 released by the UN Conference on Trade and Development (UNCTAD) in Geneva on Wednesday, maps a global slowdown with the world growth rate dropping from 3 per cent in 2018 to a projected 2.3 for this year. To tackle these global slowdown & invite investment and boost the economy India has come up with....

1. Make in India
2. Startup India
3. Mudra Loan

India's GDP in Figures:



Top 5 Economic Indicators for Global Investors

- Gross Domestic Product. GDP represents the market value of all final goods and services produced within a country during a given period. ...
- Employment Indicators. ...
- Consumer Price Index. ...
- Central Bank Minutes. ...

After so many efforts still the Indian economy has expanded 4.5 percent year-on-year in the third quarter of 2019, below 5 percent in the previous period and market expectations of 4.7 percent. Figures showed the economy eased for the fifth consecutive quarter, and grew at the weakest pace since the first three months of 2013, mainly due to a fall in factory output and exports and slowing investment.

The government already announced several measures to boost growth including a reduction in corporate taxes, concessions on vehicle purchases, bank recapitalisation. Meanwhile, the central bank already cut borrowing cost 5 times this year and is seen lowering rates again in the next meeting.

India is a developing country with the large number of people in primary sector hence it is economy has great impact of inflation on it in comparison to other things. Some of the figures are as follows

P.R.Bonde: Indias Recent agricultural development



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solán Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solán Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Rupesh Atram: Role of Agriculture in National Economy

Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

Role of Agriculture in National Economy

Prof. Rupesh Atram

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Conclusion:-

Thus agriculture occupies a position of outstanding importance in the Indian economy having a high employment potential ; it is important in its contribution to national income as a source of food and raw materials, as being vital to international trade, as a yielder of state revenue and as contributing to social and political stability. But too much dependence on agriculture makes the Indian economic unstable and unbalanced and is a major cause of India's appalling poverty.

The importance of Agriculture to India can hardly be exaggerated. It is the very backbone of her economic system and is her premier, national, key industry. In fact, the prosperity of agriculture is synonymous with the prosperity of India. Also, agriculture is assuming even greater importance with the passage of time. Internal demand for food is on the increase as a result of growing population and rising standard of living. Indian agriculture will have to meet the need of more raw materials of a better quality as the economy grows under the Five-Year Plans. Agriculture is important from several points of view.

As a Source of Livelihood :-

Millions of people in India draw their livelihood from agriculture. Some draw their sustenance from direct cultivation, others from the movement of crops and still others from trade in the agriculture products. About 75% of the people depend for living on agriculture, directly and indirectly. Whereas in the West and other developed countries, the percentage of the people dependent on agriculture has been going down and is 10 to 20 %, in India it has remained remarkably stable.

As a Contributor to National Income :-

Out of a total national income the share of agriculture in the national income is bound to go down as the Indian economy grows, as it has happened in the developed countries of the west, yet for a long time to come, it seems the pre-dominance of agriculture is likely to continue.

As a Supplier of Food: -

The inhabitants of the country obtain their food from agriculture in various forms, e.g., cereals, fruit, vegetables, etc. What would have happened to the teeming millions without this source of food can be easily imagined. But we cannot help adding that it is a sorry state of affairs when India has to depend on foreign food in spite of three-fourths of its people engaged in agriculture.

As a support for Industrial Development :-

It goes without saying that industrialisation of India draws its supports and sustenance from Indian agriculture. It supplies the industrial raw materials like cotton, jute, and sugar cane. Prosperous agriculture will provide the necessary purchasing power to the rural masses for the absorption of manufactured goods. It will lay the foundation of many agro-industries, e.g., food processing industries.

Importance in Trade :-

Agriculture products constitute the mainstaples of our internal external trade. Indian agriculture thus determines the volume and composition of trade.

As a Foreign Exchange Earning :-

S.Khandekar: E-Commerce And Bussiness



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

E-COMMERCE AND BUSINESS

Prof. Snehal Khandekar

Asst. Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Introduction

E-commerce has a significant impact on business costs and productivity. E-Commerce has a chance to be widely adopted due to its simple applications. Thus it has a large economic impact. Electronic Commerce provides the capability of buying and selling products and information on the internet and other on-line service. Electronic commerce or e-commerce refers to a wide range of online business activities for products and services. Electronic commerce is transforming the marketplace by changing firms' business models, by shaping relations among market actors, and by contributing to changes in market structure. It's difficult to single out the impact of electronic commerce. Some businesses address three themes associated with electronic commerce and the organizational changes it entails: changes in business models, changes in market structure and opportunities for economic growth created by organizational change. Electronic commerce creates the possibility of new models for organizing production and transacting business, by offering inters modality and complementarily – not only substitution – in business models.

E-Commerce plays an important role in the economic growth and development of nation. It is a purposeful activity includes in planning, controlling, promotion and also distribution of various goods and services. In this research paper will describe how the Business spirit plays an important role in nation's growth. It also pertains to any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact. E-commerce is usually associated with buying and selling over the Internet or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network. Though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals. While some use e-commerce and e-business interchangeably, they are distinct concepts. Inez-commerce, information and communications technology (ICT) is used in inter-business or inter-organizational transactions (transactions between among business organizations) and in business-to-consumer transactions (transactions between business organizations and also individuals).

E-commerce is a way of conducting business over the Internet. Though it is a relatively new concept, it has the potential to alter the traditional form of economic activities. Already it affects such large sectors as communications, service, finance, retail trade and holds promises in areas such as education, health, transport and government. The largest effects may be associated not with many of the impacts that command the most attention but with less visible, but potentially more effects on routine business activities'-commerce presents opportunities to accelerate business processes, reduce costs, reach new customers and develop new business models and markets in the business organization. The general agreement is that electronic markets and digitalization of products will impact material flows. A clear identification of the extent and direction of effects, however, has not yet been achieved, and the issue remains controversial. Increased resource productivity is discussed alone of the major potential ecological advantages of e-commerce. Potential exists, above all, in the fields of demand and supply chain management and mass customization. Potentials to increase resource productivity appear in outline particularly in the business-to-business(B2B)field, where there may be, for instance, reduction in quantities procured or stored, surplus production, and error rates between supplier and manufacturer.

Prof. Prashant Jawade: New Technologies: A Review



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

New Technologies: A Review

Prof. Prashant Jawade

Asso. Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Abstract:

This research deals with the impacts of misusing modern technologies on members of the society and their negative influences on economic, religious and social aspect, as well as their impact on people's behavior and the responsibility of the society in monitoring the children who are in need of attention by everyone through the guidance of appropriate educational ways. Moreover, this research shows the need of joining all efforts collectively in order to protect the entire society from the dangers of modern technologies and work together to take advantage of its resources properly. This usually starts from the family and schools and ends with the universities, mass media and the various institutions that guarantee the rights of children from all different areas. However, this research emphasizes the fact that everyone should take his/her responsibilities towards using these methods properly whether at home or outside.

Key words: modern technologies, negative effects, impact of technology.

I. Introduction

The more advanced technology becomes, the more it seems to have control over our lives. Today, the use of technology is widely available and insistently promoted throughout our society. While technology makes life easier for people, it also creates some problems for our society such as the decline in ordinary social behaviors. Yet, modern societies realized the significance of intellectual technology which is a form of new knowledge that achieves goals or solves many problems.

The word technology consists of two parts (Techno) means application, art or skill, and (Logy) means science and learning. Thus, the linguistic meaning of the word technology is: the methods and tools that a society has developed in order to facilitate the solution of its practical problems and to provide the necessary needs for the community. Consequently, the use of technology in all areas of life increases risks, threats and crimes associated with the use of this technique, which reflects negatively on the possibility of its use in absolute terms in all walks of life.

Since human beings are social by nature, relationships nowadays become more dominated by the use of modern technologies such as social media, which reduces the distances, despite of having negative effects on human relations in society and family. Currently, people recognize that the use of modern technologies is a requirement for life and an indication of the cultural awareness of the community. They have positive prominent roles as one of the requirements of this era where they enter in all walks of life to provide services, improve the quality of life and increase communication and relationships since it is a developed culture reflects the culture of the community.

Thus, there are increased concerns in the speed at which modern technology spreads as well as its uses and their false and negative impacts. This was due to the absence of effective guidance where some groups have become vulnerable to the negative effects of life-threatening. Since education is an important area of life, the use of modern technologies makes it an essential part in education, not just a simple addition.

This research shows the negative impacts of modern technologies on society and will contribute to raise people's awareness towards the appropriate ways of using modern technologies. The authors hope that by presenting the negative effects of modern technologies on society, it will have positive influences on individuals and society in general since modern technologies play a major role in people's lives and future possibilities.

II. Statement of the Problem

Recent Trends of the Sustainable Development (ISBN 978-81-939083-4-1)

Prof Sheetal Raut: GST And Its Impact



Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

GST AND ITS IMPACT

Prof. Sheetal Raut

Asst. Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

ABSTRACT

GST or Goods and Services Tax is considered to be a game changer in Indian Economy. India has posed a beacon of hope with ambitious growth targets, supported by a bunch of strategic undertakings such as the Make in India and Digital India campaigns. The Goods and Services Tax (GST) is another such undertaking that is expected to provide the much needed stimulant for economic growth in India by transforming the existing base of indirect taxation towards the free flow of goods and services. This research paper uses primary sources of data such as survey and analysis of the data collected. The secondary sources such as books, journals and articles are also referred for this research. A total of 305 responses were collected in the survey. The responses were analysed. The survey had found that raising petroleum prices is a barrier to middle class people, government could likely provide relief considering the raising prices. GST especially in automobile industry had proven to be very profitable to both consumers and the profitability of companies. Many changes have been constantly made ensuring simplicity in the GST tax system. Raising petroleum prices is a barrier to middle class people, government could likely provide relief considering the raising prices.

KEY WORDS: GST, Taxation, Automobile, Industry and Petroleum.

INTRODUCTION

GST also known as Goods and Services Tax. More than 150 nations have implemented GST so far. Goods and Service Tax or GST as it is known is a game changer in Indian Economy.(Narayanan G. and Vashisht) Amidst economic crisis across the globe, India has posed a beacon of hope with ambitious growth targets, supported by a bunch of strategic undertakings such as the Make in India and Digital India campaigns(Raj). The Goods and Services Tax (GST) is another such undertaking that is expected to provide the much needed stimulant for economic growth in India by transforming the existing base of indirect taxation towards the free flow of goods and services. GST is also expected to eliminate the cascading effect of taxes. India is projected to play an important role in the world economy in the years to come. The expectation of GST being introduced is high not only within the country, but also within neighboring countries and developed economies of the world.

Despite these and other implementation challenges, the GST is expected by many to deliver substantial benefits over time. Most notably, Finance Minister Jaitley has estimated that GST will increase the country's economic growth by two percent; external economists and investment professionals place the growth impact in a wider range of .5 percent to more than two percent. Additionally, the GST should increase the ease of conducting business within India (especially across state borders) and between India-based companies and companies based in other countries. From a government perspective, "the GST is expected to improve tax compliance and draw more people into the tax net in a country where tax evasion is common. It will also make India more attractive for foreign investors by simplifying rules for a huge and increasingly attractive market."(Pasricha)

The Indian Automobile Industry had been paying a tax range between 30- 45%. (GST: IMPACT AND IMPLICATIONS ON VARIOUS INDUSTRIES IN INDIAN ECONOMY - ProQuest) The introduction of the Goods and Services Tax will be a very noteworthy step in the field of indirect tax reforms in India. By merging a large number of Central and State taxes into a single tax, GST is expected to significantly ease double taxation and make taxation overall easy for the industries. For the end customer, the most

R.M. Wath: Growth rate and Statistics of Indian Economy

Recent Trends of the Sustainable Development

ISBN 978-81-950837-2-6

Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edited Reference Book

ISBN 978-81-939083-4-1

RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT

|| Dr. Danish Raka
Chief Editor

Mrs. Meenakshi Shekhawat
Co-Editor

Dr. Diga J. Mara
Co-Editor

Edition I
May 17, 2023

Publisher
Solani Publications
D 32, O.I.D.C, Ringwada, Daman 396210
E mail – solanpublications@gmail.com

Print
Solani Printing Press
D 32, O.I.D.C, Ringwada, Daman 396210

Rs. 378/-

Contents

1	Role of IT in Indian Economy	Prof. Sumitra Sen	4
2	Recent Trends in Indian Economy System	Dr. M.P. Rakhunde	8
3	EDUCATION A STUDY	Dr. Ved Patki	11
4	DEVELOPMENTS AND TRENDS IN INDIAN ECONOMY	Dr. Danish Raka	17
5	Indian Economy: A Challenge	Dr. Veera Mandavkar	20
6	RECENT TRENDS OF THE SUSTAINABLE DEVELOPMENT	Dr. Meenakshi Shekhawat	25
7	Indian Economy Growth Vs Slowdown	Prf. S.Y. Lakhadiwe	31
8	Recent Trends in India	Prof. N.V. Narule	34
9	Poultry Farms in India	Dr. Suraj Deshmukh	38
10	INFLUENCE OF CHILDREN ON FAMILY PURCHASE DECISION MAKING	Prof. Sakharam Sangle	42
11	CHALLENGES IN COMMERCE, ECONOMICS AND MANAGEMENT	Dr. Sharayu Bonde	48
12	RECENT EDUCATION: OPPORTUNITIES AND CHALLENGES	Dr. Pavan Mandavkar	52
13	Role of E-Commerce	Dr. K.R. Nemade	56
14	Recent trend in Indian Economy: Industrial Sector	Prof. Rahul Sinha	60
15	IMPACT OF CASHLESS ECONOMY	Dr. Pandurang Ingle	62
16	ANALYSIS OF GOODS CREDIT-DEBIT AND BALANCE	Prof. Jawahar Bodulwar	66
17	Very Recent Trends In Indian Economy	Dr. Dasharath Chavhan	71
18	Indian's Recent Agricultural Development	Prof. Dr .Prachi Bonde	74
19	Role of Agriculture in National Economy	Prof. Rupesh Atram	77
20	E-COMMERCE AND BUSINESS	Prof. Snehal Khandekar	79
21	New Technologies: A Review	Prof. Prashant Jawade	85
22	GST AND ITS IMPACT	Prof. Sheetal Raut	91
23	Public Service Sector in India	Dr. Ganesh Laybar	94
24	GROWTH RATE & STATISTICS OF INDIAN ECONOMY	Prof. R.M. Wath	98

GROWTH RATE & STATISTICS OF INDIAN ECONOMY

Prof. R.M. Wath

Asso. Professor

Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Introduction

India has emerged as the fastest growing major economy in the world and is expected to be one of the top three economic powers of the world over the next 10-15 years, backed by its strong democracy and partnerships.

Market size

India's nominal GDP growth rate is estimated at 12 per cent in 2019-20. The estimate for 2018-19 was 11.5 per cent. During Q1 of 2019-20, GDP (at constant 2011-12 prices) grew by 5 per cent.

India has retained its position as the third largest startup base in the world with over 4,750 technology startups, with about 1,400 new start-ups being founded in 2016, according to a report by NASSCOM.

India's labour force is expected to touch 160-170 million by 2020, based on rate of population growth, increased labour force participation, and higher education enrolment, among other factors, according to a study by ASSOCHAM and Thought Arbitrage Research Institute.

India's foreign exchange reserves were US\$ 393.29 billion in the week up to December 21, 2018, according to data from the RBI.

Recent Developments

With the improvement in the economic scenario, there have been various investments in various sectors of the economy. The M&A activity in India increased 53.3 per cent to US\$ 77.6 billion in 2017 while private equity (PE) deals reached US\$ 24.4 billion. Some of the important recent developments in Indian economy are as follows:

- Exports from India increased 4.32 per cent year-on-year to US\$ 92.33 billion in April-May 2019.
- Nikkei India Manufacturing Purchasing Managers' Index (PMI) stood at 51.40 in July 2019, showing expansion in the sector.
- Mergers and Acquisitions (M&A) activity in the country has reached US\$ 41.6 billion in first half of 2019 (Jan-June).
- Income tax collection in the country reached Rs 2.50 lakh crore (US\$ 35.88 billion) between April-November 2018.
- In the first six months of 2019, eight companies held IPOs, raising as much as Rs 5,509 crore (US\$ 0.79 billion).
- India's Foreign Direct Investment (FDI) equity inflows reached US\$ 436.47 billion between April 2000 and June 2019, with maximum contribution from services, computer software and hardware, telecommunications, construction, trading and automobiles.
- India's Index of Industrial Production (IIP) rose 2 per cent year-on-year June 2019
- Consumer Price Index (CPI) inflation rose moderated to 3.15 per cent in July 2019 from 3.18 per cent in June 2019.
- Around 10.8 million jobs were created in India in 2017.
- India has improved its ranking in the World Bank's Doing Business Report by 23 spots over its 2017 ranking and is ranked 77 among 190 countries in 2019 edition of the report.
- India is expected to have 100,000 startups by 2025, which will create employment for 3.25 million people and US\$ 500 billion in value, as per Mr. T V Mohan Das Pai, Chairman, Manipal Global Education.

Rupesh R. Atram: Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

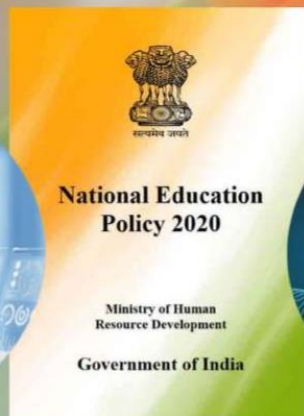
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020

Rupesh R. Atram

Assistant professor of Mathematics

Indira Mahavidyalaya, Kalamb

Dist- Yavatmal, Maharashtra India 445001

Abstract:

The main purpose of this paper is to highlight the status of Higher Mathematics Education in India before and after the new education policy-2020 especially connecting paths between NEP-1968, 1986, and 2020 with references for mathematical education in college and university level. The way higher mathematics teaching and learning changes from time to time along with acceptance of new techniques for teaching and learning which will be suggested in different education policies.

Key Words: Higher Mathematics, NEP-2020, MatLab, GeoGebra, WolframAlpha etc

Introduction:

The first national education policy was announced in 1968 by the government of Indira Gandhi, this policy based on the Kothari Commission (1964-66).

NEP-1968 was famous for

- Radical Reconstructivity
- Equal Education Opportunity

The Second Education Policy was Introduced in 1986. Actually this was the modification of NEP-1968 by the government of Rajiv Gandhi. This policy seriously talk about two things

- About removal of disparities
- To provide education opportunities especially women/backward and minority classes

Modification of NEP-1986 by the government of P.V.Narsimha Rao based on the Ram murti Commission led by chairperson shri Jaganath Reddy.

One of the major measures taken by this policy 1992 is Adding a common entrance exam for professional and technical programmes like Engineering entrance, medical Entrance etc.

NEP-2020 by the government of shri Narendra Modi. It is replacement of NEP-1986 (after 34 years) it is the first education policy by the BJP government.

Some key proposals for NEP-2020

- 5 + 3 + 3 + 4 year format
- UG degree courses available for 3 & 4 year duration with multiple entry and exit option
- Higher education institute now have the option of offering a 1-year masters degree
- Govt discontinue M.phil Program
- There will be no hard separation between arts and sciences stream

Development of Mathematical Institutes in India - Government of India had taken some important action towards development of mathematics by establishing different mathematical institute

TIFR - Tata Institute of Fundamental Research the institute was founded in 1945 by the government of India under the support of Sir Dorabji Tata Trust Under the vision of Dr.Homi Bhaba.

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education

1. Place of Publication - Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
2. Published on - 24 Feb. 2023
3. Printer's Name - Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.)
4. Publisher's Name - Dr. Mrs. Veera Mandavkar
Nationality - Indian
Address - Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401
5. Chief Editor's Name - Dr. Pavan Mandavkar
Nationality - Indian
Address - Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@sgbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

Dr. Pandurang Ingale: Adhyayan, adhyapan a mulyamapan prakriyatil navinyata va rashtriya dhoran 2020



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

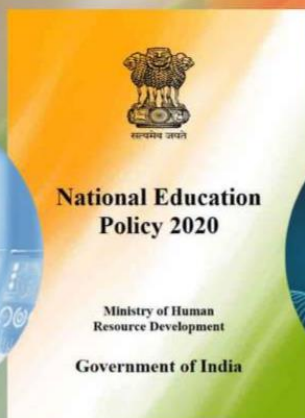
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०

प्रा. डॉ. पांडुरंग इंगळे

सहायक प्राध्यापक,

मानसशास्त्र विभाग, इंदिरा महाविद्यालय, कळंब

मो. न. ९१५८६८६०६६, ८८३०७६७४२९

कु. मनिषा बाबुराव भागवत

संशोधक विद्यार्थी

संशोधन केंद्र : मातोश्री शांताबाई गोटे महाविद्यालय,

वाशिम, जि. वाशिम.

सारांश

भारताने देशव्यापी दृष्टीकोनातून नव्या शैक्षणिक धोरणाची आखणी दोन वर्षांपूर्वी केली असून त्याची अमलबजावणी २०२२-२०२३ या चालू वर्षापासू सुरू झाली आहे. शिक्षण व्यवस्था ज्या देशाची जितकी मजबूत आणि प्रभावी असेल तितकी त्या देशाची आर्थिक, सामाजिक, शैक्षणिक, राजकीय, व्यवसायात्मक आणि सांस्कृतिकदृष्ट्या प्रगती अधिक असते. ही बाब सर्वमान्य आहे. परंतु हे सिद्ध होण्यासाठी त्याची अमलबजावणी प्रभावीपणे अमलात येणे तेवढेच गरजेचे असते. आणि त्याची सर्वतोपरी बुरा ही अध्यापन कार्य करणाऱ्या वर्गाला सांभाळणे क्रमप्राप्त ठरते. त्यासाठी शिक्षकांनी अध्ययन, अध्यापन व मूल्यमानातील बदल व नाविन्य पूर्णता असलेल्या व सोशलनेटवर्कींगच्या प्रगत काळात उदयास आलेल्या पध्दतींचा संशोधनात्मक आढावा घेणे हा प्रमुख हेतू या शोध निबंधाचा आहे. यासाठी दुयम प्रकाशित साहित्य जसे की, संदर्भ ग्रंथ, मासिके, पुस्तक, शैक्षणिक क्षेत्रातील संबंधीत संस्थांचे अहवाल इत्यादी. या गतसाहित्याचा वापर माहिती संकलित करण्यासाठी करण्यात आला आहे. सदरील माहितीच्या विश्लेषणातून असा निष्कर्ष समोर येतो की, अध्ययन अध्यापन व मूल्यमापनात नाविन्यपूर्णता ही इंटरनेट व दृकश्राव्य माध्यमाने विस्तृत आणि वैविध्यपूर्ण केली आहे.

मुद्दे :- संगणक, सोशियल मेडिया, व्हाट्सअप, कृत्रिम बुद्धिमत्ता, अध्ययन अध्यापन कौशल्य, आणि मूल्यमापन प्रक्रिया आणि शैक्षणिक धोरण २०२०.

प्रस्तावना :

कोणत्याही देशाच्या सामाजिक व शैक्षणिक विकासासाठी एक सुटसुटीत व भविष्याचे आखणी करणाऱ्या शालेय व महाविद्यालयनीन स्तरावरील शैक्षणिक धोरणाची गरज असते. राष्ट्रीय शैक्षणिक धोरण १९८६ च्या ऐवजी भारत सरकारने नव्या शैक्षणिक धोरण २०२० ला २९ जुलै २०२० रोजी मान्यता दिली. भारत देश हा शिक्षणाच्या बाबतीत नविन्याच्या संदर्भात लवचिक व बदलास प्राधान्य देणारा देश आहे. देशात जवळपास ८४५ युनिव्हर्सिटी आणि ४०००० हजाराच्या वर उच्च शिक्षण देणारे महाविद्यालय, संस्था आहेत. त्यापैकी ४० टक्के लहान लहान संस्था आंतरविद्याशाखाय उपक्रमाऐवजी एकच शैक्षणिक कार्यक्रम राबवतात. एकविसाव्या शतकातात देशाला आंतरविद्याशाखीय उपक्रम राबविण्याची गरज निर्माण झाली आहे. असे एका संशोधनात निदर्शनास आले आहे. त्याप्रमाणे २० टक्के महाविद्यालय वर्षाला १०० पेक्षा कमी विद्यार्थ्यांना गुणात्मक शिक्षण देत आहे. आणि ४ टक्के

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
**NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education**

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**

RECOGNIZED BY UGC UNDER 2 F & 12 B

NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)

ISBN 978-81-953708-1-8



9 788195 370818

Ved Patki: GENETICALLY MODIFIED ORGANISMS: AN URGENT NEED

ISBN: 978-93-88901-35-2

FRONTIERS IN LIFE SCIENCE

VOLUME X

Editors

Dr. Parimala B.

Dr. Priti Mishra

Dr. Kamlesh Kumar Yadav

Dr. Alok Ranjan Sahu



First Edition: 2023

First Edition: April, 2023

ISBN: 978-93-88901-35-2



© Copyright reserved by the Editor

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: www.bhumipublishing.com

E-mail: bhumipublishing@gmail.com

Book Available online at:

<https://www.bhumipublishing.com/book/>



12.	PROTEINS IN FISH Anil Kewat and Priti Mishra	74 - 81
13.	BIOETHANOL PRODUCTION FROM ORGANIC WASTE WITH IMMOBILISED YEAST CELL Shweta Humbarwadi, Shubham Jalgaonkar, Nayana Airekar and Poonam Raut	82 - 86
14.	EFFECT OF AIR POLLUTION ON PLANTS IN ULHASNAGAR GARDEN AREA AND AMBERNATH MIDC AREA D. Meena S. Rao and Suraj Maurya	87 - 93
15.	EFFECT OF SOME MICRO AND MACRO ELEMENTS ON ARTHROSPIRA SP. AND OPTIMIZATION OF ALGAL CULTURE MEDIUM D. Meena S. Rao and Monali Sonawane	94 - 99
16.	EVALI: WEEPING LUNGS DUE TO VAPING Saumya Sahajpal, Venu Gupta, Swati Chaudhary, Rakshit Sharma, Sahil Thakar and Navneet Sharma	100 - 108
17.	THE INCREASING TREND OF TYPE 2 DIABETES MELLITUS AMONG INDIANS Arvinda Shaw	109 - 119
18.	PLANT-DERIVED TANNINS: CHEMISTRY AND APPLICATION Mukesh Kumar Chaubey	120 - 131
19.	ANTI-CANDIDAL ACTIVITY OF <i>PSYDIUM GOAJAVA</i> BASED SILVER NANOPARTICLES Kirubha Pauldas, Sakshi Abende, Shreedevi Mehatre and Suman Kaver Rathod	132 - 138
20.	COMPLETE OVERVIEW OF QUERCETIN'S PHARMACOLOGICAL PROPERTIES AND MODE OF ACTION: A BIOACTIVE FLAVONOID Gobalan K, Sudharsan P, Purushothaman T, Koperuncholan M, Vasanth S and Siva Vijayakumar T	139 - 153
21.	PERFORMANCE OF WIDAL TEST IN TYPHOID FEVER IN TRIBAL AREA OF SIRONCHA TAHSIL S. R. Shaikh	154 - 156
22.	GENETICALLY MODIFIED ORGANISMS: AN URGENT NEED Ved Patki	157 - 159
23.	RECENT ADVANCEMENTS IN BIO-SUPERCAPACITORS Kailash Nemade	160 - 163
24.	FUNDAMENTALS OF POLYMERASE CHAIN REACTION (PCR) AND ITS APPLICABILITY IN DISEASE DIAGNOSIS Ashwin Atkulwar	164 - 167

GENETICALLY MODIFIED ORGANISMS: AN URGENT NEED

Ved Patki

Department of Zoology,

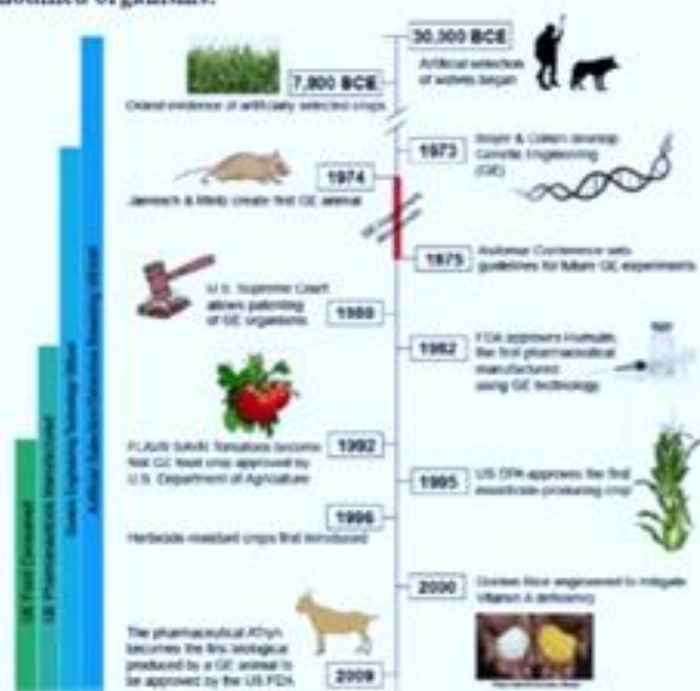
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Corresponding author E-mail: yedpatki@gmail.com

The most advanced race of organisms "human race" has achieved quantum leaps that no other entity on earth could achieve. Nature has its own capacity to rejuvenate itself to great extent unless interfered by anthropogenic activities. As we progress through time many of the man-made disasters need to be addressed somehow. As most of the problems we face today are basically due to human interference leading to exploitation and deterioration of natural resources. We must come up with something that could at least address and ease the concern.

Till now technology has reduced human labour and sped up life, but it also created environmental issues such as Pollution, degradation of our air, water, land, climate change etc. The list is vast and each issue must be tackled precisely. One of the tools which have shown promise in tackling the concern is Genetically Modified Organisms.

Genetically modified organisms:



Credits – Article - From Corgis to Corn: A Brief Look at the Long History of GMO Technology by by Gabriel Rangel figures by Anna Maurer

We humans though unknowingly have been modifying other organisms since ancient times. This modification can be attributed to "selective breeding" process. Though this process

**Ved R. Patki: CELLULAR REGENERATION FRONTIERS: EXPLORING
THE HORIZONS OF TISSUE REPAIR AND THERAPEUTICS**

ISBN: 978-93-88901-73-4

Research Trends in Animal Science

Editors:

Dr. Deeksha Sharma

Dr. Zeenat Kashmiri

Dr. Biplab Kumar Das

Dr. Sunil B. Avhad



Animal Science

ISBN: 978-93-88901-73-4



© Copyright reserved by the Editor

Publication, Distribution and Promotion Rights reserved by Bhumi Publishing, Nigave Khalasa, Kolhapur

Despite every effort, there may still be chances for some errors and omissions to have crept in inadvertently.

No part of this publication may be reproduced in any form or by any means, electronically, mechanically, by photocopying, recording or otherwise, without the prior permission of the publishers.

The views and results expressed in various articles are those of the authors and not of editors or publisher of the book.

Published by:

Bhumi Publishing,

Nigave Khalasa, Kolhapur 416207, Maharashtra, India

Website: www.bhumipublishing.com

E-mail: bhumipublishing@gmail.com

Book Available online at:

<https://www.bhumipublishing.com/book/>



12.	QUORUM SENSING IN AQUACULTURE HEALTH MANAGEMENT Madhuri Y. Bhande and Datta A. Nalle	76 - 83
13.	PCR BASED METHODS IN FISH MICROBIOLOGY Dhanshree M. Jagtap and Amol S. Patil	84 - 89
14.	MOLTING IN CRUSTACEANS Amit Jadhav	90 - 96
15.	FUTURE DIRECTIONS IN FISHERIES AND AQUATIC ANIMAL HEALTH RESEARCH Vivek Chintada, A Jayaraju, D Sridhar, Obaiah Jamakala and K. Veeraiiah	97 - 114
16.	PCR BASED METHODS IN FISH MICROBIOLOGY Dhanshree M. Jagtap and Amol S. Patil	115 - 120
17.	TERMITE: FRIEND AND FOE FOR MANKIND D. V. Chaudhary, F. K. Chaudhary, R. D. Dodiya and D. H. Padhiyar	121 - 130
18.	CELLULAR REGENERATION FRONTIERS: EXPLORING THE HORIZONS OF TISSUE REPAIR AND THERAPEUTICS Yed R. Patki	131 - 134
19.	DAIRY HERD HEALTH MANAGEMENT Smrutirekha Mallick and Samlesh Kumari	135 - 139

Ved Patki: Revisiting Indian Education with STEM: The Game Changer Teaching Methodology in NEP2020



Three Days

Multidisciplinary National Conference on

NEP-2020:

Innovation in Teaching-Learning & Evaluation Process in Higher Education

24 to 26th February 2023

Calangute, Bardez, Goa

Conference Proceedings

Print and Online Issue 1 English and Hindi

Published as per UGC (India) Guidelines

www.researchjournal.net.in

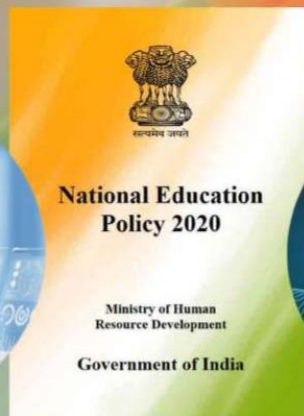
www.indiramahavidyalaya.com

Chief Editor

Dr. Pavan Mandavkar

ISBN

978-81-953708-1-8



Organized and Published By

INDIRA MAHAVIDYALAYA

KALAMB, DISTT. YAVATMAL, MAHARASHTRA 445 401 (INDIA)

in collaboration with RJI, DBMRC and

Sant Gadge Baba Amravaati Vidyapeeth Marathi Pradhyapak Parishad

ISBN 978-81-953708-1-8

Indira Mahavidyalaya, Kalamb
Sant Gadge Baba Amravati University Marathi Pradhyapak Parishad,
Research Journal of India & Dr. Bhau Mandavkar Research Center
Sponsored **National Conference** on

NEP-2020:
INNOVATION IN TEACHING-LEARNING
& EVALUATION PROCESS
IN HIGHER EDUCATION

24, 25 and 26 Feb. 2023 at Calangute, Goa

CONFERENCE PROCEEDINGS
ISSUE I – ENGLISH, HINDI

Chief Editor

□ **Dr. Pavan Mandavkar**

Principal, Indira Mahavidyalaya & Chairman, DBMRC
President, Sant Gadge Baba Amravati Vidyapeeth Marathi Pradhyapak Parishad, Amravati

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

---- Editorial Board ----

Prof. Rekha Wath, Prof. Nilkantha Narule, Prof. Saroj Lakhadive
Dr. Madhuri Rakhunde, Prof. Prashant Jawade, Dr. Dashrath Chavhan
Dr. Pandurang Ingale, Dr. K.R. Nemade, Dr. Ved Patki, Prof. Sheetal Raut

Printer

Sewa Prakashan

Vijay Colony, Rukmini Nagar, Amravati, Maharashtra 444 606

Cover Page Design & Computer

Dr. Pavan Mandavkar

Publisher

Dr. Mrs. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal, Maharashtra 445 401(India)
E mail – marathipradhyapak@gmail.com, researchjournalofindia@gmail.com
Telephone: 07201-226147, 226129, Mob. Chief Editor: 9422867658, Director & Publisher: 9403014885
Websites: www.indiramahavidyalaya.com, www.researchjournal.net.in

Index

	From the Bench of Editor	Dr. Pavan Mandavkar	2
	Index		3
1	Role of Teacher in NEP 2020	Miss. Saroj Lakhadive	4-6
2	Quality Academic Research in all Fields through a New Research Foundation	Asst. Prof. Gaurav Saxena	7-9
3	National Education Policy 2020: Issues and Challenges in Higher Education	Prof. Dr. Ajay Khadse	11-13
4	ए.आई.एम.एल. एकीकृत प्रणाली से कृषि – एक अंतर्विषयक शोध	डॉ. संकर्षण पंडा	14-19
5	The New Education Policy: Concerns and Prospects in context of Higher Education	1. Dr. Praful U. Gawai 2. Prof. Vilas Bhavare	20-23
6	Impact of plyometric & cycle ergometer training on handball players' anaerobic performance	1. Mrs. Shital S. Raut 2. Dr. Pravin C. Dabare	24-28
7	NEP 2020 and Rabindranath Tagore's Vision of Education	Prof. P. S. Jawade	29-31
8	Value education: a GOEC through E-learning for sustainable development of society	Dr. Dasharath Chavhan	32-34
9	Synthesis spectral characterisation and biological activity of hetero-cyclic compound of 2-imidazolones	Dr. Suraj Deshmukh Dr. M K Rahangdale	35-42
10	Language, Art, and Culture in NEP-2020	Dr. Pavan Mandavkar	43-46
11	National Education Policy 2020 in Context of Higher Education: An Overview	Prof. Dr. Ravi Prakash Chapke	47-50
12	Re-Visiting Indian Education with a STEM:The Game Changer Teaching Methodology in NEP 2020	Kailash Nemade ^a Ved Patki ^b	51-53
13	गाँधीजी की बुनियादी शिक्षा एवं नई शिक्षा नीति – विश्लेषणात्मक अध्ययन	डॉ. हंसा शुक्ला	54-56
14	Innovation in Mathematics Teaching & Learning Process in Higher Mathematics Education Through New NEP-2020	Rupesh R. Atram	57-62
15	नव्या शैक्षणिक धोरणाच्या अंमलबजावणीपुढील आव्हाने	डॉ. वीरा मांडवकर	63-67
16	अध्ययन, अध्यापन व मूल्यमापन प्रक्रियेतील नावीन्यता व राष्ट्रीय शैक्षणिक धोरण २०२०	प्रा. डॉ. पांडुरंग इंगळे कु. मनिषा बाबुराव भागवत	68-69

(□All copyrights are reserved with the Chief Editor. The opinions expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed.)

Re-Visiting Indian Education with a STEM: The Game Changer Teaching Methodology in NEP 2020

Kailash Nemade^a, Ved Patki^b

^aDepartment of Physics, Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401.

^bDepartment of Zoology, Indira Mahavidyalaya, Kalamb Dist. Yavatmal 445401.

Corresponding Author E-Mail Address vedpatki@gmail.com (Dr. Ved Patki)

Abstract

Science Technology Engineering Mathematics (STEM) subjects are gradually being acknowledged as being an essential component of education. Consequently, STEM education plays a crucial part in the National Education Policy 2020. When discussing the lack of trained people and subpar education in certain disciplines, the term "STEM education" has become popular. Modern technology is used in STEM education to improve STEM abilities. Additionally, this promotes interest in STEM disciplines.

Keywords: Indian Education; STEM, NEP 2020

1. Introduction

Because of our growing reliance on technology, the world's workforce is now both smaller and more competitive. Likewise, nations must make sure that their future leaders are able to adapt to change, think critically, and work quickly. Science, Technology, Engineering, and Mathematics, or STEM, is a term that was first used in the US in the 1990s. It was formed in the early 2000s as a way to demonstrate how the four disciplines are interrelated. Simply said, STEM illustrates the needs of the future global workforce.

STEM-related job postings have grown by 44% in India between 2016 to 2019. The National Science Foundation estimates that 80 percent of the new occupations developed around the world in the upcoming ten years will involve some kind of math or science. A number of nations, such as the UK, Canada, and Australia, have national STEM strategies to close the skills gap in their workforces [1].

According to NEP, the child's report card must include both objective and skilled or vocational issues. A child's learning was formerly evaluated on the basis of rote memory of the subjects. Currently, it is competency-based, which encourages more analysis and conceptual clarity in the learning graphs of the children. This evaluation goal satisfies the need to enhance the educational system as a whole and brings about ongoing revisions to the teaching-learning process for the growth of a student. STEM fosters the highest performance for evaluation, aids in reviewing and analyzing prior learning, and aids in a child's overall growth [2]. It denotes

- Marks will be nothing more than a number.
- Your child's future is entirely dependent on the knowledge and abilities that he or she can keep. When we refer to someone's skills, we imply how well their theoretical knowledge translates into real-world application.
- STEM education can cover this type of instruction, particularly for areas like science and math. For nations like ours, which have a large youth population, the aforementioned, high-quality education will do best to enrich their talent and do the best resource utility over the next ten years.
- Only school-level instruction will now be provided in the high-quality, practical education that we previously received in colleges and other higher education institutions.

Form IV
(See Rule 8)

Statement about ownership and other particular about the Conference Proceedings
NEP-2020: Innovation in Teaching-Learning
& Evaluation Process in Higher Education

- | | | |
|-------------------------|---|---|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 2. Published on | - | 24 Feb. 2023 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony, Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb, Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya, Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and belief.

Dr. Y.M. Donde Sarwajanik Shaikshanik Trust's (1974)

INDIRA MAHAVIDYALAYA (1983)

KALAMB, DIST. YAVATMAL, MAHARASHTRA 445401

☎ 07201-226147, 226129 (Fax)

Web.: www.indiramahavidyalaya.com

www.researchjournal.net.in

Email: imvkalamb@yahoo.co.in

indiram414@srbau.ac.in

For Research centre: researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

Permanently Affiliated to **SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI**
RECOGNIZED BY UGC UNDER 2 F & 12 B
NAAC RE-ACCREDITED WITH 'B+' GRADE



Conference Organizing Committee and Editorial Board

Convenor & Principal - Dr. Pavan Mandavkar

Co-convenor & Director, Research Centre - Dr. Veera Mandavkar

Prof. Nilkanth Narule

Dr. Madhuri Rakhunde

Prof. Saroj Lakhdive

Prof. Rekha Wath

Prof. Prashant Jawade

Dr. Dasharath Chavhan

Dr. Pandurang Ingle

Dr. Kailash Nemade

Dr. Ved Patki

Prof. Shital Raut



(All rights are reserved with the Authors, Publisher & Editorial Board. The opinion expressed are of the authors & the advisory board, editorial board as well as the organizers does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)



Dr. Ved Patki: Application of Statistics in Research

ISBN 978-81-953708-7-0



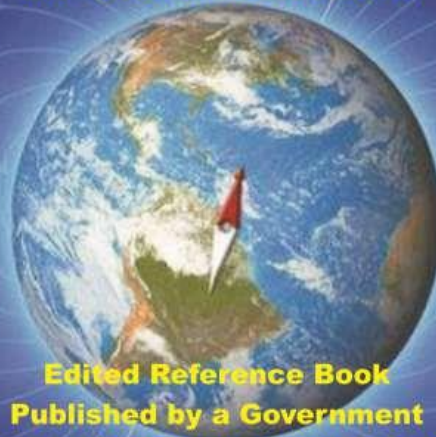
**Research
and
Development**

संशोधन आणि विकास

Edited By

Dr. Pavan Mandavkar

Dr. Veera Mandavkar



Edited Reference Book

Published by a Government

Recognized National Level Publisher

under Peer Review System as per UGC Guidelines

ISBN 978-81-953708-7-0

Research and Development

(Edited Book as per UGC Norms by National Level Publisher)

संशोधन आणि विकास

Chief Editor

Dr. Pavan Mandavkar

Principal, Indira Mahavidyalaya, Kalamb

Associate Editor

Dr. Veera Mandavkar

Director, Dr. Bhau Mandavkar Research Centre (DBMRC)

Dr. Bhau Mandavkar Research Centre















Indira Mahavidyalaya, Kalamb, Dist. Yavatmal

Maharashtra 445 401 (India)

9422867658, 9403014885

researchjournalofindia@gmail.com

marathipradhyapak@gmail.com

-  ISBN 978-81-953708-7-0
-  Edited Reference Book (in multilanguage)
-  Research and Development संशोधन आणि विकास
-  © Principal Dr. Pavan Mandavkar
© प्राचार्य डॉ. पवन मांडवकर
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
-  Edition I 8 March, 2023
(Mahashivratri, International Women's Day)
-  **Publication Number** 22 प्रकाशन क्र. २२
-  **Copies** 1000 प्रती १०००
-  **Size** Demi आकार डेमी
-  **Pages** 304 पृष्ठसंख्या ३०४
-  **Cover Page** 4 colour मुखपृष्ठ फोर कलर
-  **Type setting & cover page** Dr. Pavan Mandavkar
संगणक / मुखपृष्ठ रचना डॉ. पवन मांडवकर
-  **Publisher**
Dr. Veera Mandavkar
Director, Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb, Dist. Yavatmal,
Maharashtra 445 401 (India)
9422867658, 9403014885
researchjournalofindia@gmail.com
marathipradhyapak@gmail.com
-  **Printer and Distributor**
Sewa Prakashan, Vijay Colony, Amravati
- (Note: All rights are reserved with the Publisher & Editorial Board. The opinion expressed are of the authors & the association advisory board, editorial board as well as the peer committee does not hold any responsibility for any of the views expressed. Judiciary matter in Kalamb Court only.)
-  **Rs. 400/-** मूल्य ४०० रुपये

10	Heat and Dust: Ruth Praver Jhabvala's 'Insider-outsider' View - Dr. Vijay D. Bhangre	89-98
11	Biodiversity and Human Health: A Symbiotic Relationship - Rahul A. Sinha	99-115
12	Dalit women feminism & Rebel traversed in Jyoti Langewar' Poem, 'Mother' & 'Caves' - Prof. P. S. Jawade	116-120
13	Giants Through the Lens of Alienation in Rowling's Harry Potter series - Dr. S. S. Joshi	121-131
14	Fuzzy Logic in Temperature Control Systems: Adaptive and Intelligent Solutions - Dr. Vicky Watkar	132-141
15	National Education Policy 2020 and Research in Higher Education - Dr. Pavan Mandavkar	142-147
16	Heavy Metals, their Health Effects and its Precautions - Dr. Dasharath M. Chavhan	148-152
17	Schiff Base Ligands: Formation of a Thiadiazole Ring by Vanadium-Induced Cyclization of the Coordinated Ligand - Suraj A. Deshmukh	153-160
18	Recent Advancements in the Spintronics Application of Carbon Nanotube - Kailash Nemade	161-168
19	Applications of Statistics in Research - Dr. Ved Ramesh Patki	169-174
20	Comparative Analysis of Positional Variations in Physical Fitness and Body Mass Index (BMI) Among Handball Players of Yavatmal District - Shital S. Raut	175-181
21	A Comparative Study among Working and Non-Working Women with Respect to Life Satisfaction - Dr. Pandurang Ingle	182-191

Applications of Statistics in Research

Dr. Ved Ramesh Patki
Asst. Prof. and Head
Dept. of Zoology,
Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal, Maharashtra, India

Introduction:

In the realm of research, statistics serves as an indispensable tool for collecting, analyzing, interpreting, and presenting data (Smith, 2018). Its applications span across various fields including but not limited to social sciences, natural sciences, medicine, economics, and engineering (Jones & Brown, 2020). Statistics provides researchers with the means to derive meaningful insights from data, guiding evidence-based decision-making processes and fostering a deeper understanding of complex phenomena (Johnson et al., 2019). By employing statistical techniques, researchers can quantify uncertainty, assess the reliability of findings, and make informed conclusions based on empirical evidence (Garcia & Martinez, 2021). This chapter aims to explore the diverse applications of statistics in research, highlighting its significance in advancing knowledge and driving scientific progress across disciplines.

Descriptive Statistics:

Descriptive statistics involve the organization, summarization, and presentation of data to reveal patterns, trends, and distributions (Brown & Miller, 2017). Common descriptive techniques include measures of central tendency (mean, median, mode), measures of dispersion (range, variance, standard deviation), and graphical representations (histograms,

Form IV (See Rule 8)

Statement about ownership and other particulars about the edited book
Research and Development

- | | | |
|-------------------------|---|--|
| 1. Place of Publication | - | Indira Mahavidyalaya, Kalamb |
| 2. Published on | - | 8th March, 2024 |
| 3. Printer's Name | - | Seva Prakashan, Vijay Colony,
Amravati 444606 (M.S.) |
| 4. Publisher's Name | - | Dr. Mrs. Veera Mandavkar |
| Nationality | - | Indian |
| Address | - | Indira Mahavidyalaya, Kalamb,
Dist. Yavatmal 445401 |
| 5. Chief Editor's Name | - | Dr. Pavan Mandavkar |
| Nationality | - | Indian |
| Address | - | Principal, Indira Mahavidyalaya,
Kalamb, Dist. Yavatmal |

We, Dr. Pavan Mandavkar & Dr. Mrs. Veera Mandavkar hereby declare that the particulars given above are true to the best of our knowledge and



Dr. Bhau Mandavkar Research Centre
Indira Mahavidyalaya, Kalamb
Dist. Yavatmal, Maharashtra, India
E mail: marathipradhyapak@gmail.com
researchjournalofindia@gmail.com

₹ 400/-