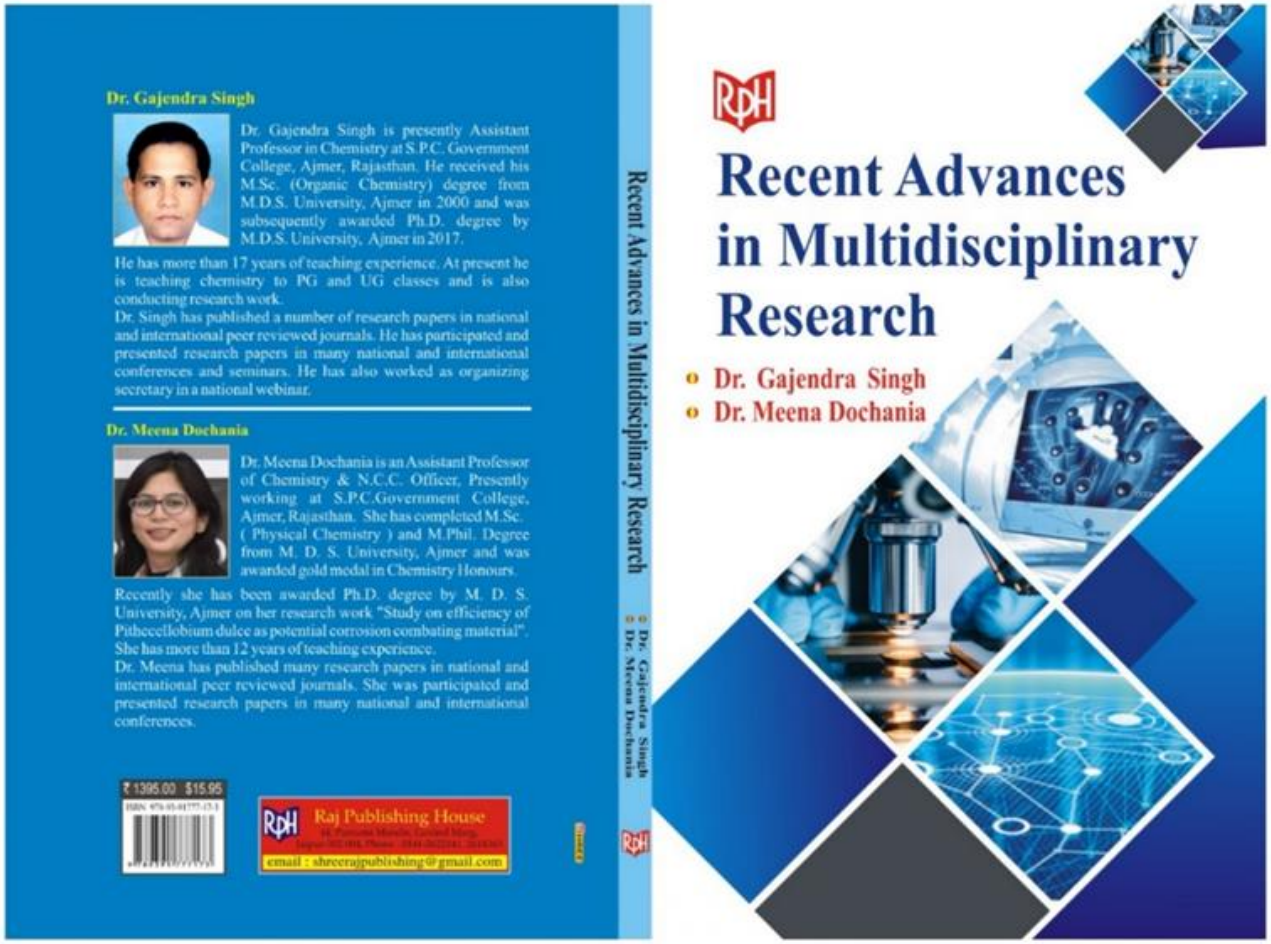
Dr. Kailash Nemade: Graphene Based Electronics Application



Publisher:
Mrs. Kiran Parnami
Raj Publishing House
44, Parnami Mandir, Govind Marg, Jaipur-302004
Cell : 09414051782
Email : shreerajpublishing@gmail.com

Recent Advances in Multidisciplinary Research

Editors
Dr. Gajendra Singh
Dr. Meena Dochania

International Standard Book No. (ISBN)
978-93-91777-17-3
Edition : 2021

Jurisdiction of book distribution : All India

Printed at
Trident Enterprises, Delhi

Contents

7

Graphene Based Electronics Applications

Dr. Kailash Nemade*

ABSTRACT

Graphene is a single atomic layer of sp^2 hybridized carbon atoms, covalently bonded in a regular hexagonal pattern. It is the thinnest material in the universe, which is first really two-dimensional crystalline material stable at room conditions. Graphene is one of the most exciting materials, not only due to academic interest but also for its potential applications. Graphene has showed a variety of exciting properties including high electron mobility at room temperature, outstanding thermal conductivity and better mechanical properties with high Young's modulus.

KEYWORDS- Graphene; Sensor; Field Effect Transistor; Photovoltaic Cell

1. INTRODUCTION

Graphite is made up of many stacked graphene sheets, and graphene was first isolated by removing a single sheet from a graphite crystal. This first separation was achieved in 2004 by Andre Geim and Konstantin Novoselov from the University of Manchester, who were awarded the Nobel Prize in Physics in 2010 for the revolutionary work on graphene. The model of a perfect graphene lattice is shown in Figure 1.

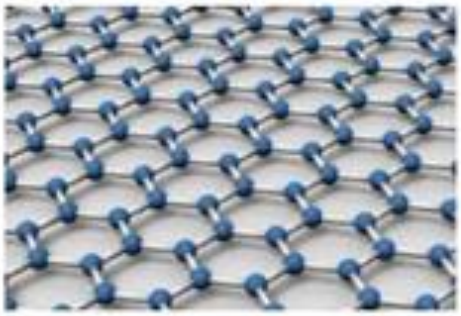


Figure 1. Model of a perfect graphene lattice.

* Department of Physics, Indira College, Kalamb, Dist.-Yavatmal, Maharashtra
ISBN : 978-93-91777-17-3