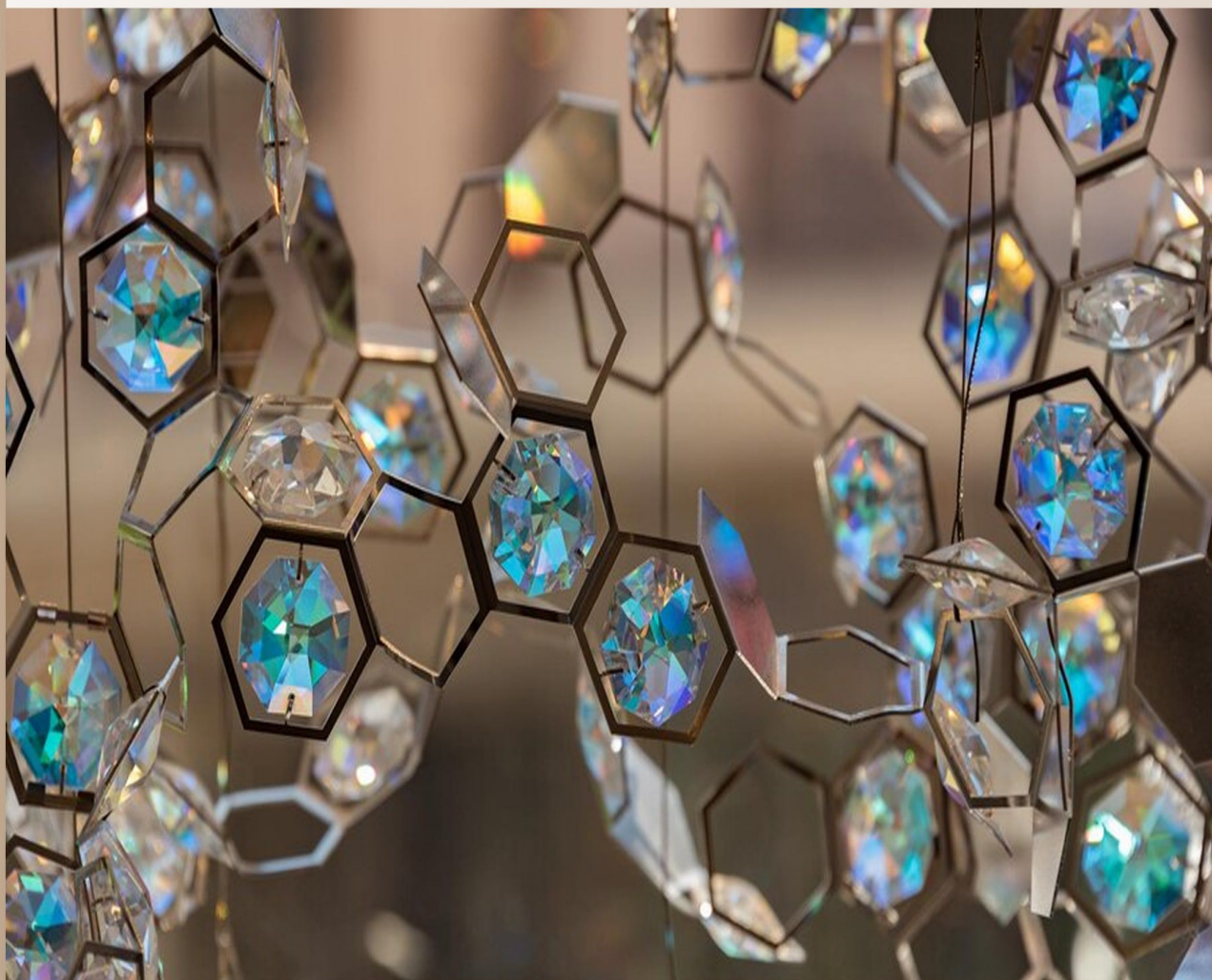


Futuristic Trends in
**Chemical Material Sciences &
Nano Technology**

Volume 3, Book 4, 2024, IIP Series



Futuristic Trends in

CHEMICAL, MATERIAL SCIENCES & NANO TECHNOLOGY

Volume 3, Book 4, 2024, IIP Series



Title of the Book: Futuristic Trends in Chemical Material Sciences & Nano Technology

Edition: Volume 3, Book 4, 2024, IIP Series

Copyright © 2024 Authors

No part of this book may be reproduced or transmitted in any form by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owners and publisher.

Disclaimer

The authors are solely responsible for the contents published in this book. The publisher or editors do not take any responsibility for the same in any manner. Errors, if any, are purely unintentional and readers are requested to communicate such errors to the editors or publishers to avoid discrepancies in future.

E-ISBN: 978-93-5747-550-1

Publisher, Printed at & Distribution by:

Selfypage Developers Pvt. Ltd.,
Pushpagiri Complex,
Beside SBI Housing Board,
K.M. Road Chikkamagaluru, Karnataka.
Tel.: +91-8861518868
E-mail: info@iipseries.org

IMPRINT: I I P Iterative International Publishers

PREFACE

Chemical, Material Sciences & Nano technology book series aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Chemical, Material Sciences & Nano technology. The field of advanced and applied Chemical, Material Sciences & Nano technology has not only helped the development in various fields in Science and Technology but also contributes the improvement of the quality of human life to a great extent. The focus of the book would be on state-of-the-art technologies and advances in Chemical, Material Sciences & Nano technology and to provides a remarkable opportunity for the academic, research and industrial communities to address new challenges and share solutions and discuss future research directions in the below field but not limited to

1. Analytical Chemistry
2. Electrochemistry
3. Environmental Chemistry
4. Inorganic Chemistry
5. Materials Chemistry
6. Natural Products Chemistry
7. Organic Chemistry
8. Physical Chemistry
9. Sensors
10. Theoretical Chemistry
11. Nanostructures
12. Nanosciences
13. Nanotechnology
14. Materials Sciences
15. Applications

EDITORIAL BOARD MEMBERS

Dr. Madhu Sudhanan E

Research Associate

Department of Agricultural Entomology

Tamil Nadu Agricultural University

Coimbatore, India

Prof. Nitin Sali

Professor

Padmashri Vikhe Patil College

Pravaranagar India

Mr. Balveer Sharma

Technical Assisstant

CIPET: CSTS

Bhanyawala, Doiwala, Dehradun, Uttrakhand, India

Mr. Saroj Saha

Senior Research Fellow

Department of Physics

Visva-Bharati, Santiniketan, West Bengal, India

Dr. Amulya Bihari Pattnaik

Assistant Professor

Metallurgy Department

Igit Sarang, Dhenkanal, Odisha, India

Dr. Shivani Singh

Assistant Professor

Thakur College of Engineering and Technology

Thakur, Kandivali East Mumbai, Maharashtra, India

Dr. Damodar V Prabhu

Adjunct Professor

Department of Chemistry

Wilson College (Autonomous)

Mumbai, India

Ms. Bhumika Sharma

Assistant Professor

Department of Physics

GVM Girls College

Sonipat, India

CONTENTS

PART 1		Page No.
Chapter 1 EFFECTIVE COMMUNICATION: STRATEGIES AND CHALLENGES		1-7
Chapter 2 NANOPARTICLES UPTAKE, UTILIZATION AND PHYTOTOXICITY IN PLANTS.....		8-20
Chapter 3 INTRODUCTION OF SCHIFF BASES.....		21-32
Chapter 4 APPLICATIONS OF NANOTECHNOLOGY IN PEST MANAGEMENT OF HORTICULTURAL CROPS.....		33-52
Chapter 5 BASICS OF ANALYTICAL CHEMISTRY.....		53-68
Chapter 6 SYNTHESIS AND STRUCTURAL OVERVIEW OF SOME INTRIGUING TELLURIUM/NITROGEN-CONTAINING MACROCYCLES.....		69-79
Chapter 7 NANOTECHNOLOGICAL APPLICATIONS IN HORTICULTURAL PLANT DISEASE MANAGEMENT.....		80-102
Chapter 8 ORGANIC LIGHT EMITTING DIODE, ITS MATERIALS AND APPLICATION.....		103-135
Chapter 9 NANOPARTICLES IN PLANT DISEASE MANAGEMENT.....		136-144
PART 2		
Chapter 1 MANGANESE BIOCATALYSIS.....		147-162
Chapter 2 EXPLORING HALF-METALLIC FERROMAGNETISM IN II-IV-V ₂ CHALCOPYRITE'S FOR SPINTRONIC APPLICATIONS.....		163-179
Chapter 3 EN ROUTE TO FLUOROPHORES BASED ON OXYGEN HETEROCYCLES		180-207

Chapter 4 EXPLORATION OF STRUCTURAL, ELECTRONIC, AND MAGNETIC CHARACTERISTICS OF XYZ HALF-HEUSLER COMPOUNDS THROUGH THE TB-LMTO METHOD.....	208-226
Chapter 5 PHYTOCHEMICAL, ETHANOBOTANICAL USES AND PHARMACOLOGICAL VALUES OF BARLERIA CRISTATA LINN.....	227-250
Chapter 6 FIRST-PRINCIPLE CALCULATIONS OF PRESSURE-INDUCED CHANGES IN STRUCTURAL, ELECTRONIC, AND OPTICAL PROPERTIES OF CUMX ₂ (M = GA, IN; X = S, SE, TE) CHALCOPYRITES.....	251-280



IIP Series is online, open access, peer-reviewed, interdisciplinary Journal. IIP Series provides a comprehensive solution for conferences and edited books that covers research topics across various scientific, technical, and medical disciplines. It aims at disseminating high-level research results and developments to researchers and research groups. It mainly focuses on presenting practical solutions for the current problems in Applied Sciences and Applied Social Sciences. It features original research work, reviews, case reports, tutorial papers, and accounts of practical developments.

Futuristic Trends in Chemical Material Sciences & Nano Technology

Volume 3 Book 4, 2024, IIP Series

ISBN : 978-93-5747-550-1

