

Volume 3, Book 5, 2024, IIP Series

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



Futuristic Trends in

CHEMICAL, MATERIAL SCIENCES & NANO TECHNOLOGY

Volume 3, Book 5, 2024, IIP Series



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

Edition: Volume 3, Book 5, 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: 978-93-5747-912-7

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. Shobhnath Parasnath Gupta

Postdoc

Sunchon National University

South Korea

Dr. Popat Mohite

Associate Professor

Department of Pharmaceutical Chemistry

St John Institute of Pharmacy and Research

Palghar, Maharashtra, India

Dr. Pawan Kumar

Post Doctoral Fellow

Department of Chemistry

IIT Kanpur

Kalyanpur, Uttar Pradesh, India

Ms. Soma Majumder

JRF/SRF (Junior Research Fellows/Senior Research Fellows)

Sandhya Lodge Barabazar

Pandu, Guwahati, Kamrup Metropolitan, Assam, India

Dr. V B Patil

Assistant Professor

Dr. D Y Patil Institute of Engineering

Management and Research

Akurdi Pune, Maharashtra, India

Dr. Rajendra Kumar

Professor

Department of Physics

FET, Rama University

Kalyanpur, Kanpur, Uttar Pradesh, India

Dr. Shiva Sharma

Associate Professor

Shobhit Institute of Engineering and Technology (Deemed to be University)

Meerut, Uttar Pradesh, India

Mr. Omkar Sunil Nille

Research Scholar

Fluorescence Spectroscopy Research Laboratory (FSRL)

Department of Chemistry

Shivaji University

Kolhapur, India

CONTENTS

PART 1		Page No.
Chapter 1 LAW OF ACTION OF NANOPARTICLES.....		1-5
Chapter 2 VARIOUS RADICAL INITIATION PROCESSES IN ORGANIC SYNTHESIS.....		6-19
Chapter 3 MARINE-DERIVED NATURAL PRODUCTS: A NOVEL SOURCE OF POTENTIAL ANTICANCER DRUGS IN THE OCEAN.....		20-36
Chapter 4 FECAL MICROBIOTA TRANSPLANTATION IN ASTHMA.....		37-48
Chapter 5 RECENT ADVANCEMENTS IN CARBON NANOPARTICLES AND ITS APPLICATION AS NANO FERTILIZER FOR ENHANCEMENT OF GROWTH TO VARIOUS CROPS IN THE FIELD OF AGRICULTURE.....		49-58
Chapter 6 RADIANT REVOLUTION WITH CARBON DOTS TRANSFORMING MEDICINE.....		59-70
Chapter 7 LATEST FRONTIERS FOR NANOMATERIAL CHARACTERIZATION		71-87
Chapter 8 CHEMISTRY OF SOME FASCINATING HOMOLEPTIC MACROCYCLIC POLYTELLUROETHERS, TELLUROMETALLOMACROCYCLES AND TELLURAPORPHYRINS; SYNTHESIS AND STRUCTURAL PERSPECTIVES.....		88-103
Chapter 9 NANOSPONGES: A DRIVEN APPROACH FOR NOVEL DRUG DELIVERY.....		104-124
PART 2		
Chapter 1 NANOTECHNOLOGICAL TRENDS IN MEDICAL IMAGE SECURITY AND AUTHENTICATION.....		125-151
Chapter 2 ADVANCEMENT IN MEDICAL IMAGING: NANOTECHNOLOGY.....		152-163

Chapter 3 TECHNICAL SUSTAINABILITY OF RHINOCEROS IN KAZIRANGA NATIONAL PARK.....	164-170
Chapter 4 SMART MATERIALS: PIONEERING THE FUTURE OF RESPONSIVE AND ADAPTIVE TECHNOLOGIES.....	171-183
Chapter 5 ENHANCING BLACK COTTON SOIL WITH POLYPROPYLENE FIBER REINFORCEMENT: A GEOTECHNICAL APPROACH.....	184-194
Chapter 6 SYNTHESIS, CHARACTERISATION AND PERFORMANCE ENHANCEMENT OF MATERIALS USING NANOTECHNOLOGY BASED NANO COMPOSITE.....	195-207
Chapter 7 APPLICATIONS OF NANO PARTICLES IN RESPIRATORY DISEASES	208-214
Chapter 8 HYDROGEL DRESSING FOR WOUND HEALING.....	215-240



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 5, 2024, IIP Series

ISBN : 978-93-5747-912-7



9 789357 479127