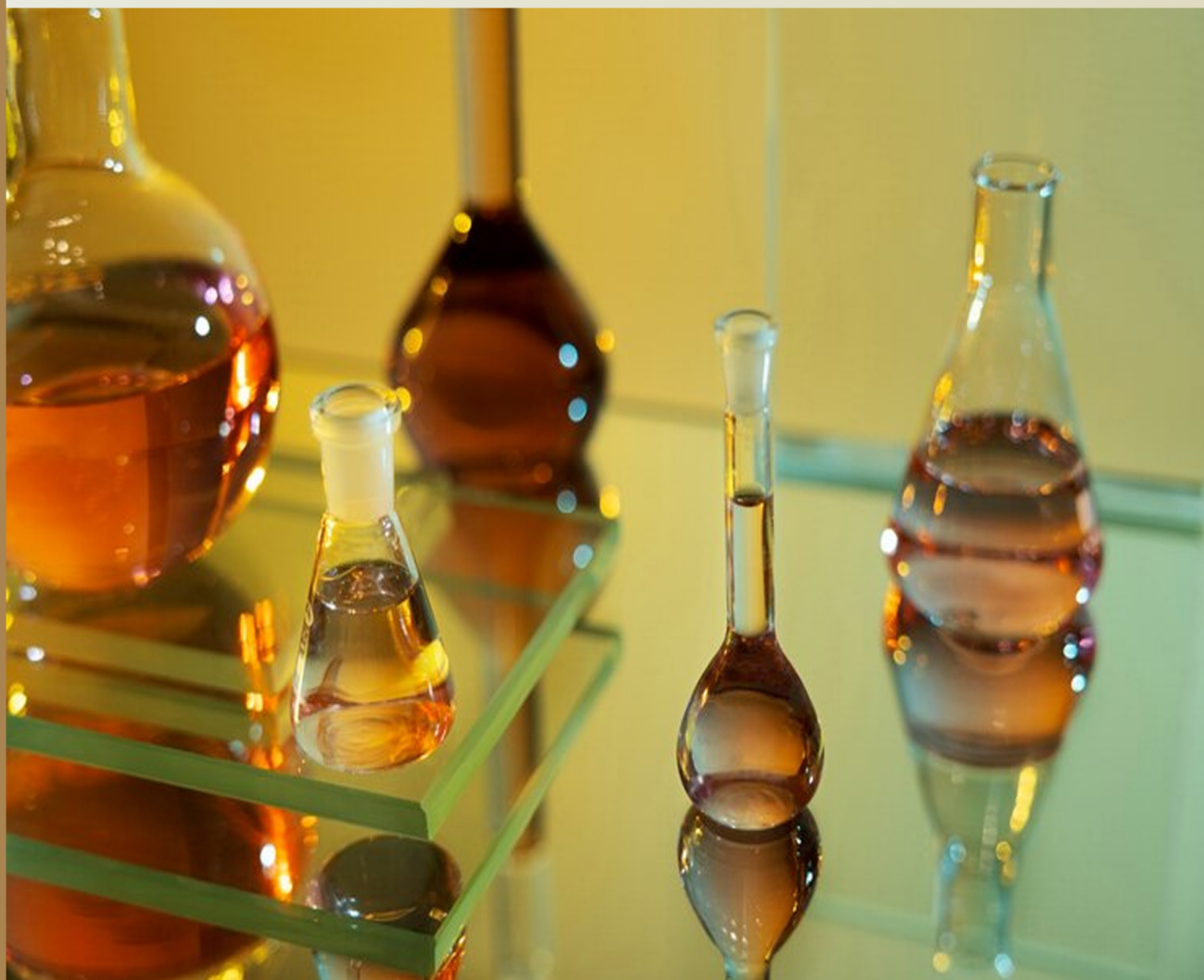


Volume 3, Book 18, 2024, IIP Series

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



Futuristic Trends in

CHEMICAL, MATERIAL SCIENCES & NANO TECHNOLOGY

Volume 3, Book 18, 2024, IIP Series



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

Edition: Volume 3, Book 18, 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: 978-93-5747-640-9

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. Aparajita Shankar

PhD Scholar

Doon University

Dehradun, Uttarakhand, India

Dr. Rajesh Kumar Meena

Assistant Professor

Kalindi College

University of Delhi

New Delhi, India

Dr. Wasudeo Gurnule

Assistant Professor

Kamla Nehru Mahavidyalaya

Nagpur, Maharashtra, India

Ms. Ananya Chaudhuri

Ph.D. Research Scholar

Sidho-Kanho- Birsha University

Purulia, West Bengal, India

CONTENTS

	Page No.
Chapter 1 MAGNETIC PROPERTIES OF TRANSITION METAL COMPLEX.....	1-15
Chapter 2 THERAPEUTIC AND SYNTHETIC IMPORTANCE OF 1, 3-IMIDAZOLE DERIVATIVES.....	16-24
Chapter 3 A BRIEF REVIEW OF TREATMENT METHODS FOR CERTAIN EMERGING CONTAMINANTS IN DOMESTIC AND INDUSTRIAL EFFLUENTS.....	25-39
Chapter 4 EMBRACING THE FUTURE: HARNESSING THE POWER OF NATURAL FLAVONOIDS IN NANOTECHNOLOGY.....	40-49
Chapter 5 SPRAY PYROLYZED PREPARED THIN FILMS OF TETRAGONAL INDIUM SULFIDE.....	50-59
Chapter 6 TREATED WASTE WATER USE IN CONSTRUCTION INDUSTRIES	60-72
Chapter 7 COMPARITIVE ANALYSIS OF OPTICAL PROPERTIES OF CdSe AND CdS ANNEALED THIN FILMS USING SPRAY PYROLYSIS TECHNIQUE.....	73-78
Chapter 8 FUNDAMENTALS OF BIO-ELECTROCHEMICAL SENSORS, ADVANCEMENTS AND IMPLICATIONS.....	79-104
Chapter 9 STUDY OF HYBRID OPTOMECHANICAL SYSTEM CONTAINING MULTIPLE QUANTUM DOTS.....	105-111
Chapter 10 NOVEL RELATIVE STUDIES: SYNTHESIS, CHARACTERIZATION OF COPOLYMER COMPOSITES AND THEIR ANTIMICROBIAL STUDY	112-122
Chapter 11 STRESS DISTRIBUTION OF PVC/ POLYSTYRENE MATERIAL TUBE HAVING INTERNAL PRESSURE AND THERMO- MECHANICAL LOAD.....	123-137

Chapter 12 MAGNETO CONVECTION IN COUPLE STRESS NANOFUID LAYER	138-147
Chapter 13 THE OVERVIEW OF SUSTAINABLE TECHNOLOGIES FOR THE TREATMENT OF INDUSTRIAL WASTE WATER AND ITS POTENTIAL FOR REUSE.....	148-158
Chapter 14 CELLULOSE BASED NANOMATERIALS AND THEIR POTENTIAL APPLICATIONS.....	159-175
Chapter 15 SYNTHESIS OF METAL-OXIDE NANOPARTICLES AND ITS APPLICATIONS IN VARIOUS FIELDS.....	176-184
Chapter 16 GREEN SYNTHESIS OF SILVER NANOPARTICLES AND THEIR POTENTIAL APPLICATIONS.....	185-196
Chapter 17 FORMULATION, DEVELOPMENT AND EVALUATION OF NAIL PAINT REMOVER CREAM.....	197-203
Chapter 18 APPLICATION OF COMBINATORIAL TOOLS TO ANTI- TUBERCULOSIS DRUG.....	204-215
Chapter 19 APPLICATIONS OF HYPHENATED TECHNIQUES IN PHARMACEUTICAL SCIENCES.....	216-228
Chapter 20 NANOTECHNOLOGY IN NOVEL DRUG DELIVERY SYSTEM.....	229-249
Chapter 21 EXFOLIATED GRAPHITE IN OIL SORPTION.....	250-256
Chapter 22 FLUORESCENCE QUENCHING OF VARIOUS ORGANIC AMINO FLUOROPHORES BY INORGANIC ANIONS.....	257-264
Chapter 23 BIOLOGICAL ACTIVITIES AND PHYTOCHEMICALS OF CLITORIATERNATEA (BUTTERFLY PEA).....	265-276
Chapter 24 ADVANCED SYNTHESIS OF GOLD AND IRON OXIDE HYBRID NANOCOMPOSITE MATERIALS AS MAGNETICALLY RECYCLABLE SUPERIOR CATALYST.....	277-295

Chapter 25 NATURAL COSMECEUTICALS CONTRIBUTION TO SKIN CARE PREPARATIONS: A REVIEW	296-317
Chapter 26 HYPERVALENT IODINE REAGENTS: VERSATILE REAGENTS IN SYNTHETIC CHEMISTRY	318-327
Chapter 27 EFFECT OF TOXIC HEAVY METALS ON ECOSYSTEM.....	328-343
Chapter 28 ANTIMICROBIAL ACTIVITY OF NEWLY SYNTHESIZED NANOPOROUS TERPOLYMER RESIN DERIVED FROM O- TOLUIDINE, BIURET AND FORMALDEHYDE.....	344-351
Chapter 29 PREPARATION OF MIXED METAL OXIDE (ZN AND CUO) NANOPARTICLES DOPED POLYMER (PMMA) COMPOSITE FILMS USING SOLUTION CAST METHOD.....	352-361
Chapter 30 POLYMER NANOCOMPOSITES: RECENT RESEARCH ADVANCES AND ADVANCED APPLICATIONS.....	362-370
Chapter 31 THERMORESPONSIVE SMART POLYMERS AND THEIR APPLICATIONS IN THE BIOMEDICAL FIELD.....	371-390
Chapter 32 APPLICATIONS FOR THE SYNTHESIS, AND PROPERTIES OF GRAPHENE OXIDE DETAILED ANALYSIS.....	391-411
Chapter 33 SYNTHESIS, CHARACTERIZATION AND PHYSICOCHEMICAL STUDIES OF TERPOLYMER RESIN SATF-I DERIVED FROM SULPHANILIC ACID, THIOUREA AND FORMALDEHYDE.....	412-425
Chapter 34 CONDUCTING POLYMERS FOR ELECTRONIC APPLICATIONS.....	426-444
Chapter 35 ADVANCE MATERIAL COPOLYMERS AND THEIR SURFACE MODIFICATION TECHNIQUES: A REVIEW.....	445-449
Chapter 36 FENTON OXIDATION PROCESS FOR TREATMENT OF WASTE WATER CONTAINING DYES.....	450-459

Chapter 37 HEAVY METALS: ENVIRONMENTAL POLLUTION AND IMPACT ON HUMAN HEALTH.....	460-481
Chapter 38 HYBRID CARBON BASED CONDUCTING POLYMER NANOCOMPOSITE FOR IMPROVED ELECTROMAGNETIC INTERFERENCE SHIELDING EFFECTIVENESS.....	482-502
Chapter 39 MXENE AND MXENE-BASED COMPOSITES FOR SENSING APPLICATIONS: A COMPREHENSIVE REVIEW OF PHYSICAL, PHYSICOCHEMICAL, AND PERFORMANCE ASPECTS.....	503-531
Chapter 40 AN EMERGING FUTURE TREND IN WASTEWATER TREATMENT WITH ITS INNOVATIVE PRODUCT.....	532-544
Chapter 41 A COMPREHENSIVE INVESTIGATION OF THE STRUCTURAL AND MAGNETIC BEHAVIOR OF CTAB-COATED NiCuZn SPINEL NANO FERRITE.....	545-563
Chapter 42 NANO – TECHNOLOGY.....	564-570
Chapter 43 NANOCELLULOSE: A FASCINATING, MULTIFUNCTIONAL AND SUSTAINABLE BIOMATERIAL.....	571-586



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 18, 2024, IIP Series

ISBN : 978-93-5747-640-9



9 789357 476409