

Tentative Outline

Special Thematic Issue for the journal *Current Nanoscience*

Title of the Thematic Issue

Green Nanomaterials for Clean and Sustainable Environment

Guest Editors: **Ratiram Gomaji Chaudhary, Sami H. Mahmood, Rajshree B. Jotania**

• Scope of the Thematic Issue:

Nanomaterials are highly promising for potential large-scale employment in a wide range of technological, medicinal and pharmaceutical applications. While different approaches have been employed for nanomaterials synthesis, green protocols have received significant attention as they address the clean and sustainable environmental aspects, and offer an opportunity for cost-effective and eco-friendly synthesis routes. Specifically, green biochemical and biogenic approaches are employed for bioremediation of toxic metals, and environmentally benign capping agents for biocompatibility and control of the morphology of the nanomaterials, leading to significant advances in chemical synthesis. The design of systematic approaches to ensure safe, sustainable technology, and effective products supply to customers, and improve the manufacturing quality performances is highly demanded. Hence, this requires collective efforts of researchers in different disciplines toward clean and sustainable environment.

This thematic issue invites reviews and regular articles that address aspects related to novel and green synthesis of nanomaterials for potential applications in biomedical, clinical, catalytic, photocatalytic, solar energy, and safe environmental remediation. This issue focusing on green synthesis of nanomaterials is expected to bridge the gap between scientific disciplines, and gather collective research ideas of scientists working in materials, chemistry, physics, biomedical, environment, and pharmaceutical sciences.

Keywords: Green/Biogenic synthesis; Metal/metal oxide nanoparticles; Carbon-based nanomaterials; Nanofluids; Catalytic/Photocatalytic performances; Nucleic acid nanotechnology; Environmental remediation; Clinical applications.

Sub-topics:

The sub-topics to be covered within the issue should be provided:

- Biogenic synthesis and characterization of metal/metal oxide nanomaterials
- Green synthesis of nanofluids for environmental remediation
- Green synthesis of metal oxides nanoparticles for photocatalytic activities
- Nucleic acid nanotechnology
- Antimicrobial activity of nano-ferrites and composites
- Anti-inflammatory and antioxidant activities of ferrite nanoparticles
- Biogenic nanomaterials for pharmaco-therapeutic perspectives
- Polymeric ferrite and carbon nanotube composites and their applications
- Nanomaterials in environmental sciences

Tentative titles of the articles and list of contributors:

Tentative titles of the articles and list of contributors with their names, designations, addresses, and email addresses should be provided.

1. Recent Trends in Applications of Nanofluids for Effective Utilization of Solar Energy

Parag P. Thakur, Shriram S. Sonawane*, Hussein A Mohammed**

*Nano Research Project Laboratory, Visvesvaraya National Institute of Technology, Nagpur, India; and

**WA School of Mines-Minerals, Energy & Chemical Engineering, Curtin University, WA 6102, Australia

Corresponding authors emails: ssonawane@che.vnit.ac.in and hussain.mohammed@curtin.edu.au

2. Bio-Inspired Chitosan-Based Trimetallic Cu_{0.5}Zn_{0.5}FeO₄ Nanoparticles: Preparation, Characterization and Anti-Cancer Activity

Afnan Al-Hunaiti*, Asma Ghazzy, Tuqa Abu-Thiab, Sharif Arar, Ramzi Saeed, Mutasem Taha, Eman Hwaitat and AmerImraish*

*Department of Chemistry, The University of Jordan, Amman 11942, Jordan

Corresponding authors emails:a.alhunaiti@ju.edu.jo and a.imraish@ju.edu.jo

3. Biogenic Metal/Metal Oxide Nanoparticles: A Road Map to Green Synthesis

PB Chauke, AK Potbhare, R. Jotania, TL Lambat, SR Thakare, DT Masram, RG Chaudhary*, A. Mondal**

*Post Graduate Department of Chemistry, Seth Kesarimal Porwal College of Arts, Science and Commerce, Kamptee-441001(Maharashtra), India, and

**Division of Materials Science, Lulea University of Technology, SE-97187, Sweden

Corresponding authors emails:chaudhary_rati@yahoo.com; and aniruddhacsmcri@gmail.com

4. Dry Deposition above Smooth Surfaces – A Numerical Investigation for the Concentration Boundary Layer

Zaid Bakri, Omar Al Jaghbeir, Tareq Hussein*

*Physics Department, School of Science, The University of Jordan, Amman 11942, Jordan & Institute for Atmospheric and Earth System Research, University of Helsinki, PL 64, FI-00014 UHEL, Helsinki, Finland

Corresponding authors emails:t.hussein@ju.edu.jo

5. Recent Advances in the Pharmaco-therapeutic Perspectives of Phytosynthesized Gold Nanomaterials
Debarshi Kar Mahapatra*, Tomy Muringayil Joseph**

*Department of Pharmaceutical Chemistry, DadasahebBalpande College of Pharmacy, Nagpur, India, and

**Department of Polymer Technology, Chemical Faculty, Gdansk University of Technology, Gdansk, Poland

Corresponding authors emails:dkmbps@gmail.com

6. Zirconium dioxide/mixed oxide nanoparticles as catalysts/Reagents for organic synthesis: A comprehensive update

Pankaj Ledade, Trimurti Lambat, Ratiram Chaudhary, Sajal Das, Subhash Banerjee*, Sami Mahmood**

*Department of Chemistry, Guru GhasidasVishwavidyalaya, Bilaspur, 495009, Chhattisgarh, India, and

**The University of Jordan, Jordan & Michigan State University, USA.

Corresponding authors emails:ocsb2006@gmail.com and s.mahmood@ju.edu.jo

7. A green synthesis method to tune themorphology of CuO and ZnO nanostructures

Juan M. Galdopórpóra, Sofia Municoy, Fátima Ibarra, Virginia Puente, Pablo E. Antezana, Inés Alvarez Echazú, Martín F. Desimone

Universidad de Buenos Aires, Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Instituto de la Química y Metabolismo del Fármaco (IQUIMEFA), Junín 956, Piso 3 (1113), Buenos Aires, Argentina

Corresponding authors' emails:martinfdesimone@gmail.com

8. Quality By Design Approach in Liposomal Formulations: Towards Robust Products Development

Walhan Alshaer*, Hamdi Nsairat, Zainab Lafi, Omar M. Hourani, Abdulfattah Al-Kadash, Alaaldin M. Alkilany**

*Cell Therapy Center, The University of Jordan, Amman 11942, Jordan

**School of Pharmacy, The University of Jordan, Amman 11942, Jordan. a.alkilany@ju.edu.jo

Corresponding authors emails:walhan.alshaer@ju.edu.jo and a.alkilany@ju.edu.jo

9. Electrical and Structural Properties of HDPE/MWCNT/PE-g-MA Nanocomposites Prepared Using Solution Mixing and Hot Compaction Two-Step Approach

Ali Jaffal, Rund Abu-Zuryakand Mahmoud Al-Hussein*

*Physics Department, School of Science, The University of Jordan, Amman 11942, Jordan

Corresponding authors emails:m.alhussein@ju.edu.jo

10. Metal/Metal Oxide Nanomaterials: Green Synthesis, Spectroscopic Characterization and Applications
Anupam Agarwal and N.B. Singh*

*Department of Chemistry, SBSR Sharda University, Knowledge Park-3, Greater Noida 201306, India

Corresponding author email:nbsingh43@gmail.com

11. Nucleic Acid nanotechnology: Opportunities and challenges.

Raghvendra P. Singh, A.K. Srivastava, G.Manchanda, Alok R. Rai, Ying-Jie Yang*, and RC Dubey**

*Department of Botany and Microbiology, Gurukul Kangri University, Haridwar, Uttarakhand-249404, India, and

**Marine Agriculture Research Center, Tobacco Research Institute, Chinese Academy of Agricultural Sciences, Qingdao, Shandong 266101, China

Corresponding authors emails:singh.dr.raghvendra@gmail.com and profrcdubey@gmail.com

12. Graphitic Carbon Nitride Based Nanostructured Photocatalyst for Environmental Remediation of Organic Pollutants

Mayuri S. Umekar, G.S. Bhusari**, V. Devthade, R.G. Chaudhary, B.P. Kapgate, A.P. Potbhare, Ahmed A. Abdala*

*Chemical Engineering Program, Texas A&M University at Qatar, Doha, Qatar, and

**Research and Development Division, Apple Chemie India Private Limited, Nagpur-441108, India

Corresponding authors emails:ahmed.abdala@qatar.tamu.edu and ganesh24bhusari@gmail.com

13. Photocatalytic activity of green synthesized metal oxides: A review

Amol Nande, S.J. Dhoble*, Fuad Ameen**

*Post Graduate Department of Physics, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur-440033, India, and

**Department of Microbiology and Biotechnology, King Saud University, Riyadh, Saudi Arabia

Corresponding authors emails:sjdhoble@gmail.com and fuadameen@ksu.edu.sa

14. Heat Transfer Performance of Nanofluids in Heat Exchanger: A review

Rohinee Barai, D. Kumar, Sangesh Zodape, Aamir R. Sayed, Atul V. Wankhade*, Umesh Pratap*

*Department of Chemistry, Visvesvaraya National Institute of Technology, Nagpur, India

Corresponding authors emails:atulwa2006@yahoo.co.in and umeshprtap@gmail.com

Schedule:

❖ Manuscript Submission Deadline: **August 31, 2021**

❖ Revision Due: **September 30, 2021**

❖ Final manuscript due: **October 31, 2021**

Contacts:

1- Guest Editor Name: Dr. Ratiram Gomaji Chaudhary

Affiliation: Post Graduate Department of Chemistry, S. K. Porwal College, Kamptee, India

Email: chaudhary_rati@yahoo.com; ratswat81@gmail.com

2- Guest Editor: Dr. Sami H. Mahmood

Affiliation: Department of Physics, The University of Jordan, Amman 11942, Jordan

Email: s.mahmood@ju.edu.jo; s.mahmoodju@yahoo.com

3- Guest Editor: Dr. Rajshree B. Jotania

Affiliation: Department of Physics, Electronics and space science, University School of Sciences, Gujarat University, Ahmedbad 380 009, India

Email: rajshree_jotania@yahoo.co.in; rbjotania@gmail.com