

**Proposed title of the thematic issue:** Green Nanomaterials: A Road Map to Safe Nanotechnology

## **Green Nanomaterials: A Road Map to Safe Nanotechnology**

*Guest Editors: Prof. Dr. Ratiram Gomaji Chaudhary and Prof. Dr. N. B. Singh*

### **Abstract:**

Nanotechnology is an interdisciplinary science and developing very fast. Lots of investment is being made but still it could not be commercialized. Due to lack of environmental awareness and government policies and regulations, there is lot of pressure on manufacturers and users of nanomaterials. People are not fully aware of environmental impact of nanomaterials on health. The ultimate goal of any type of development including scientific, technological and economical is for the well being of people and society in general. The society wants new technologies for betterment without any risk to life. Since nanotechnology is based on nanomaterials, therefore scientists are making lot of efforts for safe and clean technology. One of the clean technology is microwave-mediated technique has attracted scientists for green synthesis of nanomaterials. But, this technique also involved the uses of number of chemicals. Therefore, development of eco-friendly nanotechnology is today's requirement to create environmental sustainability by producing nanomaterials and nanoproducts without harming human health and the environment as well. Green technology endow with advancement over conventional techniques as it is a cost effective, environment benign, scaled-up scale synthesis, and no use of high pressure, energy, temperature and toxic chemicals. Indeed, green nanotechnology has gained widespread and popular acceptance in the scientific and business communities. However, awareness is still limited in many sectors. Therefore, there is urgent need to become fully aware with green approach. Nonetheless, there are number methods for the green synthesis of nanomaterials, particularly biogenic method involving microorganism, cells, algae, plants extract and so forth. Unquestionably, this technique is noteworthy because of phytochemicals/biochemical presents in the biogenic extracts played a key role in the manufacturing of nanomaterials giving tuned sizes, shapes and structures. In spite of considerable amount of research work on green route of synthesis of nanomaterials and their applications, people are not fully conversant with latest developments. Thus, there is a need to have all type of information at one platform. The aim of this themed issue is to publish review articles on green nanomaterials focusing on its itinerary to safe nanotechnology. The whole document may generate at one place a theme on Green Nanomaterials: A Road Map to Safe Nanotechnology.

**Proposed date of submission of articles:** 30<sup>th</sup> September, 2021

**Tentative titles of the articles:**

- Green Synthesis: A Land of Complex Nanostructures
- Bioinspired/Phyto-assisted Metal Oxide Nanostructured Materials for Electrochemical Performances
- Green Nanomaterials for Photocatalytic Degradation of Toxic Organic Compounds
- Advanced Characterization of Green Synthesized Nanomaterials
- Current Development of Graphene-Based Polymer Nanocomposites and Its Catalytic/Photocatalytic performances
- Recent Advance Applications of Green Synthesized Nanoparticles Based on Nanofluids for the Environmental Remediation
- Microbial Secretome Mediated Nanotechnology: An Antibacterial Strategies for Future
- Water Purification by Green Synthesized Nanomaterials
- Green Polymer Nanocomposites in Automotive Industry and packaging industries and packaging industries and packaging industries
- Biogenic Synthesized Nanomaterials for Biological Applications
- Recent Progress in Biomedical, Agriculture, and Energy Applications of Biogenic Nanomaterials
- Green Synthesized Nanomaterials in different Sectors for Safe Developments

**List of contributors:**

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0 1	Green Synthesis: A Land of Complex Nanostructures	Re vie w arti cle	Dr. Pablo Luis Santo Orihuela	Prof. Martín F. Desimone	<a href="mailto:martinfdesimone@gmail.com">martinfdesimone@gmail.com</a>	Univer sidad de Buenos Aires, Consejo Nacional de Investigaciones Científicas y Técnicas, Instituto de la Química y Metabolismo del Fármaco	91	170 6	26	101

						(IQUIME FA), Facultad de Farmacia y Bioquímica Junín 956, Piso 3 (1113), Buenos Aires, Argentina				
02	Bioinspired/Phyto-assisted Metal Oxide Nanostructured Materials for Electrochemical Performances	Review article	Dr. Ganesh S. Bhusari	Prof. Sami Mahmood, & Dr. Anirudha Mondal	<a href="mailto:s.mahmood@ju.edu.jo">s.mahmood@ju.edu.jo</a>	Michigan State University, East Lansing, MI 48824, USA & Luleå University of Technology, Sweden	105	1932	23	131

03	Green Nanomaterials for Photocatalytic Degradation of Toxic Organic Compounds	Review article	Dr. Saika Ahmed	Prof. Md. Abu Bin Hasan Susan	<a href="mailto:susan@du.ac.bd">susan@du.ac.bd</a>	Department of Chemistry, Faculty of Science, University of Dhaka, Dhaka 1000, Bangladesh	201	9151	25	1657
04	Advanced Characterization of Green Synthesized Nanomaterials	Review article	Prof. Dr. Laxman Singh	Prof. N.B. Singh	<a href="mailto:singna@umbc.edu">singna@umbc.edu</a>	University of Maryland, Baltimore County, USA	155	10556	27	2531
05	Current Development of Graphene-Based Polymer Nanocomposites and Its Catalytic/Photocatalytic performances	Review article	Dr. Ajay K. Potbhare	Prof. Ahmed A. Abdala	<a href="mailto:chaudhary_rati@yahoo.com">chaudhary_rati@yahoo.com</a>	Chemical Engineering Program, Texas A and M University at Qatar POB	118	14465	35	3642

						23784, Doha, Qatar				
06	Recent Advance Applications of Green Synthesized Nanoparticles Based on Nanofluids for the Environmental Remediation	Review article	Dr. ManjakupamMalika	Prof. Hussein A. Mohammed	<a href="mailto:hussein.mohamed@curtin.edu.au">hussein.mohamed@curtin.edu.au</a>	Curtin University, Perth, Australia	145	847	50	1576
07	Microbial Secretome Mediated Nanotechnology: An Antibacterial Strategies for Future	Review article	Dr. Raghendra Pratap Singh	Prof. Yue Zhong Li	<a href="mailto:lilab@sdu.edu.cn">lilab@sdu.edu.cn</a>	State Key Laboratory of Microbial Technology, Shandong University, Jinan, China	121	175	25	151

08	Water Purification by Green Synthesized Nanomaterials	Review article	Dr. Anindita De	Dr. Sumit Barthwal	<a href="mailto:nbsingh43@gmail.com">nbsingh43@gmail.com</a>	Kookmin University, Seoul, South Korea	86	359	11	126
09	Green Polymer Nanocomposites in Automotive Industry and packaging industries	Review article	Dr. Md. Harun-Ur-Rashid	Md. Abu Bin Hasan Susan	<a href="mailto:susan@du.ac.bd">susan@du.ac.bd</a>	Department of Chemistry, Faculty of Science, University of Dhaka, Dhaka 1000, Bangladesh	201	9151	25	1657
10	Biogenic Synthesized Nanomaterials for Biological Applications	Review article	Prof. C.B. Bhaskar	Prof. Sanjay Thakare	<a href="mailto:sanjaythakareisc@gmail.com">sanjaythakareisc@gmail.com</a>	Forensic Science, Institute of Science, Nagpur, India	110	675	15	79
11	Recent Progress in Biomedical, Agriculture, and Energy Applications of Biogenic Nanomaterials	Review article	Prof. W. B. Gurnule	Prof. Pankaj Koinkar	<a href="mailto:koinkar@tokushima-u.ac.jp">koinkar@tokushima-u.ac.jp</a>	Tokushima University, Minamiosanjin-a-cho,	95	1024	15	85

						Tokushima, 770-8506, <b>Japan</b>				
<b>1</b>	<b>Green Synthesized Nanomaterials in different</b>	<b>Re</b>	<b>Prof. RG</b>	<b>Prof.</b>	<a href="mailto:nbsingh43@gmail.com">nbsingh43@gmail.com</a>	Departm	<b>188</b>	<b>590</b>	<b>35</b>	<b>408</b>
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