

**Carbon based catalytic nanostructured materials**

*Section Editor: Dr. Tushar Kanti Das*

• **Scope of the Thematic Issue:**

The development of the most advanced level of catalyst will perform an important role in the field of material materials science and engineering for efficient energy conversion and storage. The development of the catalyst should be done in such a way that will reduce the cost as well as increase the activity. The emerging carbon based catalytic nanostructured materials have come in the light as an alternative of the conventional used catalysts. Carbon is the unique material which has different allotropic form with various physicochemical properties. Due to this fact, carbon science is still now a very specialized field, considered by many to be too complicated for many years. The ease of tuning of its characteristic properties such as porosity, surface chemistry, electronic structure, shape and sizes make them attractive in the field of catalysis science and technology.

**Keywords:**

Catalyst, nanostructured materials, carbon, porosity, surface chemistry, electronic structure, shape, sizes.

**Sub-topics:**

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

- Nanostructure
- Catalytic Reaction
- Carbon based Nano composites
- Catalytic Hydrogenation Reaction,
- Catalytic Oxidation Reactions,
- Catalytic Cracking Reactions,
- Catalytic Isomerization,
- Catalytic Fenton oxidation reaction,
- Photo catalysis
- Well-known catalytic enhanced reactions.

**Tentative titles of the articles:**

1. Carbon-Dots-Initiated Photopolymerization: An In Situ Synthetic Approach for MXene/Poly(norepinephrine)/Copper Hybrid and its Application for Mitigating Water Pollution.
2. Mechanistic Aspects of the Palladium-Catalyzed Suzuki-Miyaura Cross-Coupling Reaction.
3. Improved photocatalytic and antibacterial performance of Cr doped TiO<sub>2</sub> nanoparticles.
4. Nanowires as a versatile catalytic platform for facilitating chemical transformations.
5. Synthesis of bimetallic Co–Pt/cellulose nanocomposites for catalytic reduction of p-nitrophenol.
6. Near-infrared photocatalyst based on TiO<sub>2</sub>-coated gold nanoparticles. Key development for infrared spectroscopy devices: review paper.
7. Influence of bimetallic characteristics on the performance of MoCoP and MoFeP catalysts for methyl laurate hydrodeoxygenation.
8. Recent advances in functionalized carbon dots toward the design of efficient materials for sensing and catalysis applications.
9. Photocatalytic TiO<sub>2</sub> nanomaterials as potential antimicrobial and antiviral agents: Scope against blocking the SARS-COV-2 spread.
10. Green chemistry by nano-catalysis.

#### **Schedule:**

Thematic issue submission deadline: 31st August 2022

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