Dynamic Nanocatalysis
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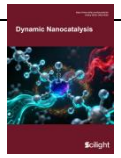

Editorial

Future Outlook of Dynamic Nanocatalysis

Jian-Wen Shi

State Key Laboratory of Electrical Insulation and Power Equipment, School of Electrical Engineering, Xi'an Jiaotong University, Xi'an 710049, China; jianwen.shi@mail.xjtu.edu.cn

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1. Introduction

It is with immense pleasure that we announce the launch of *Dynamic Nanocatalysis*, a new journal dedicated to capturing the vibrant and evolving heart of catalytic science. For centuries, catalysis has been the cornerstone of chemical transformations, yet our traditional view of catalysts as static entities is being fundamentally rewritten. The frontier of research is now defined by dynamics—the understanding that catalysts are living systems that undergo complex structural evolution, reconstruction, and self-adaptation under operating conditions. *Dynamic Nanocatalysis* is founded to be the premier platform for this paradigm shift, providing a home for pioneering research that explores and exploits the dynamic nature of catalytic systems.

2. Aim and Scope

The scope of *Dynamic Nanocatalysis* is intentionally interdisciplinary, bridging the fields of materials science, chemical engineering, energy, and environmental science. We are committed to publishing high-quality research that illuminates the transient behaviors and structural metamorphoses of catalysts, moving beyond static "before-and-after" snapshots to capture the real-time movie of catalytic action.

Our journal will focus on, but not be limited to, the following key areas:

Dynamic Catalytic Mechanisms: Unraveling the structural reconstruction of catalysts under reaction conditions and the dynamic evolution of active sites, such as single-atom migration and cluster dissociation/reassembly.

In-situ and Operando Characterization: Harnessing advanced techniques like in-situ electron microscopy, synchrotron radiation, and ultrafast spectroscopy to probe catalytic processes as they happen.

Theoretical and Computational Simulations: Integrating machine learning, multi-scale modeling, and other computational approaches to predict dynamic behaviors and construct accurate structure-performance relationships.

Intelligent Responsive Materials: Designing the next generation of nanocatalysts that are responsive to light, heat, or magnetic fields, including self-healing catalytic materials and sophisticated biomimetic systems.

Interdisciplinary Applications: Showcasing how dynamic catalysis provides solutions in energy (e.g., dynamic water splitting, catalysis for advanced batteries) and the environment (e.g., real-time pollutant degradation, recyclable catalytic membranes).

3. Outlook

A venture of this ambition relies on a community of dedicated experts. I extend my deepest gratitude to the distinguished members of our editorial board, who have generously agreed to lend their profound expertise to this endeavor. Their commitment ensures that every submission to *Dynamic Nanocatalysis* undergoes a rigorous and fair peer-review process, upholding the highest standards of scientific excellence.

Finally, I wish to express my unwavering confidence that, together with our authors, reviewers, editorial board, and the publishing team, we will propel *Dynamic Nanocatalysis* to the forefront of scientific publishing. We welcome submissions from colleagues across chemistry, physics, materials science, engineering, and beyond. Let us work collectively to illuminate the dynamic dance of atoms and molecules that powers our world, fostering a deeper understanding and enabling a more sustainable future.

Conflicts of Interest

The authors declare no conflict of interest.

Use of AI and AI-Assisted Technologies

No AI tools were utilized for this paper.