FEMS EUROMAT 23

03 - 07 Sep 2023 (Frankfurt am Main)

euromat2023.com

FEMS EUROMAT is the most important international congress in materials science and technology in Europe. It continues a successful congress series promoting the transfer of knowledge and the exchange of experience between academia and industry. **Extended submission deadline: 15 March 2023**

Area A: Functional Materials

A05: Functional Catalytic and Nanoporous Materials

This symposium encompasses various topics related to nanoporous materials and heterogeneous catalysis, including thermal-, photo-, and electro-catalysis. Recent developments have shown the importance and urgency of obtaining value-added chemicals in a sustainable way. Catalytic and porous materials have an immense potential for current and future industrial applications, including, but not limited to, synthesis of value-added chemicals, energy storage, purification and separation technologies, and energy conversion. For instance, the ability to harness sunlight to convert abundant materials, such as water and CO2, into useful chemicals and fuels has the potential to revolutionize the field of green chemistry and pave the way toward a more sustainable society. In addition, nitrogen activation via sustainable and efficient alternative routes could drive one of the world's most energy-intensive reactions, ammonia formation.

Nanoporous and/or catalytic materials, such as novel carbon-nitride/nanocarbons, inorganic, organic materials, organic-inorganic hybrids, quantum dots, and 2D heterostructures, offer large surface areas, tunable pore structures, and surface functionalities, as well as multivariant chemical/electronic framework properties. Such materials show excellent potential to be used as thermally stable catalyst supports, hosts for drug delivery, flexible membranes for separation and storage, functional compounds in electronics, and (photo-electro-)catalysts.".

This symposium aims to discuss state of the art in research in this multidisciplinary field of functional catalytic and nanoporous materials and their applications. It will highlight recent developments in new material design strategies and understanding of fundamental concepts, as well as new experimental and theoretical mechanistic insights into reactant diffusion and adsorption, charge separation/transfer, and reaction steps and pathways.

Targeted topics include, but are not limited to:

- Emerging materials for catalysis (e.g., MOFs, COFs, perovskites, and 2D heterostructures)
- Novel design strategies for hierarchical/synergistic composites
- Sustainable catalytic reactions involving nitrogen, carbon dioxide, methane, water, and organics
- Environmental applications (e.g., separation, purification, and photocatalytic degradation)
- In-situ/operando methods and mechanistic studies (structure-property relationship) in catalysis
- Light-driven production of feedstocks and fuels (e.g., photocatalysis, photoelectrochemistry, photothermal catalysis)
- Interfacial charge dynamics studies
- Electrocatalysis (e.g., membranes, electrolyzers, and non-noble metal catalysis)
- Heterogeneous catalysis (e.g., thermal catalysis, hydrogenation, and reforming)

Symposium Organizer


Dr. Teresa Andreu Arbella
University of Barcelona


Dr. Dogukan H. Apaydin
TU Wien


Dr. Salvador Eslava
Imperial College London


Ass.-Prof. Ph.D. Robert Woodward
University of Vienna

DGM