



# ISMaS 2023

## INTERNATIONAL SYMPOSIUM ON MATERIAL SCIENCES

### May 30 to June 01 2023

The Scientific Committee and Organizing Committee of the International Symposium on Materials Science ISMaS 2023 invite you to participate in the course:

## Fundamentals of heterogeneous catalysis

**Professor:** Francisco García García, Senior Lecturer in the School of Engineering at the University of Edinburgh, United Kingdom.

### • TOPICS

- Most important industrial heterogeneous catalytic processes: fossil fuel reforming, ammonia synthesis, methanol synthesis, Fischer–Tropsch process, and fluid catalytic cracking.
- Current ammonia, methanol, and hydrogen economies.
- Brief history of emission control catalysis.
- Key role of catalysis in today's energy, emission control, and chemical production challenges.
- Fundamentals of heterogeneous catalysis.
- Metallic bonding, primary metallic crystalline structures, and orientation of a surface or a crystal plane.
- Surface restructuring behaviours: surface relaxation, surface reconstruction, sintering, and adsorption.
- Concept of the catalytic surface, catalytic activity and selectivity.
- Structure and crystalline phase dependent catalytic reactions, the role of both support and promotor.
- Main reasons for catalyst deactivation: crystal phase change, sintering, active phase lost, poisoning, and coke formation.

If you are interested in participating, please write to the Chairman of the Scientific Committee, e-mail: [ogz@imre.uh.cu](mailto:ogz@imre.uh.cu), indicating in the subject of the message Minicurso Catálisis. In the body of the message indicate: full name, institution and contact telephone number.