

International School on "Advances in Medium and High Temperature Solid Oxide Fuel Cells Technology"

Organized by The International Centre for Mechanical Sciences (CISM, Palazzo del Torso, Piazza Garibaldi 18, 33100 Udine (Italy)) under the auspices of University of Udine

Coordinated by Dr. Marta Boaro (University of Udine (Italy)) and Dr. Antonino Aricò (CNR ITAE, Messina (Italy)).

The course will cover the fundamentals of solid oxide fuel cells exposing students to relevant topics in materials science, thermodynamics, and fluid mechanics. The final aim is of highlighting cutting-edge research priorities and discussing the state of the art developments in this field.

Contents will be divided in two main sections:

1. Fuel Cell Fundamentals and Materials (solid-state electrochemistry, diagnostic techniques, properties and challenges of the cell components);
2. System Design and Applications (stack designs, system concepts and balance of plant components).

In class, students will also learn the principle of mathematical modeling addressed to FC systems and processes optimization.

The school will draw on the knowledge and expertise of a group of internationally renowned scientists currently working at the leading edge of fuel cell R&D at Universities and FC enterprises.

Lecturers:

1. **Robert Steinberger-Wilckens**, (United Kingdom): SOFCs fundamentals. Thermodynamics and kinetics of SOFCs; status of fuel cell technology worldwide.
2. **Mogens Mogensen**, (Denmark): fuel cell electrochemistry, electrocatalysis, diagnostics and durability tests.
3. **Panagiotis Tsiakaras**, (Grece): Materials in SOFCs.
4. **Raymond Gorte**, (USA): Catalytic aspects of SOFC anodes. Advances in SOFC technology.
5. **Subhash C. Singhal**, (USA): SOFCs processing issues. Stacks operating conditions. Tubular and planar geometries.
6. **Massimo Santarelli**, (Italy): Fuel cells plants. Introduction to modeling.

The course is dedicated to MSc-students, PhD-students, and Post-Doctorate researchers of Chemistry, Physics, Chemical Engineering, Electrical Engineering as well as for experienced researchers wishing to review their background and to expand the knowledge on the application of this technology. The workshop is also aimed at researchers operating in the field of science and engineering whose expertise lies in other fields and are looking to enter the sector of fuel cells.

Please, refer to the web site <http://www.cism.it/courses/A1401/> [1] for registration and further information.

Correlated events are a workshop on "Fundamentals and Applications of Ceria in Catalysis", held in the same location during the previous week-end (Udine, Palazzo del Torso, July 11th-14th) .

Looking forward to seeing you in Udine

Dr. Marta Boaro - University of Udine (Italy)

Dr. Antonino Aricò - CNR ITAE, Messina (Italy)

Informazioni **Organizzazione**: International Centre for Mechanical Sciences (CISM) under the auspices of University of Udine

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Link scuola: [Sito web della Scuola](#) [1]

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Links:

[1] <http://www.cism.it/courses/A1401/>
