

Organising committee:

Prof. Robert Steinberger-Wilckens, U Birmingham
Prof. Jens Oluf Jensen, DTU Energy
Prof. Rüdiger-A. Eichel, FZ Jülich GmbH

Scope and target:

The two week are conducted as individual courses and participants can select:

Week 1 is a comprehensive introduction aimed at graduate and PhD students and young professionals within the fields of fuel cells, electrolysis, hydrogen technology and batteries.

Week 2 is an advanced course for students and professionals with a few years of experience in the field.

All the lectures will be presented by highly acclaimed experts within the research fields from various universities, research centres, and industry with long-standing experience in teaching. A complete list will be published with the final programme early in 2017.

A selection of **confirmed lecturers 2017**:

Prof Vladimir Molkov, University of Ulster
(hydrogen safety)
Prof Ferdinand Panik, University of Esslingen, and
Prof Thomas von Unwerth, University of Chemnitz
(fuel cell vehicles)
Dr Birgit Thoben (business development)
Emanuela Vartolomei, AllStreet (finance)
Dr Murat Peksen, Multiphysics Energy Solutions
(modelling)

Lecture language:

English. Slides and information will be available via a secure download area on the JESS website.

Participation fees:

1.340,- € per course and person

This covers accommodation in single room (double room occupancy = 1.140,- € per person), including all tuition fees and taxes, as well as:

- full board for six nights,
- coffee breaks,
- a banquet on the Friday, and
- an excursion on the Wednesday.

An Early Bird discount of 150,- € applies until incl. 30 April 2017.

Accompanying persons (in same double room) pay 550 € including of the above.

For updates and information, please go to our web site:

<http://www.jes-school.eu>

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Joint European Summer School on Fuel Cell, Electrolyser, and Battery Technologies

JESS 2017

*11 – 15 September 2017
(Introductory Courses)*

and

*18 – 22 September 2017
(Advanced Courses)*

Vougliameni, Athens, Greece



First Announcement

The Joint European Summer School, JESS 2017, will be held in Vouliagmeni near the beautiful city of Athens on the coast of the Aegean Sea. Once again, it will provide highly condensed high level courses on selected topics.

Week 1 of the Summer School focuses on:

Introduction to Fuel Cell, Electrolyser, and Battery Technologies Starting from the fundamental principles of electrochemistry and thermodynamics the entire spectrum of materials, design and balance of plant will be covered both from an engineering point of view as well as from a modelling perspective. The technological courses will be augmented by more general lectures on various aspects of the technology. Plenary lectures will be followed by three tracks: (1) Solid oxide cells fuel cells and electrolyzers, (2) low temperature fuel cells and electrolyzers, and (3) batteries.

Week 2 of the Summer School focuses on:

Fuel Cell Vehicle Technology, Business Development, Hydrogen Safety, and a Modelling Master Class. This addresses students with one or two years of experience in fuel cell and hydrogen research. The Master Class will offer insight into modelling approaches before giving the students room to discuss their own projects. The other courses offer students with a background in the basic technology further insights into developing businesses, protecting know-how, safely handling hydrogen, and the engineering and design of fuel cell vehicles.

In addition to the lectures, the participants will be asked to join in student projects, applying the course content to case studies to be presented at the end of the week.

Tentative Programme Schedule

Week 1:

<i>Introduction to Electrochemistry and Thermodynamics Introduction to Solid State Chemistry and Ionics</i>		
<i>Introduction to SOFC / SOE</i>	<i>Introduction to LT Fuel Cells & Electrolysers</i>	<i>Introduction to Batteries</i>
<ul style="list-style-type: none"> • electrolyte materials • anode materials • cathode materials • cell and stack designs • manufacturing • characterisation • modelling • degradation • system technology 	<ul style="list-style-type: none"> • electrolyte materials • anode materials • cathode materials • cell and stack designs • manufacturing • characterisation • modelling • degradation • system technology 	<ul style="list-style-type: none"> • electrolyte, anode, cathode materials • cell and stack designs • manufacturing • characterisation • modelling • degradation • system technology • beyond Lithium • metal-air batteries • all solid state batteries
<ul style="list-style-type: none"> • power to gas, power to fuel 		

Week 2:

<i>Fuel Cell Vehicles</i>	<i>Business Development</i>	<i>Modelling Master Class</i>	<i>Hydrogen Safety</i>
<ul style="list-style-type: none"> • vehicle design • hybrid vehicles • electric drivetrains • vehicle batteries • life cycle and emissions • market introduction 	<ul style="list-style-type: none"> • spinning out a fuel cell/ hydrogen business • financing a business • intellectual property protection • ideation, creativity 	<ul style="list-style-type: none"> • 0D, 1D, 2D/3D modelling approaches and software • multi-physics modeling • student project presentations 	<ul style="list-style-type: none"> • introduction to hydrogen safety • hydrogen fires • hydrogen explosions • incident handling • incident prevention