

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

JESS 2024

16 – 20 September 2024

*(Introductory Modules
and
Advanced Modules)
Athens, Greece*



Basic Information

Participation fees:

2.100,- € per person,
Early Bird rate **until 31.03.2024** 1.850,- € per person.
Double room occupancy is 1.850,- € per person standard
rate, and Early Bird rate € 1.600,-

This fee includes all tuition, as well as:

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

Accompanying persons (in same double room, not
attending lectures) pay 850 € including all of the above.

The local tourist tax will be payable at the hotel.

Please register by 31 July 2024 to secure your place on
the School (cut-off date).

For regular updates and information, please go to our
web site: <https://www.jess-summerschool.eu>

For registration, mail manuela@panhellas.gr

Contact for all other enquiries:

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JESS is organised by:



If you want to sponsor this event, please contact
Prof Steinberger-Wilckens.

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 Joint European Summer School (JESS in short) dates
back to 2004 when the first Summer School was
organized in Greece. By now, 20 events have been
successfully organised with over 1.000 students
attending.

From six parallel modules the participants make their
course choice:

The week offers three comprehensive introductions
aimed at graduate and PhD students and young
professionals within the fields of low and high
temperature fuel cells & electrolysis, and in battery
technology.

In addition, three advanced modules for students and
professionals with a few years of experience are offered.
They cover the fields of Fuel Cell Electric Vehicles,
Innovation Management & Business Development, and
Hydrogen Safety.

All lectures will be presented by highly acclaimed experts
from universities, research centres, and industry with
long-standing experience in teaching. All details of the
courses and information on lecturers can be found on
the JESS website.

The Introductory modules are accredited at DTU, RWTH
Aachen, and University of Birmingham. The Advanced
modules at University of Birmingham only. Upon
successfully taking the optional final exams, students will
receive 3 ECTS credit points for their course.
5 ECTS points will be attributed if additional homework is
completed (via University of Birmingham).

Lecture language: English.

Slides and information will be available to participants
via a dropbox folder during and after the Summer
School.



The 21st edition of the Joint European Summer School – JESS2024 - will again take place close to the beautiful city of Athens on the coast of the Aegean Sea.

It will provide six high level modules on selected topics in fuel cell, electrolyser, battery and related technologies.

JESS addresses newcomers to the field, graduate students, and young professionals working at the forefront of electrical energy and hydrogen technologies.

Summer School will include six parallel modules:

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 a scientific and an engineering point of view. The courses will be augmented by more general lectures on various aspects of the technology.

The Advanced Modules address students with one or two years of experience. The three parallel courses include: The **FCEV** module, offering insight into design and technology of fuel cell driven vehicles to students with a background in the basic technology. The **IMBD** module, run by senior innovation management and entrepreneurship lecturers. The **H₂ Safety** module, introducing the issues encountered in hydrogen handling. The IMBD and H₂ Safety modules will also be available in an online, hybrid format.

All lecturers are highly experienced and include senior researchers from the fields of fuel cell, electrolyser, battery, and hydrogen research.

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.

Programme Schedule

JESS offers six independent course modules, as shown below.

During registration, students choose the specific course module they want to attend.

Introduction Modules:

<i>Introduction to Electrochemistry and Thermodynamics</i> <i>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"> • <i>materials: electrolytes & electrodes</i> • <i>cell and stack design</i> • <i>stack materials</i> • <i>manufacturing</i> • <i>characterisation</i> • <i>degradation</i> • <i>system technology</i> 	<ul style="list-style-type: none"> • <i>materials: electrolytes & electrodes</i> • <i>cell and stack design</i> • <i>manufacturing</i> • <i>characterisation</i> • <i>degradation</i> • <i>system technology</i> 	<ul style="list-style-type: none"> • <i>materials: electrolytes & electrodes</i> • <i>cell and stack designs</i> • <i>manufacturing</i> • <i>characterisation</i> • <i>modelling</i> • <i>degradation</i> • <i>system technology</i> • <i>beyond Lithium</i> • <i>metal-air & solid state batteries</i>
<ul style="list-style-type: none"> • <i>power to gas, power to fuel</i> 		

Advanced Modules:

<i>Fuel Cell Electric Vehicles</i>	<i>Innovation Management & Business Development</i>	<i>Hydrogen Safety</i>
<ul style="list-style-type: none"> • <i>vehicle design</i> • <i>hybrid vehicles</i> • <i>electric drivetrains</i> • <i>vehicle batteries</i> • <i>life cycle and emissions</i> • <i>market introduction</i> 	<ul style="list-style-type: none"> • <i>spinning out an innovative business</i> • <i>financing a business</i> • <i>intellectual property protection</i> • <i>ideation, creativity, and innovation</i> 	<ul style="list-style-type: none"> • <i>introduction to hydrogen safety</i> • <i>hydrogen storage</i> • <i>materials and hydrogen</i> • <i>incident handling</i> • <i>incident prevention</i> • <i>standards</i>