





# Joint European Summer School on Fuel Cell, Electrolyser, and Battery Technologies *JESS 2017*

# Fuel Cell Electric Vehicles

18 – 22 September 2017 Hotel Amarilia, Vouliagmeni, Athens, Greece



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The **2nd week** of the Joint European Summer School JESS 2017 brings high quality graduate level courses on selected topics of vehicle technology, innovation & business development, safe handling of hydrogen, and modelling. This series of summer schools has been ongoing since 2004 and targets an audience of **university students (MSc and PhD levels)** and **post-doctoral researchers**. We also welcome **more experienced researchers and engineers** wishing to expand their general knowledge, for instance, to suit a newly acquired position or collect credits for Continuous Professional Development (CPD). The course content is tailored to the needs of a diverse audience: newcomers to the field, experienced students, and young professionals working at the forefront of fuel cell and hydrogen applications.

The courses are accredited at the University of Birmingham and each carry 3 ECTS points.

The previous week (Week 1) will offer three introductory courses to high and low temperature fuel cells and electrolysers, and battery technology (please refer to the separate programme). The two weeks are conducted independently of each other and students can choose the courses most appropriate to their studies.

### The Fuel Cell Electric Vehicle module

offers a combination of theory and student exercises: from how to chose electric and fuel cell drive train components to history and future of fuel cell vehicle development. The FCEV module aims at students already involved in fuel cell and electrochemical device studies. It will provide them with insight into the basic science and engineering behind FCEV design and explain the technology choices, state of the art, and also the history of FCEV development.

Content will be delivered in lectures, exercises, discussions and Q&A sessions. Topics covered include all aspects of hybrid fuel cell electric drives, amongst others:

- hybrid drivetrain engineering, fuel cells and batteries,
- drive train components,
- vehicle concepts and lightweight construction,
- environmental impact of FCEV, up to
- history and future of FCEV.

The module will be found useful both by students involved in the fuel cell & hydrogen field itself, for instance working on a PhD in the area, but also other students and employees who have recently got involved in electric vehicle engineering. It addresses PhD students with advanced knowledge and projects in engineering (fuel cells, hydrogen, electrochemistry etc.) wishing to develop their professional skills, as well as graduates already working in industry and wanting to add elements to their professional training, for instance in the context of a continuous professional development scheme.

The module draws on the knowledge and expertise of a carefully selected group of lecturers with a vast body of expertise from leading research units in automotive engineering and associated to universities and industry:

Prof Ferdinand Panik	University of Esslingen, Germany
Prof Thomas von Unwerth	University of Chemnitz, Germany
Prof John Jostins	MicroCab and Coventry University, UK

You can find brief CV's of the lecturers, programme updates, and information on past events on the JESS web site: <u>http://www.jess-summerschool.eu/JESS-2017</u> as well as the general brochures for JESS 2017.

JESS 2017		Fuel Cell Electric Vehicles	tentative programme
		P plenary lectures (all students) St student presentations	last changed 26/03/17
		V specialised lectures	
Sunday	17/09/2017		
	20:30	welcome dinner	
Manday	40/00/2047		
wonday	18/09/2017		
	08:30	Welcome and General Introduction	Robert Steinberger-Wilckens (U Bham)
P.01	09:00	Sustainable and Renewable Energy Future	Robert Steinberger-Wilckens (U Bham)
	09:45	coffee break	
P.02	10:00	Introduction to Fuel Cell Vehicles & Markets	Ferdinand Panik (U Esslingen)
P 03	11:15	break Introduction to Hydrogen Safety	Vladimir Molkov (Ulster University)
1.00	13:00	lunch	
V.01	16:00	Status of FC Passenger Cars & Buses	Ferdinand Panik (U Esslingen)
P 04	17:30	Coffee Dreak Safety when working on ECV's	Vincent Mattelaer (Toyota Europe)
P.05	19:30	Introduction to the Students' Project	Robert Steinberger-Wilckens (U Bham)
	19:45	welcome reception (bar)	c ( )
0.01	20:15	dinner	
St.01	21:15	Students' Presentations I	students
Tuesdav	19/09/2017		
2			
V.02	08:30	Designing and Building Hydrogen Fuel Cell Vehicles	Thomas von Unwerth (U Chemnitz)
V 02	09:45	coffee break	John Jostins (MicroCoh)
V.03	11:15	break	John Jostins (Microcab)
V.04	11:30	Vehicle Fuel Cells & Fuel Cell Systems	Ferdinand Panik (U Esslingen)
	13:00	lunch	
V 05	16:00	Drive Train Components (1)	Thomas you Unworth (U Champitz)
v.05	17:15	coffee break	momas von onwertin (o cheminiz)
P.06	17:30	Developing Fuel Cell Businesses	James Wilkie (U Bham)
_	18:15	break	
St.02	18:30	Students' Presentations II	students
	20:00	dimer	
Wednesday	21/09/2016		
5.45			
P.07	08:30	Mirai product knowledge	Vincent Mattelaer (Toyota Europe)
V.06	10:00	Vehicle Batteries	Robert Steinberger-Wilckens (U Bham)
	11:15	break	
V.07	11:30	Exercise 1	John Jostins (MicroCab)
	13:00	lunch	
	15:00	excursion	
	21:00	dinner	
Thursday	22/09/2016		
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V.08	08:30	Hybrid Vehicle Drive Trains	John Jostins (MicroCab)
V/ 00	09:45	coffee break	There are the user the (11 Charmeiter)
V.09	11.15	break	momas von onwertin (o cheminitz)
V.10	11:30	Drive Train Components (3)	Thomas von Unwerth (U Chemnitz)
	13:00	lunch	
V/ 11	16.00	Evercise 2	Thomas yon Unwerth (U Chempitz)
V.11	17:00	coffee break	momas von onwertin (o cheminiz)
V.12	17:15	FCV System Analysis WTW, TCO, LCA	Ferdinand Panik (U Esslingen)
0.00	18:30	break	
St.03	18:45	Student project time	students
	20.00		
Friday	23/09/2016	i	
V 12	08.20	Evereine 2	Fordinand Danik (LL Faalingan)
V.13	08.30	coffee break	Ferdinand Fanik (O Essingen)
V.14	10:00	Outlook & Scenarios	John Jostins (MicroCab)
	11:15	break	
St.04	11:30	Student project time	students
	13:00	iuncii	
St.05	16:00	ECTS Exam (optional)	
<b>0</b> : <b>0</b> -	17:00	coffee break	
St.06	17:15	Students' projects presentations	James Wilkie (U Bham)
P.08	18:45	Farewell	Robert Steinberger-Wilckens (U Bham)
	20:30	gala dinner	ger menere (o brian)
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Joint European Summer School on Fuel Cell, Electrolyser, and Battery Technologies – Registration Form

Fuel Cells Electric Vehicles	
Innovative Technology Business Development	
Hydrogen Safety	
The Modelling Master Class	

Hotel Amarila (http://www.amarilia.gr) 17 – 23 September 2017, Vouliagmeni (Athens), Greece

# Deadline for registration: 31 August 2017

Title			
First name			
Last name			
Gender	Male   Female		
University/Institution/Company Name			
Street / P.O. Box			
Postal code			
Town/City			
Country			
V.A.T. number (if applicable)			
Phone			
E-mail :			
Athens arrival date and time (optional)			
Athens departure date and time			
Please note any special dietary re-			
<u>quirements</u> , disabilities etc. that we may			
need to know about			
standard rate (all rates incl. Greek VAT)	The registration fee covers tuition fees,		
□ single room 1.340 €	accommodation for six nights, full board (meals		
☐ double room 1.150 € per person	week banguet, and the excursion.		
Shared with:			
□ accompanying person (no lectures, shared room) 550 €, name:			

Place & date ...... Signature .....

## PLEASE RETURN BY E-MAIL OR FAX TO

Mrs Manuela Drape-Stathoglou

manuela@panhellas.gr, Fax: +30 2810 300848

### Or follow the registration link on the Summer School web site

http://www.jess-summerschool.eu/JESS-2017

You will then receive a confirmation and an invoice for the registration fee.