1st *Joint European Summer School on Fuel Cell and Hydrogen Technology*

Courses:

- **A Primer on Hydrogen and Fuel Cell Technology**
- **Introduction to Solid Oxide Fuel Cell Technology**
- **Introduction to Low Temperature Fuel Cell Technology**
- **Solid Oxide Fuel Cell Design and Modelling**

22nd August – 2nd September 2011
Viterbo, Italy

TrainHy

HyFC
HYDROGEN AND FUEL CELL ACADEMY

JÜLICH
FORSCHUNGSZENTRUM

INTRODUCTION

The First Joint European Summer School on Fuel Cell and Hydrogen Technology shall be held in Viterbo, Italy, from 22 August to 02 September 2011.

Following the successful pattern of summer schools carried out by the HySafe Consortium, the EU Integrated Projects Real-SOFC and LargeSOFC and the European Summer School on Hydrogen Safety, the European Commission has decided to continue its support to this work.

Co-funding is now provided under the TrainHy-Project via the Fuel Cell and Hydrogen Joint Undertaking (FCH JU) which is a joint agency of the European Commission and European Industry and Research Groups in this respective field. Thereupon the University of Ulster (United Kingdom), Risø National Laboratory/Denmark Technical University (Denmark) and the Forschungszentrum Jülich (Germany) teamed up with Heliocentris (Germany) to form the TrainHy Consortium. The TrainHy Consortium will organise the Joint European Summer School on Fuel Cell and Hydrogen Technology. This Summer School shall be offered annually, starting in 2011.

The Joint European Summer School on Fuel Cell and Hydrogen Technology will now take a broader approach and address topics from the whole field of low and high temperature fuel cells as well as hydrogen technology and safety. The Summer School consist of four separate courses, namely,

- **A Primer on Hydrogen and Fuel Cell Technology, 21 August - 27 August 2011**
- **An Introduction to Solid Oxide Fuel Cell Technology, 21 August - 27 August 2011**
- **An Introduction to Low Temperature Fuel Cell Technology, 28 August - 02 September 2011**
- **Solid Oxide Fuel Cell Design and Modelling, 28 August - 02 September 2011**

The programme also includes a free workshop conducted by the EU-project GENIUS on

- Diagnosis Tools For SOFC Systems, 01 September 2011, 14:00 – 17:00 h

The four courses offered in 2011 address educational 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 subjects covered are suitable for participants requiring basic introduction to these technologies (*A Primer on Hydrogen and Fuel Cell Technology*), to those seeking first insights into low or high temperature fuel cells (*An Introduction to Low Temperature Fuel Cell Technology* and *An Introduction to Solid Oxide Fuel Cell Technology*), and finally those looking for more advanced training on *Solid Oxide Fuel Cell Design and Modelling*). Within the courses, separate introductory sessions will allow for catching up on basic topics of electrochemistry. Therefore the courses are suitable for students of undergraduate (Bachelor), postgraduate (Master) and doctorate (PhD) level. It is also helpful for young professionals, technicians and more experienced researchers wishing to review the technologies in question and expand their knowledge, maybe to suit a newly acquired position. The School aims at providing a comprehensive introduction from fundamentals to the choice and design of components up to considerations of market introduction, economics and applications.

The school draws on the knowledge and expertise of a group of teachers currently working at the leading edge of fuel cell and hydrogen research and development in Europe from universities, national research centres and industry. These teachers have bundled their expertise and resources in the **TrainHy Teaching Team** to deliver lectures at the Joint European Summer School on Fuel Cell and Hydrogen Technology. Its membership consists of:

A. Atkinson (Imperial College, United Kingdom), F. Barbir (University of Split, Croatia), H. Barthélémy (Air Liquide, France), S. Brennan (University of Ulster, United Kingdom), A.E. Dahoe (University of Ulster, United Kingdom), M. Ellis (Intelligent Energy, United Kingdom), T. Graule (Swiss Federal Laboratories for Materials Testing and Research, Switzerland), A. Gubner (Munich University of Applied Sciences, Germany), B. de Haart (Forschungszentrum Jülich, Germany), R. Hamelmann

(eff+, Germany), T. Hocker (Zurich University of Applied Sciences, Switzerland), S. Karvonen (Helsinki University of Technology, Finland), S. Knudsen Kær (Aalborg University, Denmark), A. Kulikovsky (Moscow State University, Forschungszentrum Jülich, Germany), S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark), L. Magistri (University of Genoa, Italy), S. McPhail (National Agency for New Technologies, Energy and the Environment, Italy), J. Mergel (Forschungszentrum Jülich, Germany), V. Molkov (University of Ulster, United Kingdom), R Mücke (Forschungszentrum Jülich, Germany), C. Navas (Fuel Cells and Hydrogen Joint Undertaking, Belgium), S. Neophytides (ICEHT, Patras, Greece), F. Panik (University of Applied Sciences Esslingen, Germany), B. Pollet (University of Birmingham, United Kingdom), O. Posdziech (EBZ Fuel Cells & Process Technology, Germany), S. Reiners (Heliocentris, Germany), J. Schilm (Fraunhofer Institute for Ceramic Technologies and Systems, Germany), M. Sorrentino (University of Salerno, Italy), R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany), M. Thomas (AFC Energy, United Kingdom), I. Vinke (Forschungszentrum Jülich, Germany).

The 2011 Summer School's selection of lecturers is given in the programme below.

Informal networking is a key element of science and scientific work in general. The Joint European Summer School on Fuel Cell and Hydrogen Technology offers ample opportunity for networking between young professionals and eminent scientists. Students are given a mini-project to work on in small teams and asked to give a short introduction to themselves and the work they are doing (or expect to be doing).

The schedule takes in ca. six hours of formal teaching per day. An optional exam will be available for students who are required to obtain ECTS points relevant to their PhD studies. The school will be validated and academic points awarded by the University of Ulster and the University of Genoa. For the course *A Primer on Hydrogen and Fuel Cell Technology* (21 August - 27 August 2011), you can get 7.5 points from the University of Ulster, in connection with semester work though. The conditions you can find on the web site: http://www.hysafe.org/SummerSchoolFCH. For all other courses, 2.5 ECTS points will be awarded by the University of Genoa to those taking the optional exam, on 25 August for *An Introduction to Solid Oxide Fuel Cell Technology* and on 1 September for *An Introduction to Low Temperature Fuel Cell Technology* and *Solid Oxide Fuel Cell Design and Modelling.*

Please refer to the programme below for detailed information about the Summer School content.

LOCATION & VENUE

Viterbo is an ancient city in the Lazio region of central Italy. It is approximately 80 kilometers north of Rome on the Via Cassia, and it is surrounded by the Monti Cimini and Monti Volsini. The historic centre of the city is surrounded by medieval walls, still intact, built during the 11th and 12th centuries. Entrance to the walled centre of the city is through ancient gates. Apart from agriculture, the main resources of Viterbo's area are pottery, marble, and wood. The town also hosts the Italian gold reserves, an important Academy of Fine Arts, and the University of Tuscia. It is located in a wide thermal area, attracting many tourists from the whole central Italy.

The hotel hosting the school is modern, has an outdoor pool with water slide, a grass football field, and further outdoor activities. Rooms are of a good standard and offer all the facilities you would expect including air-conditioning. More details at www.balletti.it. In early September we can expect temperatures in the mid to high 20°C range. Participants wishing to arrive early or stay longer should make their own arrangements with our contact and cooperating partner: Panhellas Tourism & Congress (**Mrs. Manuela Drape Stathoglou, Mail: manuela@panhellas.gr, Tel: 0030 2810 300847, Fax: 0030 2810 30848**).

As we meet around the end of the main European holiday season, there will very probably be suitable low cost charter flights to Rome airport (www.adr.it) available from a wide range of major and regional European airports.

There will be shuttle transfer coaches for all arrivals and departures from the airport of Rome (Fiumicino Aeroporto) to Balletti Park Hotel and vice versa approx every 3-4 hours. The transfer time by coach is around 1¼ hour, depending on the traffic.

Note:

We need to receive your arrival and departure transfer details (flight number / arrival and departure time) in order to arrange the transfers. In case you arrive or depart at other dates than in the programme, you will have to arrange your transfer on your own.

Travel by train. Take the train from Fiumicino airport (Trenitalia), reach the station of Roma Trastevere and from there get another train to Viterbo (Porto Romana). For more information, please have a look at the website www.trenitalia.com. To find the correct connection, add the following information in the space: From: Fiumicino Aeroporto To: Viterbo The journey takes approx 2½ hours and you always have to change train in Roma Trastevere. From Viterbo, you have to take the bus to Balletti Park Hotel (15-25 minutes)

Travel by taxi. Private taxi transfers can be arranged and pre-booked – the driving time by taxi is 1¼ hour. Contact our cooperation partner Panhellas Tourism & Congress (Mrs. Manuela Drape Stathoglou, Mail: manuela@panhellas.gr, Tel: 0030 2810 300847, Fax: 0030 2810 30848). Each taxi can be shared between 3 persons. The fare per taxi-trip is 165.00 €.

SUMMER SCHOOL CHAIRMEN

Dr Robert Steinberger-Wilckens (Forschungszentrum Jülich, Germany)
Prof Søren Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)
Dr Arief Dahoe (University of Ulster, United Kingdom)

ORGANISING COMMITTEE

Dr Robert Steinberger-Wilckens (Forschungszentrum Jülich, Germany)
Mrs Chantal Hake (Forschungszentrum Jülich, Germany)
Mr Josef Mertens (Forschungszentrum Jülich, Germany)

CORRESPONDENCE

Student registration and financial matters - ch.hake@fz-juelich.de, Phone +49 2461 61-2244, Fax +49 2461 61-4155
Lecturers/other information - jo.mertens@fz-juelich.de, Phone +49 2461 61-6706

STUDENT FEE AND REGISTRATION

Registration cost per student is 850 €/week; this includes accommodation (6 nights - Sunday to Saturday - double occupancy; single occupancy +125 €, upon availability), all food (full board), tuition, school banquet and the half-day excursion. The registration form for each school category can be found at the end of this document.

All registrations should be made by **16th August 2011** at the very latest.

PROGRAMME

FIRST WEEK		
Sunday, 21st August 2011		
19:00	*Welcome, Early Registration, Dinner*	
Monday, 22nd August 2011		
	A PRIMER ON FUEL CELL AND HYDROGEN TECHNOLOGIES	**AN INTRODUCTION TO SOLID OXIDE FUEL CELL TECHNOLOGY**
08:30 - 09:00	*Welcome*	
09:00 - 11:00	**Introduction to Fuel Cells: - Status and applications of fuel cell technology - Competing technologies & the market place R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**	
11:00 - 11:30	*Coffee Break*	
11:30 - 13:30	**Basic Thermodynamics and System Analysis for Fuel Cells R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**	
13:30 - 14:30	*Lunch*	
14:30 - 16:00	*Free Time*	
16:00 - 17:30	**Hydrogen as an Energy Carrier: Production & Utilisation R. Hamelmann (eff +, Germany)**	**Fundamentals of Electrochemistry, Thermodynamics and Solid State Chemistry** **L.G.J. de Haart (Forschungszentrum Jülich, Germany)** *Newbies* **R. Mücke (Forschungszentrum Jülich, Germany)** *Experienced*
17:30 - 18:00	*Coffee Break*	
18:00 - 19:30	**Hydrogen Storage Technologies: Compatibility of Materials with Hydrogen H. Barthélémy (Air Liquide)**	
19:30	*Welcome Drink / Dinner*	
Tuesday, 23rd August 2011		
	A PRIMER ON FUEL CELL AND HYDROGEN TECHNOLOGIES	**AN INTRODUCTION TO SOLID OXIDE FUEL CELL TECHNOLOGY**
08:30 - 10:30	**Safety I: Hydrogen Properties, Releases and Dispersion V.V. Molkov (University of Ulster, United Kingdom) S.L. Brennan (University of Ulster, United Kingdom)**	**Materials for Electrolytes and Anodes A. Atkinson (Imperial College of Science and Technology, United Kingdom)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Hydrogen Storage, Distribution & Infrastructure R. Hamelmann (eff+, Germany)**	**Materials for Cathodes and Contacts A. Atkinson (Imperial College of Science and Technology, United Kingdom)**
13:00 - 14:00	*Lunch*	
14:00 - 16:30	*Free Time*	
16:30 - 17:00	**Tutorial on Unignited Jets S.L. Brennan (University of Ulster, United Kingdom)**	**Student Projects R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**
17:00 - 17:30	*Coffee Break*	

17:30 - 20:00	**Overview on Polymer Electrolyte Fuel Cells (PEFC)** **B. Pollet (University of Birmingham, United Kingdom)**	**Cell and Stack Design** **I.C. Vinke (Forschungszentrum Jülich, Germany)**
20:00	*Dinner*	
Wednesday, 24th August 2011		
	A PRIMER ON FUEL CELL AND HYDROGEN TECHNOLOGIES	**AN INTRODUCTION TO SOLID OXIDE FUEL CELL TECHNOLOGY**
08:30 - 10:30	**High Temperature Proton Exchange Fuel Cells** **S.G. Neophytides (Institute of Chemical Engineering and High Temperature Chemical Processes, Institute Processes, Patras, Greece)**	**High temperature steels, interconnection/sealing materials and joining techniques** **J. Schilm (Fraunhofer Institute for Ceramic Technologies and Systems, Germany)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Safety II: Hydrogen Fires** **V.V. Molkov (University of Ulster, United Kingdom)** (11:00 – 12:30) **Tutorial on Jet Fires** **S.L. Brennan (University of Ulster, United Kingdom)** (12:30 – 13:00)	**Ceramic Materials Manufacture** **T. Graule (Swiss Federal Laboratories for Materials Testing and Research, Switzerland)**
13:00 - 15:00	*Lunch*	
15:00 - 20:00	*Excursion to* Villa Lante	
20:00	*Banquet*	
Thursday, 25th August 2011		
	A PRIMER ON FUEL CELL AND HYDROGEN TECHNOLOGIES	**AN INTRODUCTION TO SOLID OXIDE FUEL CELL TECHNOLOGY**
08:30 - 10:30	**Safety III-1: Hydrogen Deflagrations** **V.V. Molkov (University of Ulster, United Kingdom)** **Safety III-2: Hydrogen Detonations** (08:30 – 09:30) **G. Ciccarelli (Queen's University, Canada)** (09:30 – 10:30)	**SOFC Fuels (Production & Issues & Reforming Sulfur, Carbon etc.)** **S. McPhail (National Agency for New Technologies, Energy and the Environment, Italy)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Molten Carbonate Fuel Cells (MCFC) and Solid Oxide Fuel Cells (SOFC)** **S. McPhail (National Agency for New Technologies, Energy and the Environment, Italy)**	**Manufacturing of Solid Oxide Fuel Cells** **R. Mücke (Forschungszentrum Jülich, Germany)**
13:00 - 14:00	*Lunch*	
14:00 - 16:00	**Practical Work** **S. Reiners (Heliocentris, Germany)**	
16:00 - 17:00	**Tutorial on Deflagrations and Detonations** **A.E. Dahoe (University of Ulster, United Kingdom)**	**Solid Oxide Fuel Cell Exam** **Teaching Team**
17:00 - 17:30	*Coffee Break*	
17:30 - 20:00	*Students Session / Participant Contribution*	
20:00	*Dinner*	

Friday, 26th August 2011		
	A PRIMER ON FUEL CELL AND HYDROGEN TECHNOLOGIES	**AN INTRODUCTION TO SOLID OXIDE FUEL CELL TECHNOLOGY**
08:30 - 10:30	**European Projects & Politics, Information Sources and Networks** **C. Navas (Fuel Cells and Hydrogen Joint Undertaking, Belgium)**	**System Concepts and Balance of Plant Components** **O. Posdziech (EBZ, Germany)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Fuel Cell Applications and Development Challenges** **S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)**	**Degradation Issues** **lecture and practical work** **L.G.J. de Haart (Forschungszentrum Jülich, Germany)**
13:00 - 14:00	*Lunch*	
14:00 - 16:00	**Practical Work** **S. Reiners (Heliocentris, Germany)**	
16:00 - 17:00	**Tutorial on Deflagrations and Detonations** **A.E. Dahoe (University of Ulster, United Kingdom)**	**Students Work Project** **R. Steinberger-Wilckens** **(Forschungszentrum Jülich, Germany)**
17:00 - 18:00	*Coursework information, Exam information/results, thanks and official farewell* **S.L. Brennan (University of Ulster, United Kingdom)** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)** **S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)** **A.E. Dahoe (University of Ulster, United Kingdom)**	
19:30	*Dinner*	
Saturday, 27th August 2011		
Departure		

SECOND WEEK		
Sunday, 28th August 2011		
19:00	*Welcome, Early Registration, Dinner*	
Monday, 29th August 2011		
	AN INTRODUCTION TO LOW TEMPERATURE FUEL CELL TECHNOLOGY	**SOLID OXIDE FUEL CELL MODELLING AND DESIGN**
08:30 - 09:00	*Welcome*	
09:00 - 11:00	**Introduction to Fuel Cells: Fuel Cell Types and Designs Competing Technologies and the Market Place** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**	
11:00 - 11:30	*Coffee Break*	
11:30 - 13:30	**Principles of Electrochemical Kinetics & Thermodynamics for Fuel Cells** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**	
13:30 - 14:30	*Lunch*	
14:30 - 16:30	**Practical Work** **S. Reiners (Heliocentris, Germany)**	
16:30 - 18:00	**Thermodynamics and Electrochemistry of Low Temperature Fuel Cells** **F. Barbir (University of Split, Croatia)**	**Fundamentals of Electrochemistry, Thermodynamics and Solid State Chemistry** **L.G.J. de Haart (Forschungszentrum Jülich, Germany)** *Newbies* **R. Mücke (Forschungszentrum Jülich, Germany)** *Experienced*
18:00 - 18:30	*Coffee Break*	
18:30 - 20:00	**Proton Exchange Fuel Cells & Direct Methanol Fuel Cells: Materials, Experiences, Challenges** **J. Mergel (Forschungszentrum Jülich, Germany)**	**Cell and Stack Design** **I.C. Vinke (Forschungszentrum Jülich, Germany)**
20:00	*Welcome Drink / Dinner*	

Tuesday, 30th August 2011		
	AN INTRODUCTION TO LOW TEMPERATURE FUEL CELL TECHNOLOGY	**SOLID OXIDE FUEL CELL MODELLING AND DESIGN**
08:30 - 10:30	**High Temperature Proton Exchange Fuel Cells: Materials, Experiences, Challenges** **S.G. Neophytides (Institute of Chemical Engineering and High Temperature Chemical Processes, Institute Processes, Patras, Greece)**	**System Concepts and Balance of Plant Components** **O. Posdziech (EBZ, Germany)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**High Temperature Proton Exchange Fuel Cells: Materials, Experiences, Challenges** **S.G. Neophytides (Institute of Chemical Engineering and High Temperature Chemical Processes, Institute Processes, Patras, Greece)**	**Modelling Basics I** **T. Hocker (Zürcher Hochschule für Angewandte Wissenschaften, Switzerland)**
13:00 - 14:00	*Lunch*	
14:00 - 16:00	**Practical Work** **S. Reiners (Heliocentris, Germany)**	
16:00 - 16:30	**Student Projects** **S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)**	**Student Projects** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**
16:30 - 17:00	*Coffee Break*	

17:00 - 18:30	**Alkaline Fuel Cells and Phosphoric Acid Fuel Cell** **M. Thomas (AFC Energy)**	**Modelling Basics II** **T. Hocker (Zürcher Hochschule für Angewandte Wissenschaften, Switzerland)**
18:30 - 20:00	*Poster Session*	
20:00	*Dinner*	
Wednesday, 31st August 2011		
	AN INTRODUCTION TO LOW TEMPERATURE FUEL CELL TECHNOLOGY	**SOLID OXIDE FUEL CELL MODELLING AND DESIGN**
08:30 - 10:30	**Fuels for Low Temperature Fuel Cells Reforming, Cleaning** **S. Knudsen Kaer (University of Aalborg, Denmark)**	**1D, 2D Simulation** **A. Gubner (Munich University of Applied Sciences, Germany)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Stationary Applications and Demos of Low Temperature Fuel Cells** **M. Ellis (Intelligent Energy, United Kingdom)**	**CFD Simulation** **A. Gubner (Munich University of Applied Sciences, Germany)**
13:00 - 15:00	*Lunch*	
15:00 - 20:00	*Excursion to* Villa Lante	
20:00	*Banquet*	
Thursday, 1st September 2011		
	AN INTRODUCTION TO LOW TEMPERATURE FUEL CELL TECHNOLOGY	**SOLID OXIDE FUEL CELL MODELLING AND DESIGN**
08:30 - 10:30	**Mobile Applications and Demos of Low Temperature Fuel Cells** **F. Panik (University of Applied Sciences Esslingen, Germany)**	**Model Based Diagnosis for Solid Oxide Fuel Cells** **M. Sorrentino (University of Salerno, Italy)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Practical Work on Mobile Applications and Demos of Low Temperature Fuel Cells** **F. Panik (University of Applied Sciences Esslingen, Germany)**	**Macroscopic Modelling of Fuel Cell Degradation** **A. Kulikovsky (Moskow State University, Forschungszentrum Jülich, Germany)**
13:00 - 14:00	*Lunch*	
14:00 - 16:00	*Free Time*	
16:00 - 17:00	**Students ECTS Exam Low Temperature Fuel Cells** **Teaching Team**	**Students ECTS Exam Solid Oxide Fuel Cells** **Teaching Team**
17:00 - 17:30	*Coffee Break*	
17:30 - 19:00	*Students Session / Participant Contribution*	
19:00 - 20:00	*Poster Session*	
20:00	*Dinner*	
Friday, 2nd September 2011		
	AN INTRODUCTION TO LOW TEMPERATURE FUEL CELL TECHNOLOGY	**SOLID OXIDE FUEL CELL MODELLING AND DESIGN**
08:30 - 10:30	**How to Progress on Low Temperature Fuel Cells** **F. Barbir (University of Split, Croatia)**	**Balance of Plant Modelling** **S. Karvonen (Helsinki University of Technology, Finland)**
10:30 - 11:00	*Coffee Break*	
11:00 - 13:00	**Practical Work on how to Progress on Low Temperature Fuel Cells** **F. Barbir (University of Split, Croatia)**	**Hybrid Systems** **L. Magistri (University of Genoa, Italy)**

13:00 - 14:00	*Lunch*
14:00 - 16:00	*Free Time*
16:00 - 17:00	**Students Work Project** **S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**
17:00 - 18:00	*Exam results, thanks and official farewell* **S. Linderoth (Risø National Laboratory/Technical University of Denmark, Denmark)** **R. Steinberger-Wilckens (Forschungszentrum Jülich, Germany)**
19:30	*Dinner*
Saturday, 3rd September 2011	
Departure	

GENIUS project complimentary workshop: 1st September 2011
free participation for all Summer School pupils

14:00 – 17:00	**GENIUS project workshop**
14:00 – 14:30	Genius Project Overview (Philippe Moçeteguy, EIfER)
14:30 – 15:00	Fuel Cells Diagnosis based on Pattern Recognition (Kun Wang, FC LAb)
15:00 – 15:30	On-line diagnosis for SOFC (C. Pianese, University of Salerno)
15:30 – 15:45	*Coffee Break*
15:45 - 16:15	SOFC Diagnostic tool (L.Magistri, University if Genoa)
16:15 – 16:45	wrap-up and open discussion

1st Joint European Summer School for Fuel Cell and Hydrogen Technology

A primer for H_2 and FCs ☐ ***Introduction to SOFC Technologies*** ☐

Balletti Park Hotel
22nd - 26th August 2011, Viterbo, Italy

Title :	
Family Name :	
First name :	
University/Institution/Company Name	
Street / P.O. Box :	
Postal Code :	
Town/City :	
Country :	
Phone :	
Fax :	
E-mail :	
Rome arrival date and time:	
Rome departure date and time:	
Room category:	Double room (850,00 €) ☐ Single room (975,00 €) ☐
Please note any special dietary requirements, disabilities etc. that we may need to know about	

The participation fee will be paid by

☐ ***bank transfer to***
Sparkasse Düren
Account No. 337 709
National bank code: 395 501 10
IBAN: DE14 3955 0110 0000 3377 09
BIC/Swift: SDUEDE33XXX
Reference: School title and participant´s name

☐ ***credit card***

Fill in the attached form and fax it to **+49 2461 614155**

Note: We need to receive your arrival and departure transfer details (flight number / arrival and departure time) in order to arrange the transfers !!!

1st Joint European Summer School for Fuel Cell and Hydrogen Technology

LTFC Summer School ☐ ***SOFC Modelling and Design*** ☐

Balletti Park Hotel
29th August – 2nd September 2011, Viterbo, Italy

Title :	
Family Name :	
First name :	
University/Institution/Company Name	
Street / P.O. Box :	
Postal Code :	
Town/City :	
Country :	
Phone :	
Fax :	
E-mail :	
Room category:	Double room (850,00 €) ☐ Single room (975,00 €) ☐
Rome arrival date and time:	
Rome departure date and time:	
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☐ ***credit card***

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Forschungszentrum Jülich GmbH
Institut für Energie- und Klimaforschung - Projekt Brennstoffzelle (IEK-PBZ)
zH Frau Chantal Hake
Fax: ++49 2461 61-4155

Bezahlung per Kreditkarte / Credit Card Payment Form

Wenn Sie mit Ihrer Kreditkarte (Master Card oder VISA) zahlen möchten, füllen Sie bitte das Formular aus und schicken es an die oben aufgeführte Faxnummer.
If you wish to pay by credit card (Master Card or VISA), please complete this form and fax it to the above number.

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Name der Veranstaltung Name of disposition	Teilnehmername / Rechnungsnummer Participant name / Invoice number	Betrag in € Amount in €

Kreditkarte / Credit card: ☐ Master Card ☐ VISA

Name des Karteninhabers / Credit card holder

Kreditkartennummer / Credit card number

Kartenprüfnummer / Security code

Gültigkeitsdatum / Expiry date

Datum und Unterschrift / Date and signature

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