

12th UECT

2. Circular



Ulm ElectroChemical Talks 2010

Topic:
„2015“ Technologies
on Batteries and Fuel Cells

June 15

Tutorials on Batteries and Fuel Cells
Weiterbildungszentrum Brennstoffzelle Ulm e.V.

June 15

Workshop „Governmental Programs E-Mobility“
Edwin-Scharff-Haus

June 16 and 17

Conference
Edwin-Scharff-Haus



Contents

Greetings	3
Conference Places	4
June 15, Tutorials on Fuel Cells and Batteries	5
June 15, Tutorial Session 1 (Fuel Cells)	6
June 15, Tutorial Session 2 (Batteries)	7
June 15, Workshop on „Governmental Programs E-Mobility“	8
June 15, Workshop „Governmental Programs E-Mobility“ Program	9
June 16, Conference Program	10/11
June 17, Conference Program	12/13
Travel Information	14
Hotel Reservation	15
Scientific committee	16
Registration	17
Registration Form	18-20

Greetings

Dear friends of battery and fuel cell technologies,

on behalf of the organizers I am cordially inviting you to join us for the 12th Ulm ElectroChemical Talks (UECT). We will meet again in the beautiful city of Ulm – the birthplace of Albert Einstein.

High performance Li-Ion Batteries and Fuel Cells are key technologies for future drive trains as well as for stationary energy storage and power supply applications. Extended field trials over the last couple of years under all day conditions could demonstrate a high level of maturity. In some areas commercial products have entered already markets. Driven by global challenges in energy supply and increased efforts to limit climate change, industry and governments are pushing for broad market entry of vehicles powered by fuel cells and batteries. With this in mind a strong emphasis has to be laid on technologies, being available by the year 2015. This topic shall provide the guideline for the 12th UECT:

“2015” Technologies

Again we have been able to attract high level speakers from all around the world to present their latest results at this already traditional conference.

Based on the great interest last time, we will offer again tutorials on Li-Ion Batteries and Fuel Cells ahead of the 12th UECT. Well known experts will provide newcomers with a good insight into the various topics of Batteries and Fuel Cells. On behalf of the Scientific Committee and Organizing Team I cordially invite you to join us for some exciting days around applied electrochemistry.

In parallel to the tutorials we will organize for the first time a workshop on governmental programs on E-Mobility. This workshop will provide insights into international governmental programs that endorse E-Mobility applications based on all relevant drive train technologies including battery-E-drives, plug-in hybrid vehicles as well as fuel cell vehicles.

Looking forward seeing you in Ulm again



Prof. Werner Tillmetz

June 15:

**Tutorials on Batteries and Fuel Cells
(Parallel Sessions)**

Weiterbildungszentrum Brennstoffzelle Ulm e.V.

(Fuel Cell Education and Training Center Ulm)

Helmholtzstr. 6

D-89081 Ulm

June 15:

**Workshop on “Governmental Programs on
E-Mobility”**

Edwin-Scharff-Haus

Silcherstr. 40

D-89231 Neu-Ulm

June 15:

Get Together (in the evening)

Foyer of „Edwin-Scharff-Haus“

Silcherstr. 40

D-89231 Neu-Ulm

June 16 and 17:

Conference

Edwin-Scharff-Haus

Silcherstr. 40

D-89231 Neu-Ulm

June 15, Tutorials

On June 15 we will offer tutorials on PEM Fuel Cells and Li-Ion Batteries.

The tutorials will take place at the "Weiterbildungszentrum Brennstoffzelle Ulm e.V." (WBZU), Helmholtzstr. 6, D-89081 Ulm, which is located next to "Zentrum für Sonnenenergie- und Wasserstoff-Forschung" (ZSW) in the Science Park of Ulm.

These tutorials will provide a detailed insight into the technologies. They will also give an overview on the global R&D in each of the technologies. Additionally, participants can put hands on PEM-technology. WBZU offers different demonstration-units and test-benches for PEM Fuel Cells.



June 15, Tutorial Session 1 (Fuel Cells)

10:00 Welcome & Introduction

T. Aigle, Weiterbildungszentrum Brennstoffzelle
Ulm e.V., Ulm (D)

10:15 Fundamentals on Fuel Cells

L. Jörissen, Zentrum für Sonnenenergie- und
Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

- Introduction into Electrochemical Power Sources
- The Polymer Electrolyte
- Membrane Electrode Assemblies
- The Transition from Cells to Stack
- A few Remarks on Systems

12:00 Lunch

13:00 Fuel Cells Live – Operate your own Fuel Cell

P. Pioch, Weiterbildungszentrum Brennstoffzelle
Ulm e.V., Ulm (D)

14:00 Fuel Cell Applications

T. Aigle, Weiterbildungszentrum Brennstoffzelle
Ulm e.V., Ulm (D)

- Fuel Cell Drive Trains for Cars and Commercial Vehicles
- Cogeneration of Heat and Power with Fuel Cells
- Fuel Cells in Special Market Applications - from Back-up Power to Leisure Market Applications

15:30 Discussions

16:00 End of Tutorial

17:30 Reception

Get together and welcome for all participants of Tutorial, Governmental Workshop and Conference at „Edwin-Scharff-Haus“, Neu-Ulm

June 15, Tutorial Session 2 (Batteries)

10:00 Welcome & Introduction

M. Wohlfahrt-Mehrens, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

10:15 Li-Ion Batteries - Basic Principles and Technologies

M. Wohlfahrt-Mehrens, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

- Anode and Cathode Materials
- Electrolytes and Separators
- Cell Designs
- Development Trends
- Applications

12:00 Lunch

13:00 Battery Management – Battery System Technology

H. Döring, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

- Potential Risk and Hazard Potential in Batteries
- Mechanism of Failing
- Test Procedures and Standards for Safety
- Examples and Results for Safety Tests

14:00 From Cells to Battery Modules and Battery Systems

A. Jossen, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

- Technologies for Charge Equalization
- Monitoring
- Battery State Determination (SOC, SOH and SOF)
- Charge Technologies
- Numerical Modelling

15:30 Discussions

16:00 End of Tutorial

17:30 Reception

Get together and welcome for all participants of Tutorial, Governmental Workshop and Conference at „Edwin-Scharff-Haus“, Neu-Ulm

On June 15 within the framework of the UECT the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) will host a workshop on E-Mobility.

The IPHE is an international organization that provides a forum for member governments to share information and policy experiences with the goal of accelerating the integration of hydrogen and fuel cell technologies into the economy.

This workshop is focused on governmental programs that endorse E-Mobility applications based on all relevant drive train technologies including battery-E-drives, plug-in hybrid vehicles as well as fuel cell vehicles. The workshop will examine topics including:

- Advantages and challenges of batteries, fuel cells and hydrogen in future mobility
- Overcoming barriers to market entry
- Common interests and actions
- Exchange of lessons learned from existing programs

The workshop will be divided in two sections. The *first part* features presentations from government experts on Electric Mobility Programs from selected countries (Japan, China, Korea, US, Denmark, EU, Germany). The *second part* will address industrial programs and expectations of industries on government, to be delivered by executive professionals from leading OEMs.

Participants are welcome to continue discussions and exchange afterwards at an informal "Get Together".

Workshop information and materials will be posted and updated on the IPHE website. Please visit www.iphe.net

The workshop is supported by the Federal Ministry of Transport, Building and Urban Development and hosted by the IPHE. Participation is free of charge.

The workshop will take place at "Edwin-Scharff-Haus", Silcherstrasse 40, D-89231 Neu-Ulm.

For questions on this workshop please contact:

IPHE Secretariat, Ms. Steffi Rode

Nationale Organisation Wasserstoff und Brennstoffzellentechnologie (NOW)

Phone +49 (0)30 31 16 11 6-21

Steffi.Rode@now-gmbh.de

Draft Agenda

09:00 Session 1

- Introduction
- Electric Mobility Programs in selected IPHE countries

10:10 Coffee Break

10:40 Session 2

- Electric Mobility Programs in selected IPHE countries

12:00 Lunch

13:15 Session 3

- Industrial Programs and Expectation of Industries on Government
- Presentations of Leading OEMs

14:35 Coffee Break

15:00 Discussion

- “Common Challenges and Solutions for Global Markets”

16:00 Summary and Closing (End around 4.30 p.m.)

17:30 Reception

Get together and welcome for all participants of Tutorial, Governmental Workshop and Conference at „Edwin-Scharff-Haus“, Neu-Ulm

08:30 Opening Conference Office

09:00 Welcome, Introductory Remarks

W. Tillmetz, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

H. J. Ebeling, President University of Ulm (D)

Session 1

Chairman W. Tillmetz, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

09:15 Preparing the Markets for Fuel Cells in Transportation

K. Bonhoff, NOW GmbH, Berlin (D)

09:45 GM and Opel Fuel Cell Vehicles - a Progress Report

R. von Helmolt, Adam Opel AG, Rüsselsheim (D)

10:05 Fuel Cell System Technology - ready for Market Entry

M. Venturi, NuCellSys, Kirchheim (D)

10:25 Cost Status & Projections Automotive Fuel Cell Systems

J. Markinkoski, DOE, US Department of Energy (USA)

10:45 Coffee Break

Session 2

Chairman J. Scholta, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

11:05 The Honda State of the Art Aromatic PEM V Flow Stack and its Application to FCX Clarity - A viable Solution for FCEVs Today and Beyond 2015?

T. Brachmann, Honda R&D Europe GmbH, Offenbach (D)

11:25 Automotive Fuel Cell Requirements and Challenges for Commercial Production

A. Nelson, AFCC Automotive Fuel Cell Cooperation Corp. Burnaby (CDN)

11:45 Automotive Fuel Cell Qualification Testing

A. Kabza, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

12:05 Success Factors for Fuel Cell Products: Myths and Reality Checks in the DMFC World

J. Müller, SFC Smart Fuel Cell AG, Brunnthal (D)

12:25 Lunch

Session 3

Chairman L. Jörissen, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

14:00 Fundamental and Practical Aspects of Nano-structured thin Film Catalysts for PEM Fuel Cells

R. Atanasoski, 3M Corporate R&D, Minnesota (USA)

14:20 Core-Shell Electrocatalysis in Energy Conversion and Storage

P. Strasser, Technische Universität, Berlin (D)

14:40 PEMFC Catalysts Limits

K.A. Friedrich, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Stuttgart (D)

15:00 Non-Noble Metal Catalysts for PEMFCs

K. Ota, Yokohama University (JPN)

15:20 Coffee Break

Session 4

Chairman A. Kabza, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

15:50 Advanced Technologies for Back up Applications

K. Colbow, Ballard Power Systems, Burnaby (CDN)

16:10 Commercial PEFC Bipolar Plate Solutions and their Effects for Stack Degradation under Automotive Conditions

J. Scherer, Dana Sealing Products – Victor Reinz, Neu-Ulm (D)

16:30 Future Development of PEMFC Membranes

K.-D. Kreuer, Max-Planck-Institut für Festkörperforschung, Stuttgart (D)

16:50 Future Development of Hydrogen-Storage Materials

W. Lohstroh, Karlsruher Institut für Nanotechnologie (KIT), Karlsruhe (D)

17:30 Poster Session

R.J. Behm, Universität Ulm (D)

18:30 Poster Award

R.J. Behm, Universität Ulm (D)

19:00 Dinner Talk

Session 1

Chairman M. Wohlfahrt-Mehrens, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

09:00 E-Mobility Demonstration in Germany

A. Metzner, NOW GmbH, Berlin (D)

09:20 Electric Vehicle Batteries Requirement and Status

P. Lamp, BMW Group, München (D)

09:40 Safety Aspects on Li-Ion-Batteries for Future Mobility Concepts

A. Lamm, Deutsche Accumotive, Kirchheim (D)

10:00 Challenges in Production Technologies for Automotive Batteries

P. Bidian, Daimler AG, Stuttgart (D)

10:20 Batteries for Electric Cars, Current Cost Structure

A. Dinger, Boston Consulting Group, München (D)

10:40 Coffee Break

Session 2

Chairman M. Wachtler, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

11:00 Sulphur Lithium Ion Power: a Novel, High Performance Polymer Tin/Sulphur Lithium-ion Battery

B. Scrosati, University Roma (I)

11:20 Catalysis Studies and Electrode Design for Lithium-Air Battery Cathodes

H. Gasteiger, Massachusetts Institute of Technology, Cambridge (USA)

11:40 Mg-Battery Systems

D. Aurbach, University of Bar-Ilan (ISR)

12:00 Liquid Ionics as Li-Battery Electrolyte

K. Zaghib, Institut de Recherche d'Hydro-Québec, Québec (CDN)

12:20 Lunch

Session 3

Chairman P. Axmann, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

14:00 Safety Technology of SCiB™ Rechargeable Battery for Vehicle Application

S. Kosugi, Toshiba Corp. Tokyo (JPN)

14:20 Batteries for Plug in Electric Vehicles

J. Oh, SK Energy Co., Ltd. Jongro-Gu (KOR)

14:40 Large Format Li-Ion Cells for Automotive Applications

J. Kaiser, Li-Tec Battery GmbH, Kamenz (D)

15:00 Aging Mechanism of Li-Ion Batteries

U. Köhler, Johnson Controls – Saft Advanced Power Solutions, Hannover (D)

15:20 Recent Developments on LiFePO₄, to Match the Needs of 2015-Technologies

N. Schall, Süd-Chemie AG, Moosburg (D)

15:40 Coffee Break

Session 4

Chairman H. Döring, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

16:00 NEDO's Activity on Battery R & D in Japan

Z. Ogumi, Kyoto University (JPN)

16:20 NiMH-Battery Systems for Electric Mobility and Industrial Applications

D. Ohms, Hoppecke Batterien & Co. KG, Brilon (D)

16:40 Next Generation Lead-Acid Batteries

P. Moseley, ALABC, Durham (USA)

17:00 Closing words

W. Tillmetz, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm (D)

June 15: Tutorials

Weiterbildungszentrum Brennstoffzelle Ulm e.V. (WBZU)
(Fuel Cell Education and Training Center Ulm)

Helmholtzstr. 6, D-89081 Ulm

Phone +49 (0)731 / 1 75 89-21

June 15: Workshop on “Governmental Programs E-Mobility” and Get Together

June 16 and 17: Conference

Edwin-Scharff-Haus

Silcherstr. 40, D-89231 Neu-Ulm

Phone +49(0)731 / 80 08-222

(only during the conference on June 16 and 17)

By air

Arrival at Stuttgart Airport or Munich Airport. You can go by train to Ulm Central Station from either airport (from Stuttgart Airport station in about 2 hours; from Munich Airport station in about 2,5 hours).

By rail

Ulm is served by many rail connections.

The **conference centre** (Edwin-Scharff-Haus) is about 15 minutes from the Central Station Ulm by bus no. 5 or 7 direction “Neu-Ulm”. Exit at the stop “Neu-Ulm Petrusplatz” and walk along the Danube for about 10 minutes.

WBZU is about 20 minutes from the Central Station. Take bus no. 3 direction „Wissenschaftsstadt“. Exit at the stop „Botanischer Garten“. Walk down the walkway along Helmholtzstraße. You will find the multicoloured building of WBZU after about 200 meters at number 6 directly at the right hand side of the road. You can also find a plan (from bus stop “Botanischer Garten” to WBZU) at the Website: www.wbzu.de/standort.html

By car

Ulm is accessible from the motorways: A 7, A 8

Hotel Reservation

WBZU has reserved hotel rooms in different price categories at Mövenpick Hotel Ulm/Neu-Ulm and InterCityHotel Ulm (from June 14 to June 18, 2010).

Please book your hotel room by yourself:

Mövenpick Hotel Ulm/Neu-Ulm

Silcherstr. 40, D-89231 Neu-Ulm

Phone +49(0)731 / 8011-0

www.moevenpick-ulm.com

(next to conference site)

Keyword: UECT

You can book a room from this contingent until latest **May 10, 2010**.

Single room: 98 € (Superior: 110 €) per room/night

Double room: 118 € (Superior: 130 €) per room/night

Breakfast: 17 €

Parking tax: 9,90 €/day

InterCityHotel Ulm

Bahnhofplatz 1, D-89073 Ulm

Phone +49(0)731 / 96 55-0

www.intercityhotel.de

(near the Ulm railway station)

Keyword: UECT

You can book a room from this contingent until latest **May 28, 2010**.

Single room: 67,00 € per room/night

Double room: 90,00 € per room/night

Breakfast: included

InterCityHotel gives you free tickets for the bus transfer to the conference site (about 20 minutes)

You can easily find other hotels in Ulm/Neu-Ulm via internet www.hrs.de. The page provides multilingual service.

**Zentrum für Sonnenenergie- und
Wasserstoff-Forschung (ZSW)**

Prof. Dr. Werner Tillmetz

**Weiterbildungszentrum Brennstoffzelle
Ulm e.V. (WBZU)**

Prof. Dr. Jürgen Garche

Daimler AG

Dr. Christian Mohrdieck

Dr. Arnold Lamm

Automotive Fuel Cell Cooperation (AFCC)

Dr. Georg Frank

Universität Ulm

Prof. Dr. Jürgen Behm

Registration

All participants are kindly requested to register to the registration office **latest June 7**:

General & Registration Office

(Contact for participants)

Weiterbildungszentrum Brennstoffzelle Ulm (WBZU)

Ms. Manuela Egger

Phone: +49 (0)731 / 1 75 89-21

Fax: +49 (0)731 / 1 75 89-10

Email: participant@uct.de

Web: www.wbzu.de

Scientific Office

(Contact for speakers and poster contributors)

Zentrum für Sonnenenergie- und Wasserstoff-Forschung (ZSW)

Ms. Monika Broschinsky

Phone: +49 (0)731 / 95 30-606

Fax: +49 (0)731 / 95 30-666

Email: speaker@uct.de

Web: www.zsw-bw.de

Conference Office

(only during the conference on June 16 and 17)

Edwin-Scharff-Haus

Silcherstraße 40

D-89231 Neu-Ulm

Phone: +49 (0)731 / 80 08-222

Fax: +49 (0)731 / 80 08-223

Web: www.esh.neu-ulm.de

See also the UECT-Website: www.uct.de

Please return via email: participant@uct.de or
return via fax: +49 (0)731 / 1 75 89-10

12th UECT

Registration Form



Ulm ElectroChemical Talks 2010

Topic:
„2015“ Technologies
on Batteries and Fuel Cells

June 15

Tutorials on Batteries and Fuel Cells
Weiterbildungszentrum Brennstoffzelle Ulm e.V.

June 15

Workshop „Governmental Programs E-Mobility“
Edwin-Scharff-Haus

June 16 and 17

Conference
Edwin-Scharff-Haus



Please return via email: participant@uct.de or
 return via fax: +49 (0)731 / 1 75 89-10

	Incoming Payment by May 12, 2010	Incoming Payment after May 12, 2010
Tutorial ** (June 15)		
<input type="checkbox"/> Regular	250 €	300 €
<input type="checkbox"/> Students *	100 €	150 €
Workshop E-Mobility (June 15)		
<input type="checkbox"/> Regular / Students *	Free of Charge	
Conference (June 16 – 17)		
<input type="checkbox"/> Regular	700 €	750 €
<input type="checkbox"/> Students *	150 €	200 €
Tutorial ** and Conference (June 15 – 17)		
<input type="checkbox"/> Regular	850 €	950 €
<input type="checkbox"/> Students *	200 €	250 €
Workshop and Conference (June 15 – 17)		
<input type="checkbox"/> Regular	700 €	750 €
<input type="checkbox"/> Students *	150 €	200 €

* Please send a copy of student ID

** I will participate Tutorial Fuel Cells Tutorial Batteries

The registration fee includes admission to lectures and poster sessions, Get Together on Tuesday, dinner talk on Wednesday, lunches on Tuesday, Wednesday and Thursday, coffee breaks, parking ticket. A short abstract book and proceedings are also included.

Mr. Ms. Prof. Dr.

Family Name: _____

First Name: _____

Company/Institute: _____

Street/POB: _____

ZIP: _____

City: _____

Country: _____

Email: _____

Phone: _____

Fax: _____

I will join "Get Together" on Tuesday, June 15
 "Dinner Talk" on Wednesday, June 16

Bank transfer

Weiterbildungszentrum Brennstoffzelle Ulm e.V.

Sparkasse Ulm

Bank Code: 630 500 00

Account No.: 21 02 03 20

IBAN: DE87 6305 0000 0021 0203 20

SWIFT (BIC): SOLADES1ULM

Please remit your payment in Euro.

All bank fees must be covered by the sender.

Please indicate the name of the participant and
the code: " UECT 2010" .

Credit Card

EURO/MASTER VISA

Card No. _____

Verification No. _____

Expiration Date _____

Name Cardholder _____

You will receive a confirmation of registration.

Cancellation of Registration

The General & Registration Office (Weiterbildungszentrum Brennstoffzelle Ulm e.V.) must be notified of any cancellations in writing (by mail or fax).

There is no charge for cancellations made by May 14.

If the booking is cancelled latest May 21 a service charge of 30 % of the registration fee will be charged.

For later cancellations the complete conference fee will be charged. However, any registered participant may be replaced by a proxy.

Date

Place

Signature