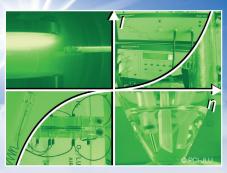


GESELLSCHAFT DEUTSCHER CHEMIKER

# **ELECTROCHEMISTRY 2012**

**Fundamental and Engineering Needs** for Sustainable Development



# TECHNISCHE UNIVERSITÄT MÜNCHEN **SEPTEMBER 17<sup>TH</sup> - 19<sup>TH</sup>. 2012**









# Conference jointly organized by

Fachgruppe Angewandte Elektrochemie



Fachgruppe Analytische Chemie Arbeitskreis Elektrochemische Analysenmethoden (ELACH, GDCh)



Deutsche Bunsengesellschaft für Physikalische Chemie (DBG)



DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V. (DECHEMA)



Arbeitsgemeinschaft elektrochemischer Forschungsinstitutionen e.V. (AGEF)



Gesellschaft für Korrosionsschutz e.V. (GfKORR)



Deutsche Gesellschaft für Galvano- und Oberflächentechnik e.V. (DGO)

COMMITTEES WELCOME

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Germany

Christiane Dörr GDCh; Frankfurt, Germany Silvia Kirrwald GDCh; Frankfurt, Germany

# Dear colleagues,

the organizing committee of the conference "ELECTROCHEMISTRY 2012: Fundamental and Engineering Needs for Sustainable Development" has the pleasure to invite you to visit Munich, Germany on September 17–19, 2012.

The theme of the meeting emphasizes the central role of electrochemical sciences for meeting the societal needs in the 21st century. The conference aims at providing an inspiring forum to discuss the challenges faced by electrochemistry research and engineering. Therefore, the conference program will link fundamental and applied aspects, reflecting the multidisciplinary nature of today's electrochemistry.

Munich is located in the heart of Bavaria and has become a hightech center amidst the beautiful scenery of the "Alpenvorland". The Technische Universität München is one of the leading universities in Germany and home to about 31000 students. It is organized in three main campuses, the Science & Technology campus in Garching, the Life & Food Sciences Center in Weihenstephan, both north of Munich, and the Main Campus in the city center, where the conference will be held. The lecture halls are equipped with up-to-date technology; the courtyard as well as the "Immatrikulationshalle" (Exhibitor Room) where exhibitions and coffee breaks take place, provide a stimulating atmosphere for lively debates. The famous "Oktoberfest" will start the weekend after the conference, which might perhaps be one more reason to extend your stay in Munich.

The conference "ELECTROCHEMISTRY 2012: Fundamental and Engineering Needs for Sustainable Development" wants to carry on the spirit of the successful meetings "Electrochemistry 2008" and "Electrochemistry 2010" in Gießen and Bochum. As before, the meeting will be held in English, and we hope for a lively international participation.

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K. Krischer & H. Gasteiger (Conference Chairs)

DEADLINES	
April 30, 2012	Application deadline for the Promotion Prize in Applied Electrochemistry
May 2, 2012	Abstract submission deadline
May 15, 2012	J.W. Schultze Prize application deadline
June 1, 2012	Notification of acceptance of talks/posters
June 29, 2012	Deadline for scholarship
July 15, 2012	Deadline for early registration (additional 50 € fee for late registration)
July 31, 2012	Last-minute poster submission deadline
August 16, 2012	Deadline for cancellation (full refund minus 25 € processing fee)

Monday, September 17, 2012				
11:00 - 13:00	Registration (Exhibitor Room)			
13:00 – 13:15	Welcome (Audimax lecture hall)			
13:15 – 14:05	Plenary Lecture by Jürgen Janek			
14:05 – 14:55	Plenary Lecture by Wolfgang Lubitz			
14:55 – 15:30	Coffee Break (Exhibitor Room)			
15:30 - 17:50	3 parallel sessions with contributed papers			
18:00 – 21:00	Poster Session with free drinks and snacks			
	Tuesday, September 18, 2012			
09:00 - 09:50	Plenary Lecture by Hubert Girault			
09:50 - 10:20	Coffee Break (Exhibitor Room)			
10:20 – 12:30	3 parallel sessions with Keynote Lectures followed by contributed talks			
12:30 - 14:00	Lunch			
14:00 – 15:30	3 parallel sessions with Keynote Lectures followed by contributed talks			
15:30 – 16:00	Coffee Break (Exhibitor Room)			
16:00 – 18:00	3 parallel sessions with contributed papers			
19:30	Conference Dinner & Awards Presentation in the "Festsaal" of the Augustiner Keller (www.augustinerkeller.de/en/Restaurant/The_Festsaal.htm)			

# Wednesday, September 19, 2012

09:00 – 09:50	Plenary Lecture by Thomas Moffat		
09:50 – 10:20	Coffee Break (Exhibitor Room)		
10:20 – 12:30	I) Symp. in Honor & Memory of Dieter Kolb Keynote Lectures and contributed talks		
	II) 2 parallel sessions with Keynote Lectures followed by contributed talks		
12:30 - 14:00	Lunch		
14:00 – 15:30	I) Symp. in Honor & Memory of Dieter Kolb Keynote Lectures and contributed talks		
	II) 1 parallel session with Keynote Lectures followed by contributed talks		
15:30 – 16:00	Coffee Break (Exhibitor Room)		
16:00 – 17:40	Symp. in Honor & Memory of Dieter Kolb Keynote Lectures and contributed talks		
17:40 – 18:00	Closing remarks		

#### INVITED LECTURERS

INVITED LECTURERS

To contribute to the high scientific quality of the conference, Plenary and Keynote Lectures given by internationally recognized scientists from Germany and abroad were invited by the organizers. The topics of these talks cover a broad spectrum of problems and new trends in the field of electrochemistry.

# ▶ PLENARY LECTURES

#### Hubert Girault, Lausanne/CH

Hydrogen Evolution and CO<sub>2</sub> Reduction at Soft Interfaces

### Jürgen Janek, Gießen/D

Electrodes on Solid Electrolytes – From High-Temperature Fuel Cells to Lithium Batteries

# Wolfgang Lubitz, Mülheim/D

Water Splitting and Hydrogen Production in Nature: Blueprints for Photoelectrocatalytic Processes

# Thomas Moffat, Gaithersburg/USA

Superconformal Electrodeposition for 3-D Interconnects

# ▶ KEYNOTE LECTURES

# Toshio Fuchigami, Tokyo/J

Selective Electrochemical Fluorination of Organic Molecules and Macromolecules

#### Wolfram Fürbeth, Frankfurt/D

New Ways of Corrosion Protection for Light Metals Using Nanoparticles or Nanocapsules

# Anke Hagen, Copenhagen/DK

Solid State Electrochemistry Applied to Solid Oxide Fuel and Electrolysis Cells

#### Bernhard Kaiser, Darmstadt/D

Solar Hydrogen Generation: A Challenge for Photoelectrochemistry

#### Ulrike Kramm, Berlin/D

Fe-N-C Catalysts for PEM Fuel Cells – A Breakthrough in the Development of Cheap Oxygen Reduction Catalysts?!

# Serge Lemay, Twente/NL

Electrochemical Nanofluidics: Mesoscopic and Single-Molecule Limits

# Jan Rossmeisl, Copenhagen/DK

Universality in Activity for Oxygen Reduction and Oxygen Evolution

#### Fritz Scholz, Greifswald/D

Attacking Electrodes by Free Oxygen Radicals: A Tool for Surface Modification

# Siegfried Waldvogel, Mainz/D

Electroorganic Synthesis at Hard and Soft Matter Modified Electrodes

# Margret Wohlfahrt-Mehrens, Ulm/D

New Materials for Lithium Batteries: Recent Developments and Perspectives

# Symposium in Honor and Memory of Dieter M. Kolb

# **▶** KEYNOTE LECTURES

#### Richard Alkire, Urbana/USA

Multiscale Simulation of Surface Reaction and Diffusion during Electrochemical Nucleation and Growth

#### Achim Hassel, Linz/A

Flexible Electronics Research with the Scanning Droplet Cell

# Ludwig Kibler, Ulm/D

Electrochemical Surface Science: The Scientific Accomplishments of the Late Dieter M. Kolb

#### TRAVEL GRANTS / AWARDS

We would like to encourage oral and poster contributions from all areas of electrochemistry and electrochemical engineering. The Poster Session will be on Monday from 18:00 to 21:00 o'clock, but posters will be left for viewing for the entire duration of the conference.

Metrohm Autolab is sponsoring 3 Student/Postdoc Poster Awards (3000 € in total). Posters will be judged by the Award Committee appointed by the Scientific Advisory Board, and winners will be announced at the conference dinner.

Abstracts for oral and poster contributions need to follow the style quidelines published on the conference website:

#### www.gdch.de/electrochemistry2012

Eight different Sections on the following topics are being planned:

- A. New types of batteries and electrochemical storage concepts and devices
  - (e.g., lithium-ion batteries (LiBs), post-LiBs, redox-flow batteries)
- B. Electrocatalysis, fuel cells, and electrolyzers (e.g., catalyst synthesis, electrode characterization, electrochemical engineering modeling)
- **C. Semiconductor- and photo-electrochemistry** (e.g., photo-electrolysis of water, dye-sensitized solar cells)
- D. Solid-state electrochemistry, ionic liquids, and unconventional electrolytes

(e.g., materials for solid-oxide fuel cells and electrolyzers)

- E. Biosensors and electroanalysis (e.g., enzymatic electrochemistry)
- F. Advances in electrochemical synthesis and production (e.g., electroorganic synthesis)
- **G.** Corrosion and new deposition/coating strategies (e.g., electrochemical machining, electroplating)
- H. Symposium in Honor and Memory of Dieter M. Kolb –
   Interfacial and fundamental electrochemistry
   (e.g., ab-initio modeling, atomically resolved surface probes, nano-electrochemistry, nano-fluidics).

# SCHOLARSHIPS

The GDCh Divisions of Applied Electrochemistry and Analytical Chemistry as well as the Local Organizing Committee offer a limited number of scholarships to student/postdoc contributors (talk or poster). To be considered, submit your CV (1 page), your publication list, and your abstract together with the application form at www.gdch.de/stipendien and send it to tg@gdch.de. by June 29, 2012.

# ► SCIENTIFIC AWARDS



# Promotion Prize in the Field of Applied Electrochemistry

The division of Applied Electrochemistry of the Gesellschaft Deutscher Chemiker e.V. (German Chemical Society, GDCh) awards the Promotion Prize in the Field of Applied Electrochemistry (Förderpreis auf dem Gebiet der Angewandten Elektrochemie) to a young chemist (less than 30 years of age) who has made an important contribution (doctoral thesis or scientific publication) to the field of electrochemistry. The prize is donated by BASF SE and consists of a diploma, 1000 €, a lecture by the Award recipient and travel expenses. The prize will be awarded during the conference dinner.

Applications and nominations should consist of a curriculum vitae, a letter of support, and three copies of the scientific contribution and must be submitted by **April 30, 2012** to:

GDCh-Geschäftsstelle

#### Ulrike Bechler

Varrentrappstr. 40-42 D-60486 Frankfurt am Main E-Mail: U.Bechler@gdch.de www.gdch.de/electrochemie



# Joachim Walter Schultze Prize of the AGEF

This prize of the AGEF (Working Party of Electrochemical Research Institutions) will be awarded at the Electrochemistry 2012 to a young electrochemist who is at the begining of her/his scientific career, has made a significant contribution to electrochemical research, and has demonstrated a visible independent profile.

Send applications to gunther.wittstock@uni-oldenburg.de by May 15, 2012.

For more details see: www.agef.org/jwspreis/index.html

# Monday, September 17, 2012

# 18:00 – 21:00 **Poster Session**

with free drinks and snacks, including beer from TUM's brewery at Weihenstephan.

# Tuesday, September 18, 2012

#### 19:30 **Conference Dinner and Awards Presentation**

(posters and prizes) in the "Festsaal" of the Augustiner Keller. Enjoy local beer from the keg and food to the sounds of our band. (www.augustinerkeller.de/en/Restaurant/ The\_Festsaal.htm)

Price p.p.\*:

Regular Participants: € 35 Students/Postdocs: € 25

Booking required

\* 19% VAT included



#### LOCATION

The conference site is at the main downtown campus of the Technische Universität München (see overview map at the end of the flyer). Plenary Lectures and the Poster Session will be held in the Audimax Lecture Hall. The exhibitor booths, the registration desk, and the coffee tables are in the Exhibitor Room ("Immatrikulationshalle") which are shown in the detailed map at the end of the flyer. The parallel sessions are held in rooms 0602 and 0606 in the Theresianum as well as in the Tower Room 2400.

If you enter the building from the main entrance at Arcisstrasse 21, 80333 München, continue straight through the inner courtyard and you will find the Exhibitor Room at your right. You can also enter from Theresienstrasse, where you will find the Audimax Lecture Hall on your right and the Exhibitor Room on your left. The closest subway stop is the U2 Theresienstrasse (red line; see detailed map), from where you will reach the conference site within five minutes walk.

# TRAVEL INFORMATION

# Arrival by plane

From the Munich airport (MUC), take the subway lines S1 (blue line) direction "Ostbahnhof" or S8 (yellow line) direction "Herrsching", departing every 20 minutes. Exit at "Hauptbahnhof" (Munich main train station) and change to the subway line U2 direction "Feldmoching" (red line). Exit the subway at the second stop "Theresienstrasse" and you will be within 5 minutes walk from the conference site. The trip from the airport to the conference site should take 60 to 75 minutes.

# Arrival by train

At the Munich main train station ("Hauptbahnhof"), take the subway line U2 (red line) direction "Feldmoching" and exit at "Theresienstrasse" (second stop).

#### Arrival by car

If you are planning to arrive by car, please be aware that parking near the university is very difficult to find.

# Public Transport within Munich:

Most locations within Munich can be reached conveniently by subway (S-lines or U-lines).

For maps see: www.munich-info.de/travel/mvv\_en.html

# REGISTRATION

Please register online via internet not later than July 15, 2012 at:

# www.gdch.de/electrochemistry2012

After July 15, 2012, a late registration fee of € 50 will be added. All tickets and conference papers (incl. book of abstracts) will be given to participants upon check-in at the registration desk.

Participants are requested to wear their conference badges at all times for identification and admittance to the conference rooms.

For online-registration, payment by credit card or direct debit (only with German bank account) is preferred. If you want to pay by bank transfer (free of bank commission) please do not forget to print out the invoice at the end of your online-registration.

Please pay the fees to the following account (free of bank commission):

GESELLSCHAFT DEUTSCHER CHEMIKER e.V. Commerzbank AG Frankfurt am Main Routing Number (BLZ) 500 800 00 Account No. (Kto.Nr.) 4 900 200 00

Code: 5304 / Electrochemistry 2012

#### Attention

Participants from EU countries except Germany please use IBAN (International Bank Account Number) and SWIFT-BIC (Bank Identifier Code) instead of Bank account and Bank name:

Gesellschaft Deutscher Chemiker e. V. Commerzbank AG Frankfurt am Main IBAN DE85 5008 0000 0490 0200 00

COBADEFFXXX

Code: 5304 / Electrochemistry 2012

# REGISTRATION FEES\*\*

	Early registration until July 15, 2012	From July 16, 2012
Member of joined scientific organizations	€ 200	€ 250
Non-member	€ 250	€ 300
Student (member)*	€ 100	€ 125
Student (non-member)*	€ 125	€ 175
Member, unemployed and retired	€ 100	€ 125
Gold member (with over 50 years of GDCh membership)	free of charge	free of charge
TUM student & employee***	€0	€0
Conference Dinner	€ 35	€ 35
Conference Dinner for student/postdoc	€ 25	€ 25

- \*) Fee applies to bachelor, master and Ph.D. students (valid student card or confirmation of supervisor required)
- \*\*) The registration fees are not liable to value added tax (tax exemption additional § 4 Nr. 22a UstG.)

The coffee breaks as well as the drinks & snacks during the Poster Session are included in the registration fee. A late registration fee of € 50 will be added after July 15, 2012.

If fees are paid in advance, but after **August 25, 2012**, we kindly ask participants to show proof of payment when claiming their tickets and conference papers at the conference office. Credit cards (Amex, Mastercard, VISA) will be accepted.

# CANCELLATION

Written cancellations received on or before **August 16, 2010** will be refunded less a  $\in$  25,- administration fee. After that date, the full amount of the invoice has to be paid. Requests for refund will not be accepted; however, registration may be transferred to another member of your organisation. In this case please send a note to tg@gdch.de .

If the conference is cancelled for whatever reason, fees paid will be refunded. Further recourse is excluded.

<sup>\*\*\*)</sup> Registration fees of TUM students & employees are sponsored by TUM

### **GENERAL INFORMATION**

#### LUNCH

Lunch can be taken in the local mensa in the Arcisstraße or in near by restaurants that offer a lunchtime snack. A list of locations will be available at the registration desk.

# ROOM RESERVATION

Rooms are booked for the participants in various hotels throughout the city.

Reservations can be made through the hrs booking system. The link can be found on our homepage.

# www.gdch.de/electrochemistry2012

The customers will be held accountable for non-occupancy of reserved rooms.

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# TRAVEL, ACCOMMODATION, AND OTHER GENERAL INFORMATION

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# INFORMATION CONCERNING THE SCIENTIFIC PROGRAM

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# INFORMATION BEFORE AND AFTER THE MEETING

Gesellschaft Deutscher Chemiker e. V. Congress Team / Electrochemistry 2012 P.O. Box 90 04 40 D-60444 Frankfurt am Main

Phone: +49 69 7917-358 (Silvia Kirrwald)

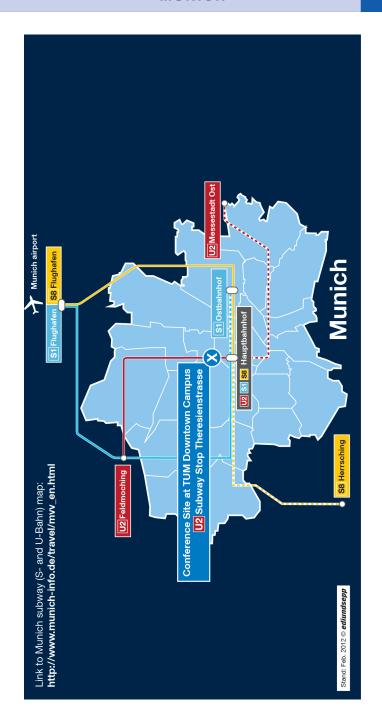
E-mail: tg@gdch.de

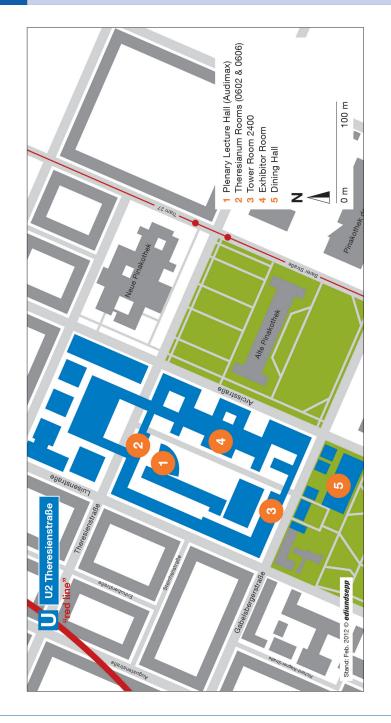
Internet: www.gdch.de/electrochemistry2012

Executive Director: Professor Dr. Wolfram Koch,

Registered charity no: VR 4453, Registergericht Frankfurt am Main

MUNICH





### **GDCh-COURSES 2012**

# www.gdch.de



# Analytische und präparative Elektrochemie (805/12)

Theorie und Praxis

Termin: 5. – 6. November 2012

Ort: Mainz

Leitung: Prof. Dr. Siegfried Waldvogel,

Prof. Dr. Rudolf Holze, Prof. Dr. Hans-J. Schäfer

# Elektroorganische Synthese (808/12)

Die Elektrode als nachhaltiges Reagenz

Termin: 7. – 9. November 2012

Ort: Mainz

Leitung: Prof. Dr. Siegfried Waldvogel,

Prof. Dr. Rudolf Holze



# Electrochemical energy storage devices (807/12)

An overview on materials, devices and applications

Date: November 19 – 20, 2012

Venue: Frankfurt/Main Organiser: Dr. Andrea Balducci

#### INFORMATION / REGISTRATION:

Gesellschaft Deutscher Chemiker e.V. German Chemical Society Continuing Education

Phone: +49 69 7917-291/-364

E-mail: fb@gdch.de

Internet: www.gdch.de/fortbildung

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