

Monday, September 17, 2012

Audimax

11:00	13:00	Registration	
13:00	13:15	Welcome	<i>K. Krischer</i>
13:15	14:05	Plenary lecture	Electrodes on solid electrolytes – from high-temperature fuel cells to lithium batteries <i>J. Janek, Gießen/DE</i> ; Chair: H. Gasteiger
14:05	14:55	Plenary lecture	Water splitting and hydrogen production in nature: blueprints for photoelectrocatalytic processes <i>W. Lubitz, Mülheim an der Ruhr/DE</i> ; Chair: H. Gasteiger
14:55	15:30	coffee break	

Tower Room (2300)

Session B - Electrocatalysis, fuel cells, and electrolyzers Chair: H. Baltruschat			
15:30	15:50	Electrode kinetics of (La,Sr)FeO ₃ in H ₂ /H ₂ O and O ₂ containing atmospheres	<i>S. Kogler, Vienna/AT</i>
15:50	16:10	<i>In situ</i> XPS studies during catalytic ethylene oxidation over a bimetallic Pt-Ag/YSZ catalyst electrode <i>A. Toghan, Hannover/DE</i>	
16:10	16:30	Studies of bioelectrocatalysis at carbon nanotube electrodes <i>M. Jönsson-Niedziolka, Warsaw/PL</i>	
16:30	16:50	Carbon nanostructured electrodes for micro-energy harvesting and sensor applications <i>L. Hussein, Freiburg/DE</i>	
16:50	17:10	Endohedral electrochemistry	<i>L. Dunsch, Dresden/DE</i>
17:10	17:30	Carbon monoxide adlayer oxidation on shape-controlled iridium nanoparticles	<i>K. A. Soliman, Ulm/DE</i>
17:30	17:50	Cooperative behavior during CO bulk electro-oxidation reaction on Pt microelectrode arrays <i>D.A. Crespo-Yapur, Strasbourg/FR</i>	
17:50	18:10	Award lecture: Joachim Walter Schultze Prize	
		A study of the catalytic interface for selected electrochemical processes: the implementation of electrochemical quartz crystal microbalance (EQCM) and rotating disk electrode (RDE) voltammetry <i>A. Ignaszak, Jena/DE</i>	

Theresianum Room (0606)

Session A - New types of batteries and electrochemical storage concepts and devices, Chair: J. Janek			
15:30	15:50	Electrode materials for high-power battery applications with enhanced rate capability – effect of oxygen non-stoichiometry and aliovalent doping	<i>R.A. Eichel, Eggenstein-Leopoldshafen/DE</i>
15:50	16:10	M _{0.5} TiOPO ₄ as high specific charge battery material	<i>P. Bleith, Villigen/CH</i>
16:10	16:30	Anion intercalation into graphite from ionic liquid based electrolytes for dual-ion cells	<i>T. Placke, Münster/DE</i>
16:30	16:50	Analysis and prediction of OCV curves of cathode blends	<i>J.P. Schmidt, Karlsruhe/DE</i>
16:50	17:10	Porous silicon impregnated carbon nano-spheres for s-block metal ion battery negative electrodes	<i>S. Polisski, Kyoto/JP</i>
17:10	17:30	<i>In-situ</i> study of solid electrolyte interphase evolution on HOPG using peak force tapping mode AFM	<i>C. Li, Santa Barbara/US</i>
17:30	17:50	Ion solvation and mobility in lithium-polyelectrolytes for battery applications	<i>A. Wohlfarth, Stuttgart/DE</i>
17:50	18:10	Prospects and limitations of redox-shuttle electrolyte additives for reversible overcharge protection of Li-ion batteries	<i>M. Wachtler, Ulm/DE</i>

Theresianum Room (0602)

Session C - Semiconductor- and photo-electrochemistry Chair: B. Kaiser			
15:30	15:50	TiO ₂ nanotubes – interdependence of substrate grain orientation and growth characteristics	<i>S. Leonardi, Garching/DE</i>
15:50	16:10	IR–spectroelectrochemical characterization of mesoporous TiO ₂ films	<i>T. Berger, Sevilla/ES</i>
16:10	16:30	Investigations on the instability of titanium dioxide film	<i>M. Fan, Bochum/DE</i>
16:30	16:50	Titanium oxycarbide supports for applications in electrocatalysis	<i>C. Ruediger, Garching/DE</i>
16:50	17:10	Focused ion beam (FIB)-assisted fabrication of combined boron-doped diamond AFM-SECM probes: FIB influences, characterization and application	<i>A. Eifert, Ulm/DE</i>
17:10	17:30	Differential photo-impedance spectroscopy	<i>A. Battistel, Bochum/DE</i>
17:30	17:50	Charge transfer in diamond-based biohybrid systems for energy harvesting applications	<i>R. Caterino, München/DE</i>

Poster Session with Drinks & Snacks

18:10 21:00

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9:00	9:50	Plenary lecture	Superconformal film growth <i>T.P. Moffat, Gaitthersburg/US, Chair: C. Donner</i>
9:50	10:20	coffee break	

Tower Room (2300)

Session B - Electrocatalysis, fuel cells, and electrolyzers
Chair: K. Mayrhofer

10:20	10:50	Keynote lecture Universality in activity for oxygen reduction and oxygen evolution <i>J. Rossmeisl, Lyngby/DK</i>
10:50	11:10	Computational studies of Pt nanoparticles in electrocatalysis – from basic principles to models for real systems <i>A. A. Auer, Mülheim/DE</i>
11:10	11:30	Size-selected platinum nanoclusters - a model system for fuel cell catalyst degradation <i>M. Arenz, Copenhagen/DK</i>
11:30	11:50	Electrochemistry of H ₂ O ₂ on Platinum: towards understanding ORR <i>I. Katsounaros, Düsseldorf/DE</i>
11:50	12:10	Core – shell fine structure and size-dependent morphology of dealloyed Pt bimetallic nanoparticle fuel cell electrocatalysts <i>M. Özarslan, Berlin/DE</i>
12:10	12:30	<i>In situ</i> high energy resolution XAS on electrocatalysts <i>M. Tromp, Munich/DE</i>
12:30	14:00	lunch
14:00	14:30	Chair: L. Dunsch Keynote lecture Fe-N-C catalysts for PEM fuel cells - a breakthrough in the development of cheap oxygen reduction catalysts?! <i>U.I. Kramm, Cottbus/DE</i>
14:30	14:50	Spectrophotometric and electrochemical observation of energy changes in the frontier orbitals of manganese porphyrins due to various meso-substituents <i>J. Masa, Bochum/DE</i>

Theresianum Room (0606)

Session A - New types of batteries and electrochemical storage concepts and devices; Chair: A. Fischer		
10:20	10:50	Keynote lecture Materials development for lithium ion batteries <i>M. Wohlfahrt-Mehrens, Ulm/DE</i>
10:50	11:10	Dual-ion cells - an option for stationary batteries <i>P. Bieker, Münster/DE</i>
11:10	11:30	Magneto tomography as non-destructive testing method (NDE/NDT) for electrochemical devices <i>J. Wackerl, Jülich/DE</i>
11:30	11:50	Influence of carbon material porosity in gas diffusion electrodes for Li-O ₂ cells <i>I. Bardenhagen, Bremen/DE</i>
11:50	12:10	Colloidal manganese oxide nanoparticles as bifunctional catalysts for oxygen reduction and evolution reactions in lithium/air batteries <i>M. Augustin, Oldenburg/DE</i>
12:10	12:30	Production and characterization of oxygen electrodes for use in Li-air batteries <i>N. Wagner, Stuttgart/DE</i>
14:00	14:20	Chair: R. Eichel Investigations on new electrode materials for vanadium redox flow batteries <i>H. Fink, München/DE</i>
14:20	14:40	Development of carbon nanotube based bipolar plates for vanadium redox flow batteries <i>B. Caglar, Pfinztal/DE</i>

Theresianum Room (0602)

Session C - Semiconductor- and photo-electrochemistry Chair: J. Garrido		
10:20	10:50	Keynote lecture Solar hydrogen generation: a challenge for photoelectrochemistry <i>B. Kaiser, Darmstadt/DE</i>
10:50	11:10	Hybrid photoanodes for visible light-driven photooxidation of water to oxygen <i>R. Beránek, Bochum/DE</i>
11:10	11:30	Screening of photoelectrochemical properties of Fe-W-O and Ti-W-O materials libraries using electrochemical robotics <i>K. Sliozberg, Bochum/DE</i>
11:30	11:50	Synthesis and characterization of electrochemically prepared CdTe micro- and nanostructures on conducting polymer for solar cells application <i>M.E. Osial, Warsaw/PL</i>
11:50	12:10	Electrodeposition of functional thin films of ZnO on microstructured electrode arrays <i>M. Stumpp, Giessen/DE</i>
12:10	12:30	<i>Ab-initio</i> calculations on the formation of Pt nano-islands on oxidized kink sites of a <i>n</i> -type H:Si(111) surface <i>D. Fantauzzi, Ulm/DE</i>
14:00	14:30	Chair: K.-D. Kreuer Keynote lecture Solid state electrochemistry applied to solid oxide fuel and electrolysis cells <i>A. Hagen, Roskilde/DK</i>
14:30	14:50	Immobilized K ₂ CO ₃ (aq) as a new potential electrolyte for synthetic fuel production by co electrolysis of CO ₂ and steam <i>P. L. Mollerup, Roskilde/DK</i>

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Tower Room (2300)

Session B - Electrocatalysis, fuel cells, and electrolyzers

14:50	15:10	Oxygen reduction reaction on perovskite/carbon composites. A synergetic electrocatalysis? <i>T. Poux, Strasbourg/FR</i>
15:10	15:30	Stability of electrode materials for electrochemical energy conversion <i>J. C. Meier, Düsseldorf/DE</i>
15:30	16:00	coffee break Chair: U. Kramm
16:00	16:20	Activity of platinum submonolayers on defect-rich and nanostructured gold <i>C. Ostermayr, München/DE</i>
16:20	16:40	Exceeding activities of Pd monomers and dimers: hydrogen electrocatalysis on bimetallic alloy surfaces <i>Y. Pluntke, Ulm/DE</i>
16:40	17:00	Mass spectrometry coupled PEM-FC operated with hydrogen and deuterium – new insights into the dynamics in the membrane processes <i>T. Abdul-Redah, Berlin/DE</i>
17:00	17:20	Oxidation of methanol at bead Pt single crystals using a new DEMS cell type <i>A. A. Abd-El-Latif, Bonn/DE</i>
17:20	17:40	Effect of hollow graphitized spheres supported Pt cathode catalyst on MEA performance in a middle temperature DMFC <i>T. Tesfu-Zeru, Frankfurt am Main/DE</i>
17:40	18:00	Spatially resolved characterization of a DMFC aged under methanol depletion <i>K. Wippermann, Jülich/DE</i>

Theresianum Room (0606)

Session G - Corrosion and new deposition/coating strategies

14:40	15:10	Keynote lecture New ways of corrosion protection for light metals using nanoparticles or nanocapsules <i>W. Fürbeth, Frankfurt am Main/DE</i>
15:10	15:30	Corrosion resistance and adhesive properties of plasma modified oxide films on zinc alloy coatings <i>K. Pohl, Paderborn/DE</i>
16:00	16:20	Chair: V. Garcia-Morales Electrochemical characterization of corrosion and inhibition of magnesium materials in alkaline solution <i>S. Koehler, Dresden/DE</i>
16:20	16:40	Combined high resolution SKP-SECM investigations for the visualization of local corrosion processes <i>A. Majusich, Bochum/DE</i>
16:40	17:00	Polyether suppressors for filling sub 30 nm features by direct plating <i>M. Nagar, Leuven/BE</i>
17:00	17:20	Investigations on the influence of magnetic fields on nickel deposition <i>M. Weinmann, Saarbrücken/DE</i>
17:20	17:40	Electrochemical properties of organic-inorganic hybrid coatings obtained by sol-gel process on galvanized steel <i>R. B. Figueira, Lisboa/PT</i>
17:40	18:00	Drifting solitary waves in a reaction-diffusion medium with differential advection <i>A. Yochelis, Sede Boqer/IL</i>

Theresianum Room (0602)

Session D - Solid-state electrochemistry, ionic liquids, and unconventional electrolytes

14:50	15:10	<i>In-situ</i> study of bias-induced lithium nanoparticle growth on a Lithium-ion conductive glass ceramic <i>B. Roling, Marburg/DE</i>
15:10	15:30	Lithium gel polyelectrolytes with high electrochemical stability produced by in-situ polymerisation of novel lithium salts <i>M. Grünebaum, Münster/DE</i>
16:00	16:20	Chair: A. Hagen Modelling electrolytes for Lithium batteries - the impact of transport properties on battery performance <i>M. Mutke, Münster/DE</i>
16:20	16:40	Proton conducting phase-separated multiblock copolymers with sulfonated poly(phenylene sulfone) blocks for electrochemical applications: preparation, morphology, hydration, mechanical properties and transport <i>K.-D. Kreuer, Stuttgart/DE</i>
16:40	17:00	Hydroxide conductivity of anion exchange membranes for alkaline polymer fuel cells <i>M.G. Marino, Stuttgart/DE</i>
17:00	17:20	Charged states at phenazine units in polyaniline: <i>in situ</i> ESR/UV-vis-NIR and ATR-FTIR spectroelectrochemistry <i>E. Dmitrieva, Dresden/DE</i>
17:20	17:40	Electrochemistry of sodium tetrachloroaurate (NaAuCl ₄) in a deep eutectic solvent <i>F. M. Krüger, Berlin/DE</i>
17:40	18:00	Mechanistic studies of zinc electrodeposition from deep eutectic electrolytes B. Gollas, Graz/AT

Conference Dinner & Awards Presentation

19:30

Wednesday , September 19, 2012

Audimax

9:00	9:50	Plenary lecture	Hydrogen evolution and CO ₂ reduction at soft interfaces <i>H. Girault, Lausanne/CH, Chair: G. Wittstock</i>
9:50	10:20	coffee break	

Tower Room (2300)

Symposium in Honor and Memory of Dieter Kolb

Session H1 - Interfacial electrochemistry

		Chair: C. Donner
10:20	10:50	Keynote lecture Electrochemical surface science: the scientific accomplishments of the late Dieter M. Kolb (1942-2011) <i>L. A. Kibler, Ulm/DE</i>
10:50	11:10	Influence of electrochemical potential on molecular friction: organic adsorbates at Au(111) <i>S. Wezista, Bonn/DE</i>
11:10	11:30	Electrochemical single molecule conductance studies in aqueous and ionic liquid electrolytes <i>R.J. Nichols, Liverpool/GB</i>
11:30	11:50	Metallization of self-assembled monolayers: the current status <i>M.I. Muglal, Düsseldorf/DE</i>
11:50	12:10	Surface modification of a n-Si(111) electrode through aldehyde grafting and subsequent metallization: from metal to semiconductor substrates <i>M. Metzler, Ulm/DE</i>
12:10	12:30	AFM investigations on nucleation and growth mechanisms of electrodeposited Cu and Ni on CFRP <i>P. Lammel, München/DE</i>
12:30	14:00	lunch

Theresianum Room (0606)

Session F - Advances in electrochemical synthesis and production

		Chair: S. Waldvogel
10:20	10:50	Keynote lecture Selective electrochemical fluorination of organic molecules and macromolecules <i>T. Fuchigami, Yokohama/JP</i>
10:50	11:10	Radicals: important intermediates in organic electrosynthesis <i>H. J. Schäfer, Münster/DE</i>
11:10	11:30	Electrode potential distribution of oxygen depolarized cathodes for chlor-alkali-electrolysis <i>G. Toepell, Dortmund/DE</i>
11:30	11:50	Adaption of the Uhde single element electrolysis technology to the ammonium peroxodisulfate <i>D. Hoormann, Dortmund/DE</i>
11:50	12:10	Electrochemistry in waste water treatment - degradation of pharmaceutical trace pollutants <i>S. Hild, Frankfurt am Main/DE</i>
12:10	12:30	PPy-coated electrochemically switchable membranes <i>C. Weidlich, Frankfurt am Main/DE</i>

Theresianum Room (0602)

Session D - Solid-state electrochemistry, ionic liquids, and unconventional electrolytes

		Chair: K.-M. Mangold
10:20	10:40	The electrified gold/ionic liquid interface <i>M. Gnahm, Ulm/DE</i>
10:40	11:00	X-ray photoelectron spectroscopy studies on ionic liquid electrolytes - from post mortem to in situ electrochemical XPS <i>A. Foelske-Schmitz, Villigen PSI/CH</i>
11:00	11:20	Oxidative electrochemical cleavage of lignin in protic ionic liquids <i>R. Hempelmann, Saarbrücken/DE</i>
Promotion Prize in the Field of Electrochemistry		
11:20	11:50	3D visualization of PEMFC electrodes using FIB nanotomography <i>S. Zils, Darmstadt/DE</i> Magnetic gradients as novel structuring tool <i>K. Tschulik, Dresden/DE</i>
Session E - Biosensor & electroanalysis; Chair: F. Scholz		
11:50	12:10	Recent trends in development and applications of silver amalgam-based working electrodes in environmental electroanalysis <i>V. Vyskočil, Prague/CZ</i>

Wednesday, September 19, 2012

Tower Room (2300)

Symposium in Honor and Memory of Dieter Kolb

Session H1 - Interfacial electrochemistry

		Chair: R. Nichols
14:00	14:30	Keynote lecture Multiscale simulation of surface reaction and diffusion during electrochemical nucleation and growth <i>R. Alkire, Urbana, IL/US</i>
14:30	14:50	Structured magnetic electrodeposits by means of magnetic gradient fields <i>M. Uhlemann, Dresden/DE</i>
14:50	15:10	Anodic electrochemical texturing of zinc oxide thin films: mechanistical considerations and application in thin-film silicon solar cells <i>S.E. Pust, Jülich/DE</i>
15:10	15:30	The influence of electrochemical conditions and surface active species on the electrodeposition of noble metal nanoparticles on Ti-V-Al alloys <i>O. Schneider, Garching/DE</i>
15:30	16:00	coffee break
		Chair: L. Kibler
16:00	16:30	Keynote lecture Flexible electronics research with the scanning droplet cell <i>A. W. Hassel, Linz/AT</i>
16:30	16:50	Microcalorimetric studies on the electrochemical lithium bulk deposition and intercalation in graphite <i>M. J. Schmid, Karlsruhe/DE</i>
16:50	17:10	Spectroscopic study of orientation of different intermediate species during Oxygen reduction reaction (ORR) on Germanium (100) <i>S. Nayak, Düsseldorf/DE</i>
17:15	17:25	closing: H. Gasteiger

Theresianum Room (0606)

Session F - Advances in electrochemical synthesis and production

		Chair: T. Fuchigami
14:00	14:30	Keynote lecture Electroorganic synthesis at hard and soft matter-modified electrodes <i>S. Waldvogel, Mainz/DE</i>
14:30	14:50	Electrocatalytic synthesis of Hydrogen Peroxide <i>F. Hasché, Berlin/DE</i>
		Session H2 - Nanoelectrochemistry
14:50	15:10	Electrodeposition of nanoparticles at the liquid-liquid interface <i>Y. Gründer, Manchester/GB</i>
15:10	15:30	Electrochemical and spectroscopical investigation of transition metal complexes <i>N. Jacobs, Oldenburg/DE</i>

		Chair: Y. Gründer
16:00	16:30	Keynote lecture Electrochemical nanofluidics: mesoscopic and single-molecule limits <i>S. Lemay, Enschede/NL</i>
16:30	16:50	Electrochemical synthesis of Fe ₇₀ Pd ₃₀ nanowires as new actuator materials <i>V. Haehnel, Dresden/DE</i>
16:50	17:10	Nonequilibrium statistical mechanics of nanoscale electrochemical systems <i>V. Garcia-Morales, München/DE</i>

Theresianum Room (0602)

Session E - Biosensor & electroanalysis

		Chair: W. Schuhmann
14.00	14.30	Keynote lecture Attacking electrodes by free oxygen radicals: a new tool for surface modification and for studying surface properties <i>F. Scholz, Greifswald/DE</i>
14.30	14:50	Electrocatalytic glucose oxidation using FAD-dependent glucose dehydrogenase and redox polymers modified with phenothiazine derivatives <i>M. Shao, Bochum/DE</i>
14.50	15.10	Catalytically active supramolecular protein architectures of cellobiose dehydrogenase and cytochrome c on electrodes <i>S.C. Feifel, Wildau/DE</i>
15.10	15.30	Influence of solution composition on biosensor signals in physiological measurements <i>C. Weber, Ulm/DE</i>
		Chair: F. Lisdat
16.00	16.20	Exploring the limits of thin layer coulometry with ionophore based liquid ion-selective membranes <i>A. Shvarev, Geneva/CH</i>
16:20	16.40	Langmuir-Blodgett monolayers of iron oxide nanoparticles and oleic acid <i>J. Witt, Oldenburg/DE</i>
16.40	17.00	Progress in microbial bioelectrochemical systems: recent developments in electrode architecture and performance <i>U. Schröder, Braunschweig/DE</i>