Invitation

General information

The International Symposium on ElectroChemical Machining Technology INSECT 2009 celebrates its 5th anniversary this year, and will be held in Dresden again. Since the first conference in 2004 the INSECT has become a successful symposium for a well-chosen topic in electrochemistry – ECM technology.

This international symposium will provide a unique forum to exchange ideas, to discuss and share experiences among researchers and engineers involved in ECM technology. In addition to fundamental investigations of the electrode/electrolyte interface and applied material science, the spectrum will be extended to cover a wider variety of electrochemical topics. In addition to fundamental investigations of the electrode/electrolyte interface and applied material science, the spectrum will be extended to cover a wider variety of electrochemical topics. Technical aspects like quality, efficiency and equipment development are in focus of the upcoming conference where prominent international speakers present their latest results.

Advisory board

- **M. Baumgärtner**, Leistritz Turbomaschinen Technik GmbH Nuremberg, Germany
- **J. Deconinck**, Vrije Universiteit Brussels, Belgium
- **J. Hackenberg**, Robert Bosch GmbH Schwieberdingen, Germany
- **M. M. Lohrengel**, Heinrich-Heine-University Düsseldorf, Germany
- **A. Michaelis**, Fraunhofer IKTS Dresden, Germany
- **A. Schubert**, Chemnitz University of Technology, Germany
- **G. Schmitt**, INFINKOR-Institute for Maintenance and Corrosion Protection Technology n.f.p.Ltd Iserlohn, Germany
- **H. Reinecke**, IMTEK Freiburg, Germany
- **G. Wittstock**, Carl-von-Ossietzky University Oldenburg, Germany
- **B. Hommel**, SITEC GmbH Chemnitz, Germany
- **D. Landolt**, Swiss Federal Institute of Technology Lausanne EPFL Switzerland

Conference organizers

A. Michaelis, M. Schneider
Fraunhofer Institute for Ceramic Technologies and Systems
Winterbergstrasse 28, 01277 Dresden, Germany

M. M. Lohrengel
Heinrich-Heine-University Düsseldorf,
Institute of Molecular Physical Chemistry
Universitätsstrasse 1, 40225 Düsseldorf, Germany

Program

November 26th

9:00	Registration	
9:30	Greetings A. Michaelis, Fraunhofer IKTS Dresden	
Session 1	Fundamentals	Chairperson A. Michaelis
9:45	D. Landolt, Swiss Federal Institute of Technology Lausanne EPFL (Switzerland) **The role of surface films in electrochemical machining**	
10:25	G. Schmitt, INFINKOR-Institute for Maintenance and Corrosion Protection Technology n.f.p.Ltd Iserlohn (Germany) **Do we understand flow effects in nanodistance from the interface?**	
11:05 - 11:30	Coffee break	
Session 2	Simulation and modeling	Chairperson M.M. Lohrengel
11:30	B. Mollay, CEST, Centre of Competence in Electrochemical Surface Technology (Austria) **A modeling strategy for the optimization of high-precision electrochemical machining processes**	
12:00	T.R. Idrisov, Ufa State Aviation Technical University (Russia) **Conceptual phenomenological model of electrochemical surface nano-structuring**	
12:30	N. Smets, Vrije Universiteit Brussel (Belgium) **Towards advanced pulse electrochemical machining (PECM) simulations**	
13:00 - 14:00	Lunch break	
14:00	J. Kozak, Warsaw University of Technology (Poland) **Electrochemical machining with vibrating tool electrode**	
0	P. Raffelstetter, University of Vienna (Austria) **Electrochemical micromachining of complex photolithographically patterned substrates: a modeling study on the influence of the design**	
15:00	T. Pajak, Philips Consumer Lifestyle Drachten (Netherlands) **Simulation of shaving cap finishing processes by multiphysics approach**	
Session 3	Applications, part I	Chairperson B. Hommel
15:30	G. Fürderer, University of Freiburg (Germany) **Coated carbon fibres used as tooling electrodes for micro electrochemical machining**	
16:00	M. Hackert, Chemnitz University of Technology (Germany) **Generating plane and microstructured surfaces applying Jet Electrochemical Machining**	
16:30 - 17:00	Coffee break	
17:00	T. Gmelin, ECMTEC GmbH Holzgerlingen (Germany) **The machining of large areas with electrochemical micromilling**	
17:30	Murali M. Sundaram, Center for Nontraditional Manufacturing Research, University of Nebraska-Lincoln (USA) **Investigation of energy efficiency and sludge disposal in electrochemical machining of nickel alloy**	
18:00	M. Buhlert, Ingenieurbüro Magnus Buhlert Bremen (Germany) **Electropolishing and electrochemical structuring of titanium**	
20:00	Symposium dinner	

November 27th

Session 4	Materials	Chairperson D. Landolt
9:00	M.M. Lohrengel, Heinrich-Heine-University Düsseldorf (Germany) **Shaping of new materials by ECM**	
9:30	S. Schroth, Fraunhofer IKTS Dresden (Germany) **A novel approach of in-situ investigation of the surface topography under near ECM-conditions**	
10:00	A. Lesch, Carl-von-Ossietzky University Oldenburg (Germany) **Two-way anodic dissolution of low alloyed steel in chloride/nitrate mixed electrolytes**	
10:30	C. Hammer, Heinrich-Heine-University Düsseldorf (Germany) **Oxygen detection and quantification during the ECM-process**	
11:00 - 11:30	Coffee break	
Session 5	Applications, part II	Chairperson M. Schneider
11:30	H.-P. Schulze, Otto-von-Guericke University Magdeburg (Ger) **Adapted process energy sources for the pulsed electrochemical micromachining (PECMM)**	
12:00	B. Hommel, SITEC GmbH Chemnitz (Germany) **In-process optimization of the working gap as a precondition for the regulation of electrodes in ECM**	
12:30	A. Ruszaj, Cracow University of Technology (Poland) **Electrochemical machining process conditions influence on machinability and electrodes polarization**	
13:00	Wrap up	
13:15 - 14:00	Lunch break	
14:00	Visitor tour through Fraunhofer IKTS / Ceramics Meeting Point	
15:00	End of symposium	