

INSECT 2012

Conference Programme

Place of Conference:

Great Conference Room of Polish Academy of Arts and Sciences; Slawkowska Street, 17

Thursday, 18th October 2012

9:00 : 9:40 **Registration and coffee for invitation**

9:40 - **Greetings** - Maria Zybura, The Institute of Advanced Manufacturing Technology, Krakow

9:45 - **Presentation of the Institute of Advanced Manufacturing Technology** - Lucyna Jaworska, The Institute of Advanced Manufacturing Technology, Krakow

10:00 - 11:15 **Session 1 – Fundamentals Part 1**

Chairperson: M. Lohrengel

Hybrid manufacturing technology with using electrochemical processes - Jerzy Kozak *The Institute of Advanced Manufacturing Technology*

Surface topography development of cobalt under near-ECM condition - M. Schneider (1), N. Schubert (2), A. Michalis (1,2); (1) *Fraunhofer Institute for Ceramic Technologies and Systems*, (2) *TU Dresden, Institute of Material Science*

Analytical characterization of the dissolution behavior of cast iron by electrochemical methods - Weber, O.(1), Natter, H.(2), Rebschläger, A.(1) ; Bähre, D. (3); (1) *Center for Mechatronics and Automatization, Saarbrücken*; (2) *Chair of Physical Chemistry, Saarland University, Saarbrücken*; (3) *Institute for Production Engineering, Saarland University, Saarbrücken*

11:15 – 11:45 **Coffee Break**

11.45 - 12.30 **Session 1 – Fundamentals Part 2**

Chairperson: .J. Deconinck

ECM of tungsten carbide in ammoniacal solution – investigation of anodic dissolution - N. Schubert (1), M. Schneider (2), A. Michaelis (1), (1) *TU Dresden* (2) *Fraunhofer IKTS Dresden*

Transpassive Dissolution of Chromium and Manganese - Michal Manko, Manuel M. Lohrengel; *Institut für Physikalische Chemie, Heinrich-Heine-Universität Düsseldorf*

Effect of Tungsten Carbide Grain Size in Jet Electrochemical Machining - M. Hackert-Oschätzchen (1), A. Martin (1), G. Meichsner (2), A. Schubert (1,2); (1) *Chair Micromanufacturing Technology, Faculty of Mechanical Engineering, TU Chemnitz*; (2) *Fraunhofer Institute for Machine Tools and Forming Technology, Chemnitz*

12.30 - 13.45 **Session 2 - Simulations & Modelling**

Chairperson: Michael Schneider

A temperature dependent multi-domain model for numerical simulation of the electrochemical machining process - D. Deconinck, J. Deconinck; Research Group Electrochemical and Surface Engineering, Vrije Universiteit Brussel

Simulation of electrochemical micromachining with nanosecond pulse - E. L. Hotoiu, S. Van Damme, J. Deconinck - *Research Group of Electrochemical and Surface Engineering Vrije Universiteit Brussel*

Discussion - How to use the models into the practise

13:45 – 14:45 **Lunch**

15:00 – 17.00 – **Guided sightseeing to the old Krakow**

17.30 – 19.00 – **Guided sightseeing to the Main Market Underground Museum**

19:00 - **Symposium dinner** - Grand Hotel Restaurant, Slawkowska St. 5/7

Friday, 19th October 2012

9.00 – 10.30 **Session 3 – Micro ECM**

Chairperson: J. Kozak

Micro Wire Cutting by Pulsed Electrochemical Machining - A. Schubert (1,2), G. Meichsner (2), M. Hackert-Oschätzchen (1), A. Martin (1), J. Edelmann (2), (1)*Chair Micromanufacturing Technology, Faculty of Mechanical Engineering, TU Chemnitz*, (2) *Fraunhofer Institute for Machine Tools and Forming Technology, Chemnitz*

Electrochemical micromachining of passive electrodes - Süptitz R., IFW Dresden e.V.

Discussion - Range of using of micro ECM in industry and how the fundamentals help to reach the requirements of industry

10:30 – 11:00 **Coffee Break**

11.00 – 12.45 **Session 4 – Applications**

Chairperson: Maarten Brussee

In-situ process measurements for industrial size Pulse Electrochemical Machining - Rebschläger, A.(1); Weber, O.(1); Bähre, D.(2), (1) *Center for Mechatronics and Automatization, Gewerbepark, Saarbrücken, Germany*; (2) *Institute of Production Engineering, Saarland University, Saarbrücken, Germany*

Electrochemical shaping of airfoils using sequences of ECM-PECM treatments - Kozak J., Zybura-Skrabalak M., Dziedzic J., Czekaj J., *The Institute of Advanced Manufacturing Technology, Krakow, Poland*

Edge rounding of EDM micro bores using a plasma electrolytic polishing process - Schubert A (1), Zeidler H.(1), Meyer, W. (2), Unger, M. (2), Hackert-Oschätzchen, M.(1), (1) Faculty of Mechanical Engineering, Chemnitz University of Technology, Chemnitz, Germany; (2) Beckmann-Institute for Technology Development, Oelsnitz, Germany

Discussion – perspectives for using ECM technology in industry

12:45 - End and closing of Symposium

13:00 - Lunch