

Kurt-Schwabe-Symposium, 4 - 7 September 2016, Mittweida/Germany

Programme by 25.08.2016 09:47

Sunday, 4 September 2016

18:00 – 20:30 **Get-Together**
at the Best Western Hotel, Lichtenwalde,
August-Bebel-Str. 1, 09577 Lichtenwalde

Monday, 5 September 2016

Registration
08:00 – 09:00 at the University of Applied Sciences, Mittweida, Gerhard-Neumann-Bau,
Technikumplatz 17, 09648 Mittweida

09:00 – 09:20 *Opening by W. Vonau, Kurt-Schwabe-Institut, Meinsberg
and L. Hilmer, University of Applied Sciences, Mittweida*

09:20 – 09:40 **Kurt-Schwabe lecture**
W. Vonau, Kurt-Schwabe- Institute, Meinsberg

09:40 – 10:25 Plenary lecture
**Electrochemical modeling of corrosion on metals, successes and
bottlenecks**
H. Terryn, Vrije Universiteit Brussel/B

10:25 – 10:45 *Coffee break*

Parallel Sessions - Keynote lectures:

Room 1: Keynote Lecture Corrosion
Chair: H. Terryn, Universiteit Brussel/B

10:45 – 11:30 **Coatings for intelligent corrosion protection: self-healing of
macroscopic defects**
M. Rohwerder
Max-Planck-Institut für Eisenforschung GmbH, Department of Interface
Chemistry and Surface Engineering, Düsseldorf/D

Room 2: Keynote Lecture Sensors
Chair: W. Vonau, Kurt-Schwabe-Institut, Meinsberg/D

10:45 – 11:30 **Potential and Limitations of Bio(mimetic) Electrochemical Sensors**
F. Scheller¹; A. Yarman²; F. Bier³
¹ University of Potsdam, Potsdam/D; ² Turkish-German University,
Istanbul/TR; ³ Fraunhofer IZI-BB, Potsdam/D

Room 3: Keynote Lecture Analytics

Chair: U. Guth, Kurt-Schwabe-Institut, Meinsberg/D

10:45 – 11:30 **Electrochemical generation of ionic species in conjunction with capillary electrophoresis - mass spectrometry**

F. Matysik¹; T. Herl¹

¹ University of Regensburg, Regensburg/D

Parallel lectures

Room 1: Corrosion

Chair: H. Terry, Universiteit Brussel/B

11:30 – 11:55 **Corrosion investigations on zinc coatings by using gel-type electrolytes**

M. Babutzka¹; A. Burkert¹; A. Heyn²

¹ Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin/D; ² Korrosionsdiagnostik Dr. Andreas Heyn, Magdeburg/D

11:55 – 12:20 N. N.

12:20 – 12:45 **Zinc alloy coatings and microbially influenced corrosion**

M. Zemanová¹; E. Dojcsanová¹; L. Krištofiková¹; V. Jorík¹

¹ Slovak University of Technology in Bratislava, Bratislava/SK

Room 2: Sensors

Chair: W. Vonau, Kurt-Schwabe-Institut, Meinsberg/D

11:30 – 11:55 **Study of functionalized spore-based biosensors in sterilization processes**

J. Arreola¹; J. Oberländer¹; M. Keusgen²; M. Schöning¹

¹ FH Aachen, Jülich/D; ² Philipps-Universität Marburg, Marburg/D

11:55 – 12:20 **From impedance spectroscopy to the heat-transfer method: Label-free and versatile bio-detection techniques**

P. Wagner

Catholic University Leuven, Leuven/B

12:20 – 12:45 **Monitoring of *Saccharomyces cerevisiae* metabolic activity on interdigitated platinum electrodes using impedance spectroscopy**

C. Schirmer; J. Posseckardt; W. Fichtner; M. Mertig

Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D

Room 3: Analytics

Chair: U. Guth, Kurt-Schwabe-Institut Meinsberg/D

11:30 – 11:55 **Impedimetric Measurement of Low Potential Electrowetting on Dielectric**

Y. Li; B. Cahill

Institute for Bioprocessing and Analytical Measurement Techniques e. V., Heilbad Heiligenstadt/D

11:55 – 12:20 **Impedance diagnostic for cathode in working fuel cell**

L. Gaweł

Gdansk University of Technology, Gdansk/PL

12:20 – 12:45 **Fast sensor response of pH-sensitive polymer microarrays detected by surface plasmon resonance spectroscopy**

A. Kick¹; M. Mertig²

¹ Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D; ² Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Meinsberg/D

12:45 – 14:00 *Lunch Break in the mensa of the University of Applied Sciences, Mittweida*

Parallel lectures

Room 1: Corrosion

Chair: J. Telegdi, Hungarian Academy of Sciences/H

14:00 – 14:25 **Mapping Transport Channels in an Epoxy Coating with AFM-IR**

S. Morsch¹; S. Lyon¹; P. Greensmith¹; S. Gibbon²

¹ University of Manchester, Manchester/UK; ² AkzoNobel RD&I, Felling/UK

14:25 – 14:50 **Conducting polymer based anticorrosion composite coatings with full-scale self-healing ability on zinc and galvanized steel**

M. Rohwerder¹; M. Uebel²

¹ Max-Planck-Institut für Eisenforschung GmbH, Department of Interface Chemistry and Surface Engineering, Düsseldorf/D; ² Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf/D

14:50 – 15:15 **Biopolymer-Polyelectrolyte Membranes for Magnesium Corrosion Control**

B. Wilson¹; K. Yliniemi¹; F. Singer²; S. Höhn²; E. Kontturi¹; M. Lundström¹; S. Virtanen³

¹ Aalto University, AALTO, Espoo/FIN; ² University Erlangen, Erlangen/D;

³ University of Erlangen, Erlangen/D

15:15 – 15:40 **N. N.**

Room 2: Sensors

Chair: T. Yoshinobu, Tohoku University/J

14:00 – 14:25 **Preparation and characterization of the iridium/iridium oxide microelectrode for localized pH monitoring**

Y. Morozov¹; M. Taryba²; S. Lamaka³; N. de Belie⁴; M. Montemor⁵

¹ IST - Instituto Superior Tecnico, Lisboa/P; ² IST - Instituto Superior Tecnico, Centro de Química Estrutural/P; ³ Magnesium Innovation Centre, Institute of Materials Research, Helmholtz-Zentrum Geesthacht, Geesthacht/D; ⁴ Magnel Laboratory for Concrete Research, Faculty of Engineering and Architecture, Department of Structural Engineering, Ghent University, Ghent/B; ⁵ IST - Instituto Superior Tecnico, Lisbon/P

14:25 – 14:50 **Development of an automatic system for the on-site pH-measurement of soil samples**

M. Decker¹; S. Bause¹; P. Teichmann¹; R. Hasler²; M. Schneider³; W. Vonau¹

¹ Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D; ² Hochschule Mittweida, Mittweida/D; ³ AgriCon GmbH, Ostrau/D

14:50 – 15:15 **Electrochemical Studies of Gallic Acid Using Indium Tin Oxide (ITO) Electrode**

C. Yaw¹; Y. Cheow²; J. Emily Goh²

¹ Monash University Malaysia, Subang Jaya/MAL; ² Monash University Malaysia, Bandar Sunway, Selangor/MAL

15:15 – 15:40 **N. N.**

Room 3: Analytics

Chair: G. Lang, Eötvös Lorand University/H

14:00 – 14:25 **Dynamic measurements with solid electrolyte sensors**

J. Zosel; M. Schelter; W. Oelßner; U. Guth; M. Mertig

Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D

14:25 – 14:50 **N. N.**

14:50 – 15:15 **Multichannel electrochemical characterization**

U. Pliquett, D. Echtermeyer

Institut für Bioprozess- und Analysenmesstechnik e.V., Heilbad Heiligenstadt/D

15:15 – 15:40 **Electrochemical Frequency Modulation (EFM) technique for the study of the corrosion inhibition efficiency**

Y. Morozov¹; M. Montemor²

¹ IST - Instituto Superior Tecnico, Lisboa/P; ² IST - Instituto Superior Tecnico, Lisbon/P

15:40 – 16:05 *Coffee Break*

Parallel lectures

Room 1: Corrosion

Chair: M. Rohwerder, MPI für Eisenforschung, Düsseldorf/D

16:05 – 16:30 **Surface treatment with unusual phosphonic acids**

J. Telegdi¹; G. Luciano²; T. Abohalkuma³; A. Shaban⁴

¹ Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest/H; ² CNR-ISMAR Istituto di Scienze Marine, Genova/I; ³ Materials Science and Technology PhD School of Óbuda University, Budapest/H; ⁴ Research Centre for Natural Sciences, Hungarian Academy of Sciences, Budapest/H

16:30 – 16:55 **Electrochemical investigation of a spongelike halloysite-reinforced Ce-oxide layer on wrought magnesium alloy AZ31**

A. Anthes¹; O. Harper¹; W. Fürbeth¹; C. Liu²; I. Giner²; G. Grundmeier²

¹ DECHEMA-Forschungsinstitut, Frankfurt/D; ² Universität Paderborn (TMC), Paderborn/D

16:55 – 17:20 **The effect of doping on anticorrosion properties of TiO₂ sol-gel coatings for biomedical applications**

B. Burnat¹; J. Robak¹; D. Batory²; A. Leniart¹; S. Skrzypek¹

¹ University of Lodz, Faculty of Chemistry, Łódź/PL; ² Lodz University of Technology, Institute of Materials Science and Engineering, Łódź/PL

Room 2: Sensors

Chair: J. Bobacka, Abo Akademi University, Turku/FIN

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- 16:05 – 16:30 **Monitoring of trace gas concentrations with coulometric solid electrolyte sensors**
M. Schelter; J. Zosel; W. Oelßner; F. Gerlach; K. Ahlborn; U. Guth; M. Mertig
Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D
- 16:30 – 16:55 **AlGaN based Nanosensors for biomedical applications**
A. Schober
TU Ilmenau, Ilmenau/D
- 16:55 – 17:20 **Novel bismuth-modified screen-printed voltammetric sensors for mobile trace heavy metal ion determinations**
J. Schwarz Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D
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Room 3: Analytics

Chair: M. J. Schöning

- 16:05 – 16:30 **In-Situ State of Charge Monitoring for All-Vanadium Redox-Flow Batteries**
C. Weidlich; P. Pyka; K. Mangold
DECHEMA-Forschungsinstitut, Frankfurt/D
- 16:30 – 16:55 **Corrosion monitoring of pitting corrosion of stainless steel by galvanodynamic impedance spectroscopy**
J. Orlikowski
Gdansk University of Technology, Gdansk/PL
- 16:55 – 17:20 **Kurt Schwabe - A pioneer in corrosion research and measurement**
W. Oelßner
Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg, Waldheim/D
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17:20 – 20:00 **Poster Party**
within the poster exhibition with fingerfood and drinks
All posters are listed at the end of the program

Tuesday, 6 September 2016

Parallel keynote lectures

Room 1: Keynote lecture Corrosion

Chair: W. Fürbeth, DECHEMA Forschungsinstitut, Frankfurt/D

08:40 – 09:25 **Zinc-iron galvanic corrosion and its correlation with pH studied using electrochemical mapping techniques**

A. Simoes¹; A. Marques²; M. Taryba²

¹ Instituto Superior Tecnico, Lisboa/P; ² Instituto Superior Tecnico, LISBOA/P

09:25 – 09:45 *Coffee Break*

Room 2: Keynote Lecture Analytics

Chair: F. Scheller, University of Potsdam/D

08:40 – 09:25 **Application of Dual Dynamic Voltammetry for the Interpretation of Certain Features of the Interfacial Tension vs. Electrode Potential Curves of Gold**

G. G. Lang, N. Kovacs, S. Vesztergom, M. Ujvarii

Eötvös Lorand University, Budapest/H

09:25 – 09:45 *Coffee Break*

Parallel lectures

Room 1: Corrosion

Chair: W. Fürbeth, DECHEMA Forschungsinstitut, Frankfurt/D

09:45 – 10:10 **Influence of nitrogen on the corrosion resistance of martensitic stainless steels**

P. Rosemann

Otto-von-Guericke Universität, Magdeburg/D and BAM Federal Institute for Materials Research and Testing, Berlin/D

10:10 – 10:35 **Hydrogen sulphide corrosion of carbon and stainless steel alloys in gas-oil mixtures of renewable fuel sources under co-processing conditions**

G. András

University of Pannonia Institute of Chemistry, Veszprém/H

10:35 – 11:00 **Polarisation behaviour of a high-alloy steel electrode analysed by acoustic emission and long distance microscopy**

M. Mandel¹; V. Kietov²; T. Duberstein¹; L. Krüger¹

¹ Technische Universität Bergakademie Freiberg, Freiberg/D; ² Technische Universität Bergakademie Freiberg / Institut für Thermische Verfahrenstechnik, Umwelt- und Naturstoffverfahrenstechnik, Freiberg/D

11:00 – 11:25 **Control of kinetic parameters and rate-determining step nature**

V. Vigdorovich¹; L. Tsygankova²

¹ All-Russian Scientific Research Institute of Use of Machinery and Oil Products, Tambov/RUS; ² Derzhavin State University, Tambov/RUS

Room 2: Analytics

Chair: F. Scheller, University of Potsdam/D

- 09:45 – 10:10 **Label-free detection of on-chip and in-solution hybridization of DNA by means of a capacitive field-effect sensor**
T. Bronder¹; A. Poghossian²; S. Scheja²; M. Keusgen³; M. Schöning²
¹ FH Aachen, Jülich/D; ² Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D; ³ Institute of Pharmaceutical Chemistry, Philipps University Marburg/D
- 10:10 – 10:35 **Surface Monitoring with CLSM Simultaneously Coupled with Electrochemical Impedance Spectroscopy**
M. Stöckl¹; C. Schlegel²; A. Sydow¹; D. Holtmann¹; R. Ulber²; K. Mangold¹
¹ DECHEMA-Forschungsinstitut, Frankfurt am Main/D;
² University of Kaiserslautern,/D
- 10:35 – 11:00 **Towards a digital adrenaline biosensor assisting adrenal venous sampling procedure**
D. Molinnus^{1,2}, M. Sorich¹, C. Winzen¹, P. Siegert¹, H. Willenberg³, F. Lisdat⁴
A. Poghossian^{1,2}, M. Keusgen⁵, M.J. Schöning^{1,2}
¹ Institute of Nano- and Biotechnologies (INB), FH Aachen, Campus Jülich/D,
² Peter Grünberg Institute (PGI-8), Forschungszentrum Jülich GmbH/D,
³ Center of Internal Medicine, University Medicine Rostock/D,
⁴ Biosystems Technology, Technical University of Applied Sciences, Wildau/D,
⁵ Institute of Pharmaceutical Chemistry, Philipps-University Marburg/D
- 11:00 – 11:25 **Multisensors for whole-cell analytics**
A. Winzer¹; M. Schädel¹; W. Fichtner²; A. Steinke¹; T. Ortlepp¹
¹ CiS Forschungsinstitut für Mikrosensorik GmbH, Erfurth/D
² Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V. Meinsberg/D
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11:25 – 12:25 *Lunch Break in the foyer*

12:25 – 13:00 **Excursion**
Bus transfer to Kurt-Schwabe-Research Institut/Meinsberg

13:15 – 13:25 *Welcoming by the Head of the Kurt Schwabe Research Institute*

Plenary lecture Sensors

Chair: M. Mertig, Kurt-Schwabe-Institut, Meinsberg/D

13:25 – 14:10 **Solid-state ion-selective electrodes**
J. Bobacka, Abo Akademi University/FIN

14:10 – 14:55 **Keynote Lecture Sensors**
Application of a chemical imaging sensor to electrochemical systems
T. Yoshinobu
Tohoku University, Sendai/J

14:55 – 15:20 **Opto-Switch: A light-addressable lab-on-chip-based analytical platform**
T. Wagner¹; L. Breuer²; R. Welden²; V. Liauchuk²; B. Schneider²; M. Schöning²
¹ Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D; ² Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D

15:20 – 15:45 **Multi-position monitoring of gradients in the liquid phase of industrial-scale fermenters**
S. Junne¹; E. Kielhorn²; A. Bockisch²; S. Sachse³; U. Enseleit³; J. Biering⁴; W. Vonau³; P. Neubauer²
¹ TU Berlin/D; ² TU Berlin, Chair of Bioprocess Engineering, Berlin/D; ³ Kurt-Schwabe-Institut Meinsberg e.V./D; ⁴ VLB - Versuch- u. Lehranstalt für Brauerei, Berlin/D

15:45 – 17:00 *Tour through the Kurt Schwabe institute*

17:00 – 18:00 *Transfer to the Best Western hotel, Lichtenwalde*

18:30 – 19:00 *Organ Recital at Schloss Lichtenwalde* **or:**

18:30 – 19:15 Visit of Lichtenwalde castle

(registration necessary)

19:15 – 22:00 Conference Dinner at Schlossgasthaus Lichtenwalde
Schloßallee 5, 09577 Lichtenwalde

Wednesday, 7 September 2016

Plenary lecture engineering

09:00 – 09:45 **3D Printing of Pre-cursors to Functional Layers of Solid Oxide Electrochemical Reactors**
N. Farandos; G. Kelsall; L. Kleiminger
Imperial College London/UK

Parallel keynote lectures

Room 1: Keynote lecture Corrosion

Chair: W. Fürbeth, DECHEMA Forschungsinstitut, Frankfurt/D

09:45 – 10:30 **Special approach to study corrosion by combining different, electrochemical and microscopic techniques: an overview with examples**
J. Telegdi
Hungarian Academy of Sciences, Budapest/H

Room 2: Keynote Lecture Sensors

Chair: F.-M. Matysik, University of Regensburg/D

09:45 – 10:30 **Solid electrolyte gas sensors based on dynamic techniques**
U. Guth¹; J. Zosel²
¹ TU Dresden, Physikalische Chemie, Dresden/D; ² Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V., Waldheim/D

Room 3: Keynote Lecture Engineering

Chair: K.-M. Mangold, DECHEMA-Forschungsinstitut, Frankfurt/D

- 09:45 – 10:30 **On selected issues of PEM water electrolysis anode**
J. Polonsky¹; T. Bystron¹; R. Kodym¹; B. Bensmann²; K. Bouzek³
¹ University of Chemistry and Technology Prague, Prague/CZ; ² Gottfried Wilhelm Leibniz Universität Hannover, Hannover/D; ³ University of Chemistry and Technology Prague, Prague 6/CZ

Parallel lectures

Room 1: Corrosion

Chair: W. Fürbeth, DECHEMA Forschungsinstitut, Frankfurt/D

- 10:30 – 10:55 **Inhibition of Flow-Induced Corrosion for Carbon Steel Pipe Work from Shale Gas Facility**
G. Palumbo^a, M. Andrzejczuk^b, E. Ura-Bińczyk^b, M. Bisztyga^a, J. Mizera^b, J. Banaś^a
^a AGH-University of Science and Technology, Faculty of Foundry Engineering, Krakow/PL, ^b Warsaw University of Technology, Faculty of Materials Science and Engineering, Warsaw/PL
- 10:55 – 11:20 **Electrochemical corrosion mapping by means of scanning droplet cell microscopy on material libraries fabricated by a combinatorial approach**
C. Grill; J. Kollender; A. Hassel
Johannes Kepler University Linz/A
- 11:20 – 11:45 **Interaction of Ag nanoparticles with ascorbic acid as antioxidant in simulated body fluid**
M. Halama¹; P. Slovensky²; M. Makowska-Janusik³
¹ Technical University of Kosice, Kosice/SK; ² Slovak Academy of Science, Institute of Materials, Kosice/SK; ³ Jan Dlugosz University of Czestochowa, Czestochowa/PL

Room 2: Sensors

Chair: F.-M. Matysik, University of Regensburg/D

- 10:30 – 10:55 **Development of a mobile monitoring system for evaluation of biogas processes**
J. Pilas¹; S. Dantism¹; D. Röhlen¹; T. Selmer¹; M. Keusgen²; P. Wagner³; M. Schöning¹
¹ Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D; ² Philipps-Universität Marburg, Marburg/D; ³ Katholieke Universiteit (KU) Leuven, Leuven/B
- 10:55 – 11:20 **Oxygen transport and aging behaviour of Pt, O₂|YSZ cermet electrodes in lambda probes**
E. Flegel¹; U. Guth²
¹ Robert Bosch GmbH, Stuttgart/D; ² Kurt-Schwabe-Institut, Meinsberg/D
- 11:20 – 11:45 **Cu-Pd thin film combinatorial library for electrocatalytic applications**
J. Pötzelberger¹; C. Mardare²; A. Hassel³
¹ Johannes Kepler University Linz, Linz/A; ² Christian Doppler Laboratory, Linz/A; ³ Johannes Kepler University Linz, Christian Doppler Laboratory, Linz/A
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Room 3: Engineering

Chair: K.-M. Mangold, DECHEMA-Forschungsinstitut, Frankfurt/D

- 10:30 – 10:55 **Composition and structure of cathodic surface compounds formed on nickel in anhydrous methanol**
M. Bisztyga¹; U. Lelek-Borkowska²; J. Banaś²
¹ AGH - University of Science and Technology, Krakow/PL; ² AGH-University of Science and Technology, Krakow/PL
- 10:55 – 11:20 **Design of a micro flow reactor for the electrosynthetic aldol reaction of acetone**
D. Pauwels¹; J. Hereijgers¹; K. Verhulst¹; K. De Wael²; T. Breugelmans¹
¹ University of Antwerp, Wilrijk/B; ² University of Antwerp, Antwerp/B
- 11:20 – 11:45 **Light-addressable hydrogel actuators with incorporated graphene oxide for microfluidic devices**
L. Breuer¹; M. Schöning¹; R. Thoelen²; T. Wagner¹
¹ FH Aachen, Jülich/D; ² Hasselt University, Diepenbeek/B
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11:45 – 12:00 *Closing Session/End of the Symposium*

Posterprogramme:

- P 01 **Effect of superhydrophobic coating on corrosion and electrode processes kinetics on steel in 0.5 M NaCl solution**
V. Vigdorovich¹; L. Tsygankova²; A. Uryadnikov²; N. Shel³; L. Knyazeva¹; E. Tanygina²
¹ All-Russian Scientific Research Institute of Use of Machinery and Oil Products, Tambov/RUS; ² Derzhavin State University, Tambov/RUS; ³ Tambov State Technical University, Tambov/RUS
- P 02 **The effect of deformation on corrosion properties of tin and aluminium cans in contact with food**
M. Halama¹; T. Beyreder²; M. Sebek³
¹ Technical University of Kosice, Kosice/SK; ² Technische Universität Wien, Wien/A; ³ Slovak Academy of Science, Institute of Materials, Kosice/SK
- P 03 **Electrochemical behavior in chlorides of the T6 heat treated Mg-Zn-RE alloy thixo-cast**
Z. Szklarz¹; M. Bisztyga²; H. Krawiec²; Ł. Rogal³
¹ AGH University of Science and Technology, Krakow/PL; ² AGH-University of Science and Technology, Krakow/PL; ³ Institute of Metallurgy and Materials Science, Krakow/PL
- P 04 **New approach based on galvanodynamic impedance monitoring of corrosion rate in diffusion-controlled environment**
K. Darowicki¹; A. Jazdzewska¹; J. Orlikowski¹
¹ Gdansk University of Technology, Gdansk/PL
- P 05 **Forced convection in scanning electrochemical microscopy introduced by an electrochemical flow cell**
T. Raith¹; C. Iffelsberger¹; F. Matysik¹
¹ Universität Regensburg, Regensburg/D
- P 06 **Characterization and application of various flow cell configurations for the hyphenation of electrochemistry with mass spectrometry**
T. Herl¹; F. Matysik¹
¹ Universität Regensburg, Regensburg/D
- P 07 **Coupling of capacitively coupled contactless conductivity detectors with capillary based separation techniques**
S. Piendl¹; F. Matysik¹
¹ Universität Regensburg, Regensburg/D
- P 08 **Mathematical analysis of local harmonic constructing materials**
L. Burczyk¹; K. Darowicki²
¹ Gdansk University of Technology, Gdansk/PL; ² Gdańsk University of Technology, Gdańsk/PL
- P 09 **Glass-based potentiometric sensors manufactured by pulse laser deposition**
K. Ahlborn¹; F. Gerlach²; H. Iken³; S. Schusser³; W. Zander⁴; J. Schubert⁴; M. Schöning⁵; W. Vonau²
¹ Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V., Meinsberg/D; ² Kurt-Schwabe-Institut für Mess- und Sensortechnik e.V., Waldheim/D; ³ Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D; ⁴ Peter Grünberg Institut, Jülich/D; ⁵ Institute of Nano- and Biotechnologies, FH Aachen, Jülich/D

- P 10 **Influence of MEA preparation method on PEM water electrolysis performance**
M. Paidar¹; T. Bystron¹; J. Rutrlé¹; K. Bouzek²; G. Papakonstantinou³; T. Vidakovic-Koch³; K. Sundmacher³
¹ University of Chemistry and Technology Prague, Prague/CZ; ² University of Chemistry and Technology Prague, Prague 6/CZ; ³ Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg/D
- P 11 **Role of metal impurities in generation of defects in nanostructured Nb₂O₅ layers**
S. Deribo¹
¹ NTU "Kharkov Polytechnical Institute", Kharkov/UA
- P 12 **Process of prepare Zn-Al alloys effects on the corrosion rate of alloys**
E. Janicka¹
¹ Gdansk University of Technology, Gdansk/PL
- P 13 **Corrosion inhibition of AA2024-T3 aluminium alloy under acidic conditions**
P. Kwolek¹; K. Dychtoń²; J. Sieniawski²
¹ Rzeszow University of Technology, Rzeszów/PL; ² Rzeszow University of Technology, Rzeszow/PL
- P 14 **Investigations of thermally sensitized surface of austenitic steel by means of scanning probe microscopy**
A. Zieliński¹
¹ Gdańsk University of Technology, Gdańsk/PL
- P 15 **Influence of cavitation erosion on passive layer degradation and corrosion susceptibility of SS 304 in artificial seawater**
J. Ryl¹; J. Wysocka²; S. Krakowiak³; K. Darowicki¹
¹ Gdansk University of Technology, Gdańsk/PL; ² Gdansk University of Technology, Gdańsk/D; ³ Gdansk University of Technology, Gdansk/PL
- P 16 **Citric acid as corrosion inhibitor for aluminium alloys in aqueous alkaline environments**
J. Wysocka¹; S. Krakowiak²; J. Ryl²; K. Darowicki²
¹ Gdansk University of Technology, Gdańsk/PL; ² Gdansk University of Technology, Gdansk/PL
- P 17 **The kinetics of corrosion of aluminium alloy AA2024-T3 in orthophosphoric acid in the presence of sodium molybdate**
K. Dychton¹; P. Kwolek¹; M. Drajewicz¹; J. Sieniawski¹
¹ Rzeszow University of Technology, Rzeszow/PL
- P 18 **Corrosion and protection of some metals in atmosphere with heightened content of SO₂**
E. Shel¹; V. Vigdorovich²; L. Tsygankova³; P. Bernatsky³
¹ All-Russian Scientific Research Institute of Use of Machinery and Oil Products, Tambov/RUS; ² All-Russian Scientific-Research Institute of Aviation Materials, Tambov/RUS; ³ Derzhavin State University, Tambov/RUS
- P 19 **Influence of PS-PVD process parameters on properties of ceramic coating in TBC**
T. Kubaszek¹; M. Góral²; P. Kwolek²; M. Drajewicz²; W. Cmela³
¹ Rzeszow University of Technology, Rzeszow/PL; ² Rzeszow University of Technology, Rzeszów/PL; ³ Research and Development Laboratory for Aerospace Materials, Rzeszów/PL

- P 20 **The influence of process parameters on structure of ceramic coatings deposited by PS-PVD method**
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Z. Szklarz¹, L. Rogal¹
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M. Brycht¹; S. Skrzypek¹; K. Kalcher²; J. Zavašnik³; A. Leniart¹;
 K. Wasiński⁴; P. Pórolniczak⁴
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¹ University of Lodz, Faculty of Chemistry, Lodz/PL
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 J. Posseckardt¹, C. Schirmer¹, A. Kick¹, W. Fichtner¹, A.T. Winzer²,
 I. Tobehn-Steinhäuser², M. Schädel², A. Steinke², A. Schuller³,
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U. Enseleit¹; M. Berthold¹; C. Feller²; U. Partsch²; M. Stoltenberg³;
 D. Arndt³; W. Vonau¹
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- P 29 **Electrochemical sensor device for measuring pH and redoxpotential in thermal water of geothermal plants and wells**
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C. Grieger¹; F. Köster¹; F. Gerlach¹; W. Vonau²
¹ Hochschule Mittweida University of Applied Sciences, Mittweida/D; ² Kurt-Schwabe-Institut für Mess- und Sensortechnik Meinsberg, Meinsberg/D
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S. Bause¹; M. Decker¹; W. Vonau¹
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F. Gerlach¹; K. Ahlborn¹; P. Thiem²; K. Hoffmann²; W. Vonau¹
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