Program of oral communications (at May 29th 2017)

Tuesday July 11th 2017 - morning

8:30-9:00 Welcome
9:00-9:20 Introduction: Laurent Arurault, France


Session 3: Formation of PEO films (reaction mechanisms, micro-arc formation, modeling)
9:50-10:10 3-26 What is the energy really used for during the plasma electrolytic oxidation processing of aluminium? Open ways to reduce energy consumption in PEO, Gérard Henrion, France
10:10-10:30 3-31 Associated processes under cathodic and anodic polarization in PEO of aluminium alloys. Conception of active zone, Aleksey Rogov, U.K.
10:30-10:50 3-4 Simulation assisted investigation of substrate geometry impact on PEO coating formation, Ma Xun, Germany

10:50-11:20 Coffee break + poster session

Session 1: Formation of anodic films on Al, Ti, Mg alloys (reaction mechanisms, formation and organization of the porosity (self-assembly, nanoindentation), modeling)
11:20-11:40 1-28 Experimental study and modelling of heat transfer during anodizing of aluminium, Herman Terryn, Belgium
11:40-12:00 1-30 Effects of substrate properties on the formation and growth of anodic TiO$_2$ nanotubes, Hiroaki Tsuchiya, Japan
12:00-12:20 1-27 Challenges on the anodizing of additive manufactured Aluminium alloys, Reynier I. Revilla, Belgium

12:40-14:00 Lunch

Tuesday July 11th 2017 – afternoon

14:00-14:30 Invited talk: Self-organizing anodization: Formation of properties of highly ordered TiO$_2$ nanotube layers, Patrik Schmuki, Germany

Session 2: Specific anodizations (local or horizontal anodizations, other electrical modes (pulsed or AC), other media (organic or molten salts), other substrates (Nb, W, Hf ...))
14:30-14:50 2-99 How large is the current efficiency during anodizing of valve metals such as Aluminium, Niobium, Tantalum, Titanium, and Tungsten ?, Achim Walter Hassel, Austria
14:50-15:10 2-101 Impurity effect on the pore formation and characteristics of room-temperature anodic aluminum oxide using specific hybrid pulse anodization, Chung Chen-Kuei, Taiwan
15:10-15:30 2-63 Synthesis of nanoporous tin oxide layers via anodic oxidation of metallic Sn in acidic and alkaline electrolytes, Leszek Zaraska, Poland
15:30-15:50 2-22 Characterization of nanowires formed by electrochemical oxidation of copper, Wojciech J. Stepniowski, Poland
15:50-16:10 2-33 Understanding the fabrication mechanism of nanoporous anodic TiO$_2$-TiN composite films on Ti sheets in nitric-based electrolytes toward multi-functional materials, Kure-Chu Song-Zhu, Japan
16:10-16:30 2-70 HfO$_2$ nanostructure arrays via porous-alumina-assisted anodization of hafnium layers, Alexander Mozalev, Czech Republic

16:30-17:00 Coffee break + posters session
**Session 3: Formation of MAO films** (Reaction mechanisms, micro-arc formation, modeling)
17:00-17:20 3-93 Diagnostics of surface layer properties for low- and high- voltage anodic film formation via electrical characteristics, Evgeny Parfenov, Russia
17:20-17:40 3-34 Effect of negative electrical charge of alternative current regime on PEO process of forming dense layer of coating on A2024 alloy, Olga Terleeva, Russia
17:40-18:00 3-44 Plasma electrolytic oxidation (PEO) coatings on Mg alloy with addition of particles, Xiaopeng Lu, Germany
18:00-18:20 3-35 Lateral growth of PEO films on Al Alloys, Sungmo Moon, Korea
18:20-18:40 3-6 Coating formation mechanism at the later stage of plasma electrolytic oxidation revealed by sequential anodizing of an AZ31 magnesium alloy using W-free and W-containing aluminate electrolytes, Yingliang Cheng, China

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**Wednesday July 12th 2017 – morning**

8:30-9:00 Invited talk: Highly ordered anodic porous alumina for functional nanodevice, Hideki Masuda, Japan

**Session 1: Formation of anodic films on Al, Ti, Mg alloys** (Reaction mechanisms, formation and organization of the porosity (self-assembly, nanoindentation), modeling)
9:00-9:20 1-77 Irregularity of barrier layer thickness of anodic porous alumina films, Sachiko Ono, Japan
9:20-9:40 1-46 Control of self-ordering of porous anodic alumina, Kirill Napolskii, Russia
9:40-10:00 1-17 Self-organized TiO$_2$ nanotubes: influence of the Ti microstructure on the nanotube growth, Jan Macak, Czech Republic

**Session 8: Membranes, templates and composites** (Preparation and functionalization (by MOFs, CNTs ...) of membranes or templates)
10:00-10:20 8-71 Anodic aluminum oxide (AAO) templates for synthesis of nanostructures, Grzegorz D. Sulka, Poland
10:20-10:40 8-47 Surface modification of polymers with combined micro- and nanostructured anodic aluminum oxide templates, Annika Thormann, Germany

10:40-11:10 Coffee break + posters session

**Session 4: Anodic / PEO films for protection against corrosion** (Green sealings, sealing mechanism, anticorrosion)
11:10-11:30 4-19 In-situ formation of LDH-nanocontainers on the surface of PEO covered AA2024, Sergey Karpushenkov, Belarus
11:30-11:50 4-79 Anodizing treatments to improve the corrosion resistance of pure titanium, Davide Prando, Italy

**Session 5: Colored anodic / PEO films** (Pigments and dyes and their modes of action, thermo-optical properties, coloring)
11:50-12:10 5-43 High frequency pulse anodising of Aluminium for decorative applications, Jensen Flemming, Denmark
12:10-12:30 5-41 Preparation and thermal stability of black ceramic coatings on Ti alloys by micro arc oxidation, Zhongping Yao, China

12:30-13:50 Lunch
Wednesday July 12th 2017 – afternoon

13:50-14:20 Invited talk: PEO processing of Mg alloys, Carsten Blawert, Germany

Session 3: Formation of PEO films (Reaction mechanisms, micro-arc formation, modeling)
14:20-14:40 3-83 Local in-situ temperature measurements during the plasma electrolytic oxidizing of aluminum, Christoph Lämmel, Germany
14:40-15:00 3-60 In-situ electrochemical behavior monitoring: a powerful tool to control micro-arc oxidation process applied on titanium, Emmanuel Rocca, France
15:00-15:20 3-97 Investigation into optical spectral characteristics of plasma electrolytic oxidation, Veta Mukaeva, Russia

Sessions 6 & 7: Other functionalizations of anodic / PEO films (biocompatible coatings, electrical or adherence properties...)

15:40-16:10 Coffee break + posters session

16:10-16:30 7-25 PEO coatings on titanium alloys for surface and tissue engineering, Endzhe Matykina, Spain
16:30-16:50 7-68 Memristive switching in porous-alumina-assisted TiO$_2$ nanocolumn arrays, Maria Bendova, Czech Republic
16:50-17:10 7-16 Metal oxide nanostructured catalysts fabricated by PEO method for efficient CO oxidation, Baodan Liu, China
17:10-17:30 7-18 Enhanced photoelectrochemical efficiency of self-organized TiO$_2$ nanotube layers due to secondary materials, Hanna Sopha, Czech Republic

17:30-17:45 Informations (general, banquet, visits), conclusion, Laurent Arurault, France