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

9:20-9:50 **Invited talk: Multifunctional nanostructured coatings on light alloys produced by plasma electrolytic oxidation**, **Aleksey Yerokhin, U.K.**

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
12:20-12:40 1-61 **Morphology transitions in anodic films on AA 2024-T3 alloy,** Jeanette Torrescano-Alvarez, U.K.

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…)

15:20-15:40 7-32 **Linking fundamental properties of the aluminum anodic oxide (AAO) films to adhesive bond performance for aerospace structural parts**, Arjan J.M.C Mol, The Netherlands

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