

10:20 – 10:35

MN1

H. M. Kim<sup>1,2</sup>, T. Ueno<sup>1</sup>, H. Junko<sup>1</sup>, N. Saito<sup>1,2</sup>

*(<sup>1</sup>Graduate School of Engineering, Nagoya University, Japan, <sup>2</sup>Japan Science and Technology Agency (JST)–CREST, Japan)*

Synthesis of colloidal MnO<sub>2</sub> with sheet-like structure by solution plasma process in permanganate aqueous solution

10:35 – 10:50

MN2

D. Kolenatý, J. Houška, J. Rezek, R. Čerstvý, J. Vlček

*(Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic)*

Reactive High-Power Impulse Magnetron Sputtering of Thermo-chromic VO<sub>2</sub> Films at Low Deposition Temperatures

10:50 – 11:05

MN3

C. Wiriyamontree<sup>1,2</sup>, R. Rujiravanit<sup>1,2,3</sup>

(<sup>1</sup>The Petroleum and Petrochemical College, Chulalongkorn University, Thailand, <sup>2</sup>NU-PPC Plasma Chemical Technology Laboratory, Chulalongkorn University, Thailand, <sup>3</sup>Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University, Thailand)

Fabrication and release characteristics of carboxymethyl chitin/chitin hydrogel blend films

11:05 – 11:20

MN4

A. Belosludtsev, J. Vlček, J. Houška, S. Haviar, R. Čerstvý, J. Rezek

(Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic)

Reactive high-power impulse magnetron sputtering of ZrO<sub>2</sub> films with gradient ZrO<sub>x</sub> interlayers on pretreated steel substrates

### Lunch (11:20 – 12:30)

Chairperson: D. Kolenatý (University of West Bohemia, Czech Republic)

12:30 – 12:45

MN5

H. Matsuyama<sup>1,2</sup>, S. Tanaka<sup>1,2</sup>, A. Akaishi<sup>1,2</sup>, and J. Nakamura<sup>1,2</sup>

(<sup>1</sup>The University of Electro-Communications (UEC-Tokyo), Japan, <sup>2</sup>JST-CREST, Japan)

Effects of edge structures on oxygen reduction reaction for nitrogen-doped graphene nanoclusters

12:45 – 13:00

MN6

M. Zítek, P. Zeman, Š. Zuzjaková, S. Haviar, J. Rezek

(Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic)

Amorphous Zr–Cu thin-film alloys prepared by magnetron co-sputtering

13:00 – 13:15

MN7

C. Pobsook<sup>1,2</sup>, R. Rujiravanit<sup>1,2,3</sup>

(<sup>1</sup>The Petroleum and Petrochemical College, Chulalongkorn University, Thailand, <sup>2</sup>NU-PPC Plasma Chemical Technology Laboratory, Chulalongkorn University, Thailand, <sup>3</sup>Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University, Thailand)

Chemical modification of cellulose fibers from banana trees by using dielectric barrier discharge plasma: acetalisation and epoxylation reactions

13:15 – 13:30

MN8

J. H. La, K. T. Bae, S. Y. Lee*(Center for Surface Technology and Applications, Korea Aerospace University, Korea)*

Zn-Mg Coatings Synthesized Using Electro-Magnetic Heating Deposition

**Break (13:30 – 13:50)**Chairperson: H. M. Kim (*Nagoya University, Japan*)

13:50 – 14:05

MN9

V. Šimová, J. Vlček, Š. Zuzjaková, R. Čerstvý, J. Houška, Z. Soukup*(Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Czech Republic)*

Magnetron sputtered Hf–B–Si–C–N films with high oxidation resistance in air above 1500 °C

14:05 – 14:20

MN10

C. Poolwong<sup>1</sup>, R. Rujiravanit<sup>1,2,3</sup>*(<sup>1</sup>The Petroleum and Petrochemical College, Chulalongkorn University, Thailand, <sup>2</sup>Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University, Thailand, <sup>3</sup>NU-PPC Plasma Chemical Technology Laboratory, Chulalongkorn University, Thailand)*

Development of bacterial cellulose/cotton fabric/silk fibroin composites

14:20 – 14:35

MN11

M. Jaroš, J. Musil, R. Čerstvý, S. Haviar*(Department of Physics and NTIS – New Technologies for Information Society – European Centre of Excellence, Faculty of Applied Sciences, University of West Bohemia, Czech Republic)*Effect of energy on texture and enhanced resistance to cracking of sputter deposited Ti(Ni)N<sub>x</sub> and Ti(Al,V)N<sub>x</sub> films

14:35 – 14:50

MN12

S. Zenkin<sup>1</sup>, Š. Kos<sup>1</sup>, J. Musil<sup>1</sup>, A. Belosludtsev<sup>1</sup>, R. Čerstvý<sup>1</sup>, S. Haviar<sup>1</sup>, M. Netrvalová<sup>2</sup>*(<sup>1</sup>Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Czech Republic, <sup>2</sup>New Technologies - Research Centre, University of West Bohemia, Czech Republic)*

Low-electronegativity metal-based hydrophobic hard ceramics

11:00 – 11:30

A1

P. Anantasattakul<sup>1</sup>, N. Saito<sup>2</sup>, R. Rujiravanit<sup>1,3,4</sup>

(<sup>1</sup>The Petroleum and Petrochemical College, Chulalongkorn University, Thailand, <sup>2</sup>Graduate School of Engineering, Nagoya University, Japan, <sup>3</sup>Center of Excellence on Petrochemical and Materials Technology, Chulalongkorn University, Thailand, <sup>4</sup>NU-PPC Plasma Chemical Technology Laboratory, Chulalongkorn University, Thailand)

Preparation of cellulose sheets containing polyaniline and silver particles via solution plasma

11:30 – 12:00

J2

J. Nakamura<sup>1,2</sup>, Y. Uchida<sup>1,2</sup>, S. Gomi<sup>1,2</sup>, H. Matsuyama<sup>1,2</sup>, and A. Akaishi<sup>1,2</sup>

(<sup>1</sup>The University of Electro-Communications (UEC-Tokyo), Tokyo, Japan, <sup>2</sup>JST-CREST, Saitama, Japan)

Mechanism of Stabilization and Magnetization of Impurity-doped Zigzag Graphene Nanoribbons

12:00 – 12:30

C1

P. Lukeš<sup>1</sup>, E. Doležalová<sup>1</sup>, Laurita R.<sup>2</sup>, V. Colombo<sup>2</sup>

(<sup>1</sup>Institute of Plasma Physics of the Czech Academy of Sciences, Czech Republic, <sup>2</sup>Department of Industrial Engineering, Alma Mater Studiorum – Università di Bologna, Italy)

Chemical Effects in Plasma Activated Liquids

Chairperson: N. Takeuchi (*Tokyo Institute of Technology, Japan*)

13:30 – 14:00

A2

S. M. Kim<sup>1,2</sup>, J. W. Kim<sup>1,3</sup>, S. Yul Lee<sup>1,2</sup>

(<sup>1</sup>Center for Surface Technology and Applications, <sup>2</sup>Department of Materials Engineering, Korea Aerospace University, Korea, <sup>3</sup>Division of Bioengineering, University of Incheon, Korea)

The Reliable Design of Electrocatalysts using Solution Plasma Processing

14:00 – 14:30

J3

T. Shirafuji, K. Obana, S. Kito

(Department of Physical Electronics and Informatics, Osaka City University, Japan)

Time- and Space-resolved OES on Plasma in Contact with Water

14:30 – 15:00

O1

Y.A. Jeong<sup>1</sup>, B.R. Park<sup>1</sup>, D. MubarakAli<sup>1,3</sup>, S. Y. Lee<sup>2,3</sup>, and J. W. Kim<sup>1,3</sup>

(<sup>1</sup>Division of Bioengineering, Incheon National University, Korea, <sup>2</sup>Department of Materials Engineering, <sup>3</sup>Center for Surface Technology and Applications, Korea Aerospace University, Korea)

Preparation of Anti-Oxidant Nanoceria Biocomposites Using Solution Plasma Processes

15:00 – 15:30

A3

M. Kocik, M. Tański

(Centre for Plasma and Laser Engineering, Szewalski Institute of Fluid-Flow Machinery, Polish Academy of Sciences, Gdansk, Poland)

LIF OH radicals measurements in microplasma jet

**Break (15:30 – 15:50)**

Chairperson: E. Stamate (*Technical University of Denmark, Denmark*)

15:50 – 16:20

O2

M. Černák<sup>1</sup>, R. Krumpolec<sup>1</sup>, T. Homola<sup>1</sup>, V. Medvecká<sup>2</sup>, D. Kováčik<sup>1</sup>, J. Kelar<sup>1</sup>

(<sup>1</sup>Department of Physical Electronics, Faculty of Science, Masaryk University, Czech Republic, <sup>2</sup>Department of Experimental Physics, Faculty of Mathematics, Physics and Informatics, Comenius University in Bratislava, Slovak Republic)

Calcination of organometallic fibers and pretreatment of substrates for atomic layer deposition by atmospheric pressure plasma discharge

16:20 – 16:50

A4

J. O. Jensen, Y. Hu, L. Zhong, C. Pan, L. N. Cleemann and Q. Li

*(Department of Energy Conversion and Storage, Technical University of Denmark, Denmark)*

Non-Platinum Oxygen Reduction Catalysts. From Crystalline to Molecular Moieties

16:50 – 17:20

O3

A. Akaishi<sup>1,2</sup>, J. Nakamura<sup>1</sup>

*(<sup>1</sup>Department of Engineering Science, The University of Electro-Communications (UEC-Tokyo), Japan, <sup>2</sup>CREST, Japan Science and Technology Agency, Japan)*

Water adsorption on doped graphene surfaces

17:20 – 17:50

A5

P. Baroch

*(Department of Physics and NTIS – European Centre of Excellence, University of West Bohemia, Czech Republic)*

New nanostructured thin-film materials prepared by plasma technologies

## ORAL PRESENTATION (10:30 – 16:50)

Chairperson: M. A. Bratescu (*Nagoya University, Japan*)

10:30 – 11:00

A6

C. Miron<sup>1</sup>, I. Sava<sup>2</sup>, A. Kruth<sup>1</sup>, A. Quade<sup>1</sup>, M. Balcerak<sup>3</sup>, M. Bonislawski<sup>3</sup>, M. Holub<sup>3</sup>, K.-D. Weltmann<sup>1</sup>, J. F. Kolb<sup>1</sup>

(<sup>1</sup>*Leibniz Institute for Plasma Science and Technology, INP Greifswald, Germany*, <sup>2</sup>*Institute of Macromolecular Chemistry "Petru Poni", Romania*, <sup>3</sup>*West Pomeranian University of Technology, Poland*)

Treatment of polymer films by pulsed electrical discharges in liquids

11:00 – 11:30

O4

D. Pavliňák<sup>1</sup>, O. Galmiz<sup>1</sup>, A. Brablec<sup>1</sup>, M. Zemánek<sup>1</sup>, M. Černák<sup>1</sup>

(<sup>1</sup>*Department of Physical Electronics, Faculty of Science, Masaryk University, Czech Republic*)

Application of surface dielectric barrier discharge for treatment of hollow objects

11:30 – 12:00

J4

T. Sugiyama, H. Eto, N. Takeuchi

(*Dept. Electrical and Electronic Engineering, Tokyo Institute of Technology, Japan*)

Decomposition of Persistent Organic Compounds Using Plasmas Generated in Solution

12:00 – 12:30

O5

J. Čapek, Š. Batková and J. Houška

(*Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Czech Republic*)

HiPIMS deposition of Ta-O-N coatings with modified surface by Cu nanoclusters for water splitting

13:30 – 14:00

A7

J. Benedikt<sup>1</sup>, M. M. Hefny<sup>1</sup>, G. Willems<sup>1</sup>, C. Pattyn<sup>1</sup>, P. Lukeš<sup>2</sup>

(<sup>1</sup>*Research Department Plasmas with Complex Interactions, Ruhr-Universität Bochum, Germany,*

<sup>2</sup>*Institute of Plasma Physics of the CAS, Czech Republic*)

Quantitative study of reactive species transport from the gas phase into aqueous solutions

14:00 – 14:30

J5

M. A. Bratescu<sup>1</sup> and N. Saito<sup>2,3</sup>

(<sup>1</sup>*Institute of Innovation for Future Society, Nagoya University, Japan,* <sup>2</sup>*Department of Materials, Physics and Energy Engineering, Graduate School of Engineering, Nagoya University, Japan,*

<sup>3</sup>*CREST, Japan Science and Technology Agency, Japan*)

Spectroscopy of Solution Plasma Process

14:30 – 15:00

J6

T. Ishizaki<sup>1,2</sup>, Y. Wada<sup>1</sup>, H. S. Lee<sup>1</sup>, S. Kumagai<sup>1</sup>, O. L. H. Li<sup>1</sup>

(<sup>1</sup>*Department of Materials Science and Engineering, Shibaura Institute of Technology, Japan,* <sup>2</sup>*JST CREST, Japan*)

Solution Plasma Synthesis of heteroatom-containing carbon materials toward cathode electrode for Li-air battery

### Break (15:00 – 15:20)

15:20 – 15:50

O6

A. D. Pajdarová, J. Vlček, J. Rezek

(*Department of Physics and NTIS - European Centre of Excellence, University of West Bohemia, Czech Republic*)

Time-resolved optical emission spectroscopy performed during deposition of ZrO<sub>2</sub> films by controlled reactive high-power impulse magnetron sputtering

15:50 – 16:20

J7

M. Banno, H. Yui

(*Department of Chemistry, Faculty of Science, Tokyo University of Science, Japan*)

Time-resolved optical diagnostics of solution plasma formed with graphite electrodes in aqueous solutions



SPM-4 and Mini SPM-3

June 7-12, 2016

University of West Bohemia, Plzeň, Czech Republic

16:20 – 16:50

A8

E. Stamate

*(Department of Energy Conversion and Storage, Technical University of Denmark, Denmark)*

Transparent and low emissivity coatings based on aluminum doped zinc oxide