

# CESPC-6, 6th Central European Symposium on Plasma Chemistry

Bressanone, Italy, September 6-10, 2015

## Program

*Registration and all scientific activities will take place at the "Casa della Gioventù - Università di Padova"  
Bressanone, via Rio Bianco 12*

### September 6, 2015, Sunday

14:00 – 18:00	Registration
18:00 – 20:00	Welcome party

### September 7, 2015, Monday

Chair: J. Mizeraczyk

Starting from 8:40	Registration
9:00 – 9:20	Opening ceremony
9:20 – 10:00	<b>Invited Lecture I-1</b> B. R. Locke <i>Can plasma processes compete with other advanced oxidation processes for water treatment?</i>
10:00 – 10:20	<b>O-1</b> Y. Akishev <i>Surface streamer discharge on the water agitated by mechanical vibrations</i>
10:20 – 10:40	<b>O-2</b> K. Yasuoka <i>Pulsed AC diaphragm discharge for ozone/hydrogen peroxide process in wastewater treatment</i>
10:40 – 11:00	Coffee break

Chair: F. Krcma

11:00 – 11:40	<b>Invited Lecture I-2</b> S. Reuter <i>Interaction of plasma jets with liquids for biomedical applications</i>
11:40 – 12:00	<b>O-3</b> A. Mizuno <i>Evaluation of oxidative radical reaction in water injected by electrical discharge/gamma-ray</i>
12:00 – 12:20	<b>O-4</b> M. Gherardi <i>Surface characterization of plasma-polymerized polyacrylic acid thin film deposited by means of a nanosecond pulsed plasma jet</i>
12:20 – 12:40	<b>O-5</b> A. Nikiforov <i>Atmospheric pressure plasma deposition of antibacterial coatings on medical textiles</i>
12:40 – 14:20	Lunch

Chair: S. Pasquiers

14:20 – 15:00	<b>Invited Lecture I-3</b> B. M. Obradovic <i>Diagnostics and applications of water falling film DBD reactor</i>
15:00 – 15:20	<b>O-6</b> F. Krcma <i>Decomposition of selected alkaloids by pin-hole discharge in water solutions</i>
15:20 – 15:40	<b>O-7</b> D. Pavlinak <i>Surface dielectric barrier discharges initiated using liquid electrodes</i>
15:40 – 16:00	Coffee break
16:00 – 16:20	<b>O-8</b> B. M. Cadorin <i>Methyl orange degradation by non thermal plasma in a needle to plate corona discharge: the effect of feed gas</i>
16:20 – 16:40	<b>O-9</b> E. Ceriani <i>Advanced oxidation of organic pollutants in water by air plasma under different corona and experimental conditions</i>
16:40 – 17:00	Technical Report by Hiden Analytical

17:00 – 18:30	<b>Poster Session 1 – Posters P-1 to P-19</b>
	<b>P-1</b> N. Blin Simiand <i>Kinetics studies on acetone removal by non-equilibrium plasma</i>
	<b>P-2</b> A. Brablec <i>Mass spectrometry of diffuse coplanar surface barrier discharge: influence of discharge frequency and oxygen content in N<sub>2</sub>/O<sub>2</sub> Mixture</i>
	<b>P-3</b> E. Ceriani <i>Intermediates and byproducts treatment of the drug verapamil in water in a DBD reactor</i>
	<b>P-4</b> V.R. Chirumamilla <i>Effect of pulse rise-time on NO<sub>x</sub> removal in a hybrid plasma-catalytic system</i>
	<b>P-5</b> M. Fekete <i>Temporal evolution of sputtered species densities in multi-pulse HiPIMS discharge</i>
	<b>P-6</b> A. Giardina <i>Mineralization of emerging organic contaminants in water by air plasma in a DBD reactor</i>
	<b>P-7</b> A. Giardina <i>Decomposition of oxygenated volatile solvents in air - acetone, ethyl acetate, methanol – treated individually and in mixture in a corona reactor</i>
	<b>P-8</b> J. Hnilica <i>Reactive argon/acetylene HiPIMS discharge – time-resolved diagnostic of present species</i>
	<b>P-9</b> G. Majstorovic <i>Electron number density diagnostics from neon-hydrogen segmented micro hollow gas discharge at atmospheric pressure</i>
	<b>P-10</b> J. Kellar <i>Plasma power measurements of planar dielectric barrier discharge</i>
	<b>P-11</b> R. Kornev <i>Plasma chemical production of stable isotopes of germanium from its fluorides</i>
<b>P-12</b> L. M. Martini <i>LIF measurements of OH in a plasma-jet plume and oxidation of fatty acid methyl esters</i>	

	<b>P-13</b> T. Morávek <i>Surface charge recombination wave in coplanar DBD</i>
	<b>P-14</b> B. M. Obradovic <i>Degradation of nicotine in water solutions using DBD plasma reactor: direct, indirect and catalytic treatment</i>
	<b>P-15</b> S. Pasquiers <i>Impact of an atmospheric argon plasma jet on a dielectric surface</i>
	<b>P-16</b> V. Sember <i>Spectroscopic investigation of different Boltzmann distributions within population densities of various atomic and ionic excited levels in an expanding H<sub>2</sub>O-Ar dc arc jet</i>
	<b>P-17</b> V. Shapoval <i>Plasma injectors based on rotational gliding discharge with liquid electrode</i>
	<b>P-18</b> V. Shapoval <i>Plasma-liquid system with secondary discharge based on rotating gliding arc</i>
	<b>P-19</b> P. Slavicek <i>Time-resolved OES of dielectric barrier discharge</i>

20:00	<b>Dinner</b>
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## September 8, 2015, Tuesday

Chair: A. Mizuno

9:00 – 9:40	<b>Invited Lecture I-4</b> J. Mizeraczyk <i>Can plasma processing be competitive with the other methods for hydrogen production?</i>
9:40 – 10:00	<b>O-10</b> M. Sokolova <i>Dielectric barrier surface discharge in air fed by a positive nanosecond pulse high voltage</i>
10:00 – 10:20	<b>O-11</b> M. Scapinello <i>Dry reforming by nanosecond pulsed discharge at atmospheric pressure</i>
10:20 – 10:40	<b>O-12</b> M. Schiorlin <i>CO<sub>2</sub> conversion into CO and O<sub>2</sub> by means of coplanar dielectric barrier discharges</i>
10:40 – 11:00	Coffee break

Chair: M. Sokolova

11:00 – 11:40	<b>Invited Lecture I-5</b> <b><i>Dedicated in honor of prof. Massimo Rea</i></b> K. Yan <i>Advanced electrostatic precipitation technique for PM<sub>2.5</sub> emission control</i>
11:40 – 12:00	<b>O-13</b> M. Schmidt <i>Treatment of industrial exhaust gases by a dielectric barrier discharge</i>
12:00 – 12:20	<b>O-14</b> S. Milosevic <i>Diagnostics of atmospheric pressure plasma jet by cavity ring-down spectroscopy</i>
12:20 – 12:40	<b>O-15</b> V. Shapoval <i>Features of plasma-catalytic systems with exothermic chemical reactions</i>
12:40 – 14:20	Lunch

15:00 – 19:00	<b>Excursion</b>
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20:00	<b>Dinner</b>
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### September 9, 2015, Wednesday

Chair: S. Reuter

9:00 – 9:40	<b>Invited Lecture I-6</b> P. Favia <i>Plasma processes for surface modification of biomedical materials (and more)</i>
9:40 – 10:00	<b>O-16</b> M. Boselli <i>Multi-diagnostic investigation of a non-equilibrium atmospheric pressure plasma jet driven by nanosecond voltage pulses in free-flow configuration and while imping on different substrates</i>
10:00 – 10:20	<b>O-17</b> M. Cernak <i>Ambient air plasma treatment of SiO<sub>2</sub> and metal oxide surfaces</i>
10:20 – 10:40	<b>O-18</b> N. A. Debacher <i>Morphologic study of polymer surfaces treated by non-thermal plasma through contact angle and scaling laws analysis</i>
10:40 – 11:00	Coffee break

Chair: M. Cernak

11:00 – 11:40	<b>Invited Lecture I-7</b> M. Macias-Montero <i>Si-based quantum confined nanocrystals by atmospheric pressure plasmas</i>
11:40 – 12:00	<b>O-19</b> F. Fracassi <i>Aerosol assisted deposition of polymer/ZnO nanocomposite thin films by DBDs</i>
12:00 – 12:20	<b>O-20</b> M. Mozetic <i>Gentle functionalization of polymer materials using gaseous plasma flowing afterglows</i>
12:20 – 12:40	<b>O-21</b> V. Colombo <i>Investigation of the efficacy of plasma gun decontamination of realistic root canal models for endodontic applications</i>
12:40 – 14:20	Lunch

Chair: K. Yasuoka

14:20 – 15:00	<b>Invited Lecture I-8</b> S. Pasquiers <i>Dissociation against oxidation kinetic for the conversion of VOCs in non-thermal plasmas of atmospheric gases</i>
15:00 – 15:20	<b>O-22</b> P. Vasina <i>Deposition of hard but yet moderately ductile Mo<sub>2</sub>BC coatings by pulsed magnetron sputtering</i>
15:20 – 15:40	<b>O-23</b> I. Onyshchenko <i>The plasma footprint of an atmospheric pressure plasma jet on a flat polymer substrate and its relation to surface treatment</i>

15:40 – 16:00	Coffee break
16:00 – 16:20	<b>O-24</b> V. Medvecka <i>Plasma assisted calcination of alumina submicron fibers</i>
16:20 – 16:40	<b>O-25</b> R. Krumpolec <i>SiO<sub>2</sub>/Si etching in atmospheric pressure hydrogen DBD plasma</i>
16:40 – 17:00	<b>O-26</b> N. Korobeishchikov <i>Generation of cluster ion beams for materials treatment</i>

17:00 – 18:30	<b>Poster Session 2 – Posters P-20 to P-38</b>
	<b>P-20</b> M. Boselli <i>An experimental and computational study of the interaction between the jet of an ICP torch and a cylindrical substrate</i>
	<b>P-21</b> M. Boselli <i>Modelling of copper nanoparticle synthesis by a radio-frequency induction thermal plasma</i>
	<b>P-22</b> L. Cernakova <i>Modification of plasma activated polyurethane nonwoven by bioactive compounds</i>
	<b>P-23</b> V. Colombo <i>Investigation of the antimicrobial activity at safe levels for eukaryotic cells of a low power atmospheric pressure inductively coupled plasma source</i>
	<b>P-24</b> J. Daniel <i>Study of Ni doped nc-TiC/a-C(:H) coatings prepared by hybrid PVD-PECVD process</i>
	<b>P-25</b> M. Gherardi <i>Chemical composition and post-discharge antimicrobial properties of water exposed to a nanosecond pulsed plasma</i>
	<b>P-26</b> J. Hanusová <i>Enhancement of carbon-steel blend adhesion to rubber using atmospheric pressure plasma</i>
	<b>P-27</b> V. Homola <i>Mechanical properties of polymer nanocomposite coatings prepared under dusty plasma conditions</i>
	<b>P-28</b> J. Horák <i>Hardcoating of parylene based protective layers</i>
	<b>P-29</b> F. Krcma <i>Plasma chemical reduction of model corrosion brass layers prepared in soil</i>
	<b>P-30</b> K. Kučerova <i>Chemical and biological effects of air DC transient spark discharge in water electrode system</i>
	<b>P-31</b> J. Santos Sousa <i>The role of RONS in the cellular toxicity of microplasma jets</i>
	<b>P-32</b> V. Shapoval <i>Plasma-catalytic reforming of bio-fuels and diesel fuel</i>
<b>P-33</b> V. Shapoval <i>Plasma-catalytic technology for composite carbon nanomaterials</i>	
<b>P-34</b> D. Skácelová <i>Surface modification of paper by atmospheric pressure plasmas</i>	
<b>P-35</b> V. Štěpánová <i>Plasma treatment of glass using dielectric barrier discharge and gliding arc</i>	
<b>P-36</b> Z. Tucekova <i>Diffuse coplanar surface barrier discharge for inactivation of escherichia coli</i>	

	<b>P-37</b> L. Zábanský <i>On the study of the mechanical properties of MoBC coatings</i>
	<b>P-38</b> A. Záhoranová <i>Effects of low temperature plasma treatment on fungal cells</i>

20:00	<b>Gala Dinner</b>
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### September 10, 2015, Thursday

Chair: K. Yan

9:00 – 9:40	<b>Invited Lecture I-9</b> K. Kutasi <i>The role of modelling in the design of low pressure afterglow systems in binary and ternary Ar/N<sub>2</sub>/O<sub>2</sub> mixtures for applications</i>
9:40 – 10:00	<b>O-27</b> G. Maino <i>Experimental studies on damaging materials of cultural heritage and computer simulation of clustering defects</i>
10:00 – 10:20	<b>O-28</b> J. Glosik <i>Recombination of H<sub>3</sub><sup>+</sup> ions with electrons in low temperature hydrogen plasma at high pressure</i>
10:20 – 10:40	<b>O-29</b> M. Sabo <i>IMS-ooTOFMS study of TNT interaction with reactant ions generated by corona discharge</i>
10:40 – 11:00	Coffee break

Chair: N. Debacher

11:00 – 11:40	<b>Invited Lecture I-10</b> K. Hensel <i>Discharges in porous foams and capillary tubes</i>
11:40 – 12:00	<b>O-30</b> D. Kovacic <i>BOPP film chemical and physical modifications by surface DBD and corona air-plasma treatment at atmospheric pressure</i>
12:00 – 12:20	<b>O-31</b> A. Popelka <i>Corona treatment of aluminum for adhesion improvement</i>
12:20 – 12:40	Closing remarks
12:40 – 14:20	Lunch