



## **XXVIII**

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### **INTERNATIONAL CONFERENCE ON PHENOMENA IN IONIZED GASES**

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**July 15-20, 2007 Prague Czech Republic**

**SPONSORED BY  
International Union of Pure and  
Applied Physics**

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## **POCKET PROGRAM & CONFERENCE GUIDE**

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**EDITED BY  
Tatiana Kavka, Jiri Schmidt**

**ICPIG 2007**

**ORGANIZED BY  
Institute of Plasma Physics AS CR, v.v.i.  
with the participation of the Faculty of Electrical  
Engineering, Cech Technical University, and the Faculty  
of Mathematics and Physics of Charles University,  
all in Prague**

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## CONFERENCE TOPICS

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1. Elementary processes and fundamental data
2. Thermodynamic and transport phenomena
3. Plasma wall interactions, electrode and surface effects
4. Collective and nonlinear phenomena
6. Modeling and simulation techniques
7. Plasma diagnostic methods
7. Astrophysical, geophysical and other natural plasma
8. Low pressure discharges
9. High frequency discharges
10. Non-equilibrium plasmas and microplasmas at high pressures
11. Thermal plasmas
12. Complex and dusty plasma
13. Plasma processing of surfaces and particles
14. High pressure and thermal plasma processing
15. Plasma lamps and radiation sources
16. Medical, biological, and environmental applications
17. Plasma power and pulsed power technology, particle sources

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## CONFERENCE LOGISTICS

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**ICPIG registrants should wear the badges provided at registration at all times while attending the sessions, breaks and social events.**

Oral presentations will be delivered using a computer and LCD projector. Talks (Microsoft Powerpoint or Adobe Acrobat files) should be either submitted on a CD (flash memory) a day ahead of each session or uploaded directly onto presentation computer not later than at 8:30 a.m. of the presentation day. Speakers are encouraged to preview their presentations using the set-up available in the Speaker's Preview Room.

Posters should be put up not later than 2 hours before the beginning of respective poster session and must be removed before 9 a.m. of the following day.

### Labelling of Lectures and Posters

*Invited lectures:*

Gzz – general

Tzz – topical

*Workshops:*

WAz – workshop A

WBz – workshop B

*Posters: xPyy-zz , Post-deadline Posters: PD-zz*

*x* – poster session number, *yy* – topic number

*z, zz* – sequential poster/lecture number

**MONDAY, July 16**

**General Invited Lectures (Top Congress Hall)**

**9:00 G01 L.C. Pitchford**

*LAPLACE, Universite de Toulouse, Toulouse, France*

Generation of high-pressure, non-thermal plasmas in discharges in small geometries

**9:45 G02 C.O. Laux**

*Ecole Centrale Paris, Chatenay-Malabry, France*

Plasma-assisted combustion using nanosecond repetitively pulsed discharges

**10:30** Coffee break

**11:00 G03 N.J. Lopes Cardozo**

*FOM Institute for Plasma Physics Rijnhuizen,*

*Association Euratom-FOM, The Netherlands*

ITER: Giant plasma physics experiment and global move towards fusion power

**11:45 G04 R. Hatakeyama**

*Tohoku University, Sendai, Japan*

Novel-structured carbon nanotubes creation by nanoscopic plasma control

**12:30** Lunch

**14:00-15:30 Poster Session 1**

**Topic number 1**

**1P01-01** On the role of argon reactions in a low pressure Ar/O<sub>2</sub> discharge

*J.T. Gudmundsson, E.G. Thorsteinsson*

**1P01-02** Influence of pressure on the relative population of the two lowest vibrational levels of the C<sup>3</sup>Π<sub>u</sub> state of nitrogen for 12 keV electron beam excitation

*A. Morozov, T.Heindl, J. Wieser,...*

- 1P01-03** Scattering of electromagnetic radiation by dust induced plasma fluctuations (generalized theory for dust diagnostics)  
*V. Tsytovich, G. Morfill*
- 1P01-04** Variational approach to excitation in  $p + \text{Be}^{3+}$  collisions at intermediate and high impact velocities  
*M. Bouamoud, B. Lasri, J. Hanssen*
- 1P01-05** Control of substrate potentials by injection of electron beam  
*H. Amemiya, T. Misawa, Y. Ohtsu, H. Fujita*
- 1P01-06** Electron-atom bremsstrahlung in partially ionized plasma  
*T.S. Ramazanov, Yu.A. Omarbakiyeva, ...*
- 1P01-07** Formation of xenon excimer between 200 and 300 K following selective excitation of the Xe(6s) metastable state  
*F. Marchal, R. Lauro, G. Ledru, G. Jabbour, ...*
- 1P01-08** Photodissociation processes in diatomic molecules  
*V. Aubrecht, M. Bartlova*
- 1P01-09** A two-temperature  $\text{N}_2$  dissociation model derived from state-resolved rates  
*M. Lino da Silva, V. Guerra, J. Loureiro*
- 1P01-10** Heat flux on the surface of an hypersonic vehicle: A preliminary study  
*I. Armenise, S. Longo, M. Capitelli*
- 1P01-11** Ion swarm data of  $\text{N}_4^+$  in  $\text{N}_2$ ,  $\text{O}_2$  and dry air  
*A. Bekstein, M. Benhenni, M. Yousfi, ...*
- 1P01-12** On  $\text{N}_2(\text{C}^3\Pi_u, v=0)$  state lifetime and collisional deactivation rate by  $\text{N}_2$   
*G. Dilecce, P.F. Ambrico, S. De Benedictis*
- 1P01-13** Electron transport in X/ $\text{CF}_4$  mixtures (X=F,  $\text{F}_2$ , CF,  $\text{CF}_2$ ,  $\text{CF}_3$ ) and modelling of high E/N discharges  
*Z. Nikitovic, V. Stojanovic, Z.Lj. Petrovic*
- 1P01-14** Ionization and dissociation dynamic of  $\text{H}_2$  molecule driven by a laser field  
*E. Fiordilino, G. Camiolo, G. Castiglia, ...*
- 1P01-15** Stark widths dependence on the rest core charge of the emitters for multiply charged ions spectral lines  
*J. Purić, M. Nikolić, M. Šćepanović*

- 1P01-16** Production and loss of rovibrationally excited  $H_2$  molecules: Expanding hydrogen plasmas in experiment and model  
*O. Gabriel, P. Vankan, D.C. Daan, R. Engeln*
- 1P01-17** Novel approach for assessing the electron transport properties in plasma thrusters  
*G. Coduti, A. Lazurenko, C. Cavoit, ...*
- 1P01-18** Electron interactions in  $CF_3I$  and  $CF_3I-N_2$   
*J.L. Hernández-Ávila, A.M. Juárez, ...*
- 1P01-19** On the radiation trapping problem in a finite cylinder: Spatial distribution of resonance and metastable atoms  
*Yu. B. Golubovskii, A. N. Timofeev, ...*
- 1P01-20** On the radiation trapping problem in a finite cylinder: Decay of the resonance and metastable atoms  
*Yu. B. Golubovskii, A. N. Timofeev, ...*
- 1P01-21** Electron capture of singly-ionized lithium from hydrogen  
*J.M.P. Serrão*
- 1P01-22** Synchronous generation of positive surface streamers in air, nitrogen and oxygen  
*Y. Kashiwagi, H. Ito, H. Itoh*
- 1P01-23** Time-resolved measurement of electron swarm coefficients in tetrafluoroethane (R134a)  
*E. Basurto, J.L. Hernandez-Avila, ...*
- 1P01-24** Ozone production in dark discharge in oxygen  
*P. Paris, F. Valk, M. Aints, K.V. Kozlov*
- 1P01-25** Ion and neutral species in  $H_2$ ,  $H_2+Ar$  and  $H_2+N_2$  plasmas generated in low pressure DC discharges  
*I. Méndez, V.J. Herrero, I. Tanarro*
- 1P01-26** Mass spectrometric investigation of the ion chemistry in  $H_2/CH_4/N_2$  DC discharges  
*Tanarro I., Herrero V.J., Méndez I.*
- 1P01-27** Ab initio calculations of low-lying states of  $SF^-$   
*O. Zivny, J. Czernek*
- 1P01-28** A comparison between AC and DC discharges in argon-hydrogen gas mixtures in the frame of the M-effect  
*L.C. Ciobotaru, S.D. Popa*

- 1P01-29** Calculation of resonant charge exchange cross-sections of ions Rubidium, Cesium, Mercury and noble gases  
*S.A. Maiorov*
- 1P01-30** Measurement of metastable helium atoms in a hollow cathode discharge using laser absorption spectroscopy  
*A. Okamoto, S. Kitajima, M. Sasao*
- 1P01-31** Effects of condensation on excited states of non-polar molecules: Cyclohexane and tetramethylsilane  
*J.P. Guelfucci*
- 1P01-32** Hydrodynamic approximation of stimulated Compton scattering of electromagnetic waves from a magnetized relativistic electron beam  
*Y. Ahmadizadeh, B. Shokri*
- 1P01-33** Measurements and calculations of electron swarm coefficients in N<sub>2</sub>-CO<sub>2</sub> mixtures  
*A. Juarez, M. Yousfi, J. de Urquijo, ...*
- 1P01-34** Numerical calculation of Townsend electronic and ionic avalanches: electron detachment, photoelectron pulse and diffusion effects  
*A.M. Juarez, J. de Urquijo, ...*
- 1P01-35** Electron impact ionization and transport in nitrogen-argon mixtures  
*J. Jovanovic, E. Basurto, J. de Urquijo, ...*
- 1P01-36** Impact ionization & excitation cross-sections and numerical codes for non-stationary kinetics of plasmas  
*V.S. Zakharov, V.G. Novikov, S.V. Zakharov*
- 1P01-37** The role of positronium formation in non-conservative positron transport in argon  
*M. Šuvakov, Z.Lj. Petrovic, J. Marler, ...*
- 1P01-38** Methane conversion to higher hydrocarbons in AC dielectric barrier discharge  
*H. Savadkouei, N.S. Matin, A.H. Jalili, ...*
- 1P01-39** Effect of different parameter on the selectivity of methane conversion using catalytic enhanced dielectric-barrier discharge  
*H.R. Bozorgzadeh, N.S. Matin, A.H. Jalili*
- 1P01-40** Determination of collisional quenching rate coefficient of N<sub>2</sub>(A<sup>3</sup>Σ<sub>u</sub><sup>+</sup>) by air pollutants  
*S. Suzuki, T. Suzuki, H. Itoh*

- 1P01-41** Electron swarm parameters in pure N<sub>2</sub>O and in dilute N<sub>2</sub>O-Ar mixtures and electron collision cross sections of N<sub>2</sub>O molecule  
*Y. Nakamura*
- 1P01-42** Electron drift velocity and effective ionization coefficients in N<sub>2</sub>O, N<sub>2</sub>O-N<sub>2</sub> and N<sub>2</sub>O-SF<sub>6</sub>  
*E. Basurto, J.L. Hernandez-Avila, ...*

## **Topic number 2**

- 1P02-01** Electron-beam activation of Ar-SiH<sub>4</sub> mixtures. The role of secondary electrons and metastable atoms  
*A.V. Fedoseev, G.I. Sukhinin*
- 1P02-02** Cut-off criteria of electronic partition functions and transport properties of thermal plasmas  
*D. Bruno, M. Capitelli, C. Catalfamo, ...*
- 1P02-03** Transport of electronic energy in thermal plasmas  
*D. Bruno, M. Capitelli, C. Catalfamo, ...*
- 1P02-04** The models of the electric arc between evaporating electrodes  
*V.A. Zhovtyansky, Yu.I. Lelyukh*
- 1P02-05** Flowing characteristics of cold helium arc jet plasma along open-field-line  
*K. Yoshida, T. Kanuma, H. Ichii, ...*
- 1P02-06** Characteristics of cold argon arc jet plasma flowing along open-field-line and the collision effects for deceleration  
*Y. Nagahara, H. Ichii, K. Yoshida, ...*
- 1P02-07** Invasion of background atoms into hot rarefied expanding plasma jets  
*O. Gabriel, P. Colsters, D. Schram, R. Engeln*
- 1P02-08** Supersonic ion flow in gas discharges  
*S.A. Maiorov*
- 1P02-09** Transparent radiation of intensively blasted electrical arc  
*J. Gregor, I. Jakubova, J. Senk*
- 1P02-10** Monte Carlo studies of the magnetic field effects on spatial relaxation of electron swarms  
*S. Dujko, Z.Lj. Petrovic, Z.M. Raspopovic, ...*

- 1P02-11** Kinetic equation for charge carriers in solid state plasma  
*S. Kh. Alavi, B. Shokri*
- 1P02-12** Revisiting the normal cathode fall theory  
*V.P. Nagorny*

### **Topic number 3**

- 1P03-01** N<sub>2</sub> laser - aluminum surface interaction  
*V. Henč-Bartolić, Z. Schauperl, D. Pipić*
- 1P03-02** Numerical analysis of the potential profile in the sheath formed in front of a floating electron emitting electrode immersed in a two-electron temperature plasma  
*T. Gyergyek, M. Čerček*
- 1P03-03** Anode boundary conditions for electron density of electric arcs  
*J.J. Lowke, M. Tanaka*
- 1P03-04** Investigation of the arc and glow phase fractions of ignition discharges in air and nitrogen for Ag, Pt, Cu and Ni electrodes  
*N. Jeanvoine, R. Jonsson, F. Muecklich*
- 1P03-05** Dynamical two-dimensional model of pre-explosion phase of microprotrusion heating by plasma contacting the wall  
*S. Barengolts, G. Mesyats, M. Tsvetoukh*
- 1P03-06** Volt-ampere characteristics of planar diode in mode of emission limitation  
*A.I. Pushkarev, R.V. Sazonov*
- 1P03-07** Ion-conducting electrodes and probes for low temperature plasmas  
*S.A. Meiss, S.O. Steinmüller, M. Rohnke*
- 1P03-08** Plasma clouds collisions and ion trapping at laser-irradiated double-foil targets  
*O. Renner, F.B. Rosmej, E. Dalimier*
- 1P03-09** Stochastic models and computer simulation of first order phase transition non-linear fluctuation stage  
*G.I. Zmievskaya, A.L. Bondareva*
- 1P03-10** Electrically exploded wire in water  
*D. Priem, G. Racineux, G. Lochak, H. Lehn,...*



- 1P03-11** Calculation of heterogeneous recombination probabilities from a dynamical Monte Carlo scheme: fluctuations and averaging  
*V. Guerra*
- 1P03-12** Quantification of the sticking coefficient of hydrocarbons on fusion relevant carbon and tungsten surfaces  
*W. Schustereder, N. Endstrasser, B. Rasul,...*
- 1P03-13** Microstructure surface damaging : ionizing radiation pulse fluxes surface treatment and computer simulation  
*A.L. Bondareva, G.I. Zmievskaia, ...*
- 1P03-14** Seasoning of plasma reactors: Effects of ion energy distributions to chamber walls  
*A. Agarwal, M.J. Kushner*
- 1P03-15** Operation domains of an inside-gap RF discharge  
*C. Stancu, I. Luciu, R.E. Ionita, B. Mitu,...*

#### **Topic number 4**

- 1P04-01** Magnetic field generation in collisionless anisotropic plasmas  
*F. Pegoraro, F. Califano, D. Del Sarto*
- 1P04-02** Propagating double layers in electronegative plasmas  
*A. Meige, N. Plihon, G.J.M. Hagelaar,...*
- 1P04-03** Limiting behaviour of a magnetised presheath  
*T.M.G. Zimmermann, M. Coppins, J.E. Allen*
- 1P04-04** Nonlinear electromagnetic waves in pair plasmas  
*N.F. Cramer, I. Kourakis, F. Verheest*
- 1P04-05** Effect of boundary conditions on the sheath potential establishment  
*H. Matsuura, Y. Tomita*
- 1P04-06** Ultrarelativistic electron generation during the intense ultrashort laser pulse interaction with multicluster plasma  
*I.Y. Echikina, I.N. Inovenkov, Y. Fukuda,...*
- 1P04-07** Research of charge balance in diode unit of pulsed electron accelerator  
*A.I. Pushkarev., R.V. Sazonov*

- 1P04-08** Initial experiments of drift wave turbulence in helicon high-density linear plasma device, LMD-U  
*S. Shinohara, Y. Nagashima, T. Yamada,...*
- 1P04-09** Control of the nonlinear dynamics of double layer charge structures using biharmonic perturbations  
*D. Alexandroaei, C. Stan, C.P. Cristescu*
- 1P04-10** Structure of the Hall currents in a current sheet formed in the 2D magnetic field with the X type null line  
*A.G. Frank, S.G. Bugrov, V.S. Markov*
- 1P04-11** First results from a purely toroidal electron plasma experiment  
*J.P. Marler, Ha Bao, M.R. Stoneking*
- 1P04-12** Analysis of three simultaneously excited instabilities in low-temperature magnetized plasma  
*D.G. Dimitriu, C. Ionita, R.W. Schrittwieser*
- 1P04-13** On the dynamics of a complex space charge structure in a transversal magnetic field  
*O. Niculescu, D.G. Dimitriu, C. Ionita,...*
- 1P04-14** Auto-excitation of helicon oscillations in a magnetized plasma filled resonator  
*K.M. Gutorov, V.A. Kurnaev, I.V. Vizgalov*
- 1P04-15** Rayleigh-Taylor and filamentation instabilities at the initial stage of the gas puff z-pinch implosion  
*S. Chaikovsky, A. Labetsky, A. Rousskikh,...*
- 1P04-16** Bifurcations of current transfer through a collisional sheath and self-organization on glow cathodes  
*M.S. Benilov*
- 1P04-17** The responses to the high frequency oscillation in the strong self-organized toroidal plasma  
*M. Watanabe, H. Tozuka, S. Shimizu,...*
- 1P04-18** Plasma parameters distribution in the experimental model of the compact-dipole magnetic confinement device  
*G. Krashevskaya, V. Kurnaev, M. Tsvetoukh.*

- 1P04-19** Characteristics of detached argon plasma flowing along magnetic field line in a linear plasma device  
*N. Ezumi, T. Kobayashi, T. Tsuchiya,...*
- 1P04-20** Lévy walk kinetics of charged particle in a model of electrostatic turbulence  
*L. Krlin, R. Paprok, V. Svoboda*
- 1P04-21** Numerical investigation of stability of steady-state current transfer to thermionic cathodes  
*M.S. Benilov, M.J. Faria*
- 1P04-22** Interaction of absolutely and neutrally stable shock waves with vortex: computer simulation and comparison  
*V. Fortov, A. Konyukhov, A. Likhachev,...*
- 1P04-23** Spatial distribution of streamer electron density in the development stage  
*M. Chung*

**15:30** Coffee break

**16:00 – 17:30 Poster Session 2****Topic number 5**

- 2P05-01** Ionization rate for breakdown waves  
*M. Hemmati, M. Weller, S. Summers*
- 2P05-02** An analysis of the cathode spot current density effect on plasma parameters in low-current vacuum arc  
*Narong Mungkung, Nuttee Thungsuk*
- 2P05-03** Computer simulation of focused electron beam generation by plasma electron gun  
*I.V. Litovko, E.M. Oks*
- 2P05-04** Optimized process design of high density plasma-chemical vapour deposition of silicon oxide film  
*K.H. Ryu, J. Hwang, D.S. Seo, S. Hong*
- 2P05-05** Numerical simulation of glow discharge parameters and its current-voltage characteristics in non-linear approach by solving integral equation  
*I.V. Melnyk*
- 2P05-06** Modeling of dual-frequency capacitive discharges  
*Z. Donko*
- 2P05-07** Effect of transverse magnetic field configuration on plasma immersion ion implantation processing  
*K.G. Kostov, E.J.D.M. Pillaca*
- 2P05-08** Computer simulation of an atmospheric pressure RF plasma needle  
*P. Kazimierski, D. Kotecka*
- 2P05-09** Simulation of streamer development in different electric fields  
*Nikandrov D., Tsendin L., Kolobov V.,...*
- 2P05-10** Caesium volume effects on multicusp ion source kinetics  
*D. Pagano, C. Gorse, M. Capitelli*
- 2P05-11** Full-dimensional hybrid computer simulations of electropositive plasma behaviour in the vicinity of cylindrical probe  
*P. Bartoš, R. Hrach, J. Blažek, P. Jelínek*

- 2P05-12** Neutral gas modelling of the linear plasma generator Magnum-PSI  
*H.J.N. van Eck, W.R. Koppers, ...*
- 2P05-13** Streamer propagation in non-uniform field with dielectric barrier  
*A. Kumada, D. Morisaki, I. Takahashi, ...*
- 2P05-14** Negative streamer fronts: comparison of particle and fluid models and hybrid coupling in space  
*Chao Li, W.J.M. Brok, Ute Ebert, ...*
- 2P05-15** Particle-based modeling of oxygen discharges  
*F.X. Bronold, K. Matyash, D. Tskhakaya, ...*
- 2P05-16** Simulations of vortex motion in electron plasmas using a special-purpose computer system designed to solve the N-body gravitational problem  
*Y. Maeki, Y. Mizuno, K. Muto, H. Inuzuka, ...*
- 2P05-17** Electron transport parameters and rate coefficients for the modeling a RF discharge in  $N_2-CH_4$   
*C.D. Pintassilgo, G. Alcouffe, ...*
- 2P05-18** Polytopic coefficient gamma in the fluid simulation of the plasma-sheath transition  
*K.-U. Riemann*
- 2P05-19** The consequences of neglecting an external circuit in a 2d3v Particle-In-Cell/Monte Carlo Collisions model for a direct current planar magnetron  
*E. Bultinck, I. Kolev, A. Bogaerts*
- 2P05-20** Numerical simulation of filamentary discharges with the parallel adaptive mesh refinement technique  
*S. Pancheshnyi, P. Segur, A. Bourdon*
- 2P05-21** Spatially resolved electron transport behaviours near boundary  
*A. Takeda, N. Ikuta*
- 2P05-22** Progress in the simulation of hydrogen RF discharge plasmas  
*P. Diomedede, A. Michau, S. Longo, ...*
- 2P05-23** Particle-in-cell simulation for the acceleration channel of a cylindrical Hall thruster  
*Hae June Lee, Jongho Seon*

- 2P05-24** Impact of azimuthal instabilities on electron behaviour in a Hall Effect thruster  
*J. Perez-Luna., G.J.M. Hagelaar,...*
- 2P05-25** Two-dimensional modelling of a microwave plasma reactor operated by an axial injection torch  
*R. Álvarez, L. Marques, L.L. Alves*
- 2P05-26** Modelling of a radio-frequency ICP-reactor with an ion beam system  
*J. Cruz, J. Gregório, S. Cardoso, L.L. Alves,...*
- 2P05-27** Plasma backflow phenomenon in high-current vacuum arc  
*Lijun Wang, Shenli Jia, Ling Zhang,...*
- 2P05-28** Fast magnetoacoustic waves in magnetized elliptic plasmas  
*D.L. Grekov*
- 2P05-29** Computational study of sheath structure in multicomponent plasma  
*R. Hrach, V.Hrachova, P. Bruna, S. Novak,...*
- 2P05-30** A unified theory of ionization and discharge physics based on EHD/EMHD as an extension of Alfven's MHD: A goal of Von Engel's desire towards simplification and unification of ionization and discharge physics  
*H. Kikuchi*
- 2P05-31** A comparative study between 2D and 1D numerical models for the description of streamer propagation in air  
*L. Papageorghiou, N. Spyrou*
- 2P05-32** Theoretical and experimental studies of the plasma processes in hollow cathode discharge lasers  
*D. Mihailova, M. Grozeva, N. Sabotinov,...*
- 2P05-33** The role of the field emission effect in the deviations from the Paschen law  
*M. Radmilovic-Radjenovic, B. Radjenovic*
- 2P05-34** The influence of the initial energy and the reflection coefficient on the back diffusion of electrons in nitrogen  
*M. Radmilović-Radjenović, Z. Lj. Petrović,...*

- 2P05-35** Calculation of the real spectral line shape by solving the ill-posed inverse problem  
*N. Zorina, G. Revalde, A. Skudra*
- 2P05-36** Pseudo-spectral 3D simulations of streamers with adaptively refined grids  
*A. Luque, U. Ebert, C. Montijn, ...*
- 2P05-37** The use of a direct numerical solution of the radiative transfer equation to improve the simulation of streamer discharges  
*J. Capeillere, P. Ségur, S. Célestin, ...*
- 2P05-38** Generalized model of dust grain charging in plasma sheath  
*J. Blazek, R. Basner, P. Bartos, P. Spatenka, ...*
- 2P05-39** Study of Z pinch evolution by snow-plow model  
*H. Ghomi, S. Rostami, H. Latifi*
- 2P05-40** The scaling problem and the laminar-turbulent transition criterion for the plasma flow in the long plasmatron channel  
*O.A. Sinkevich, S.E. Chikunov*
- 2P05-41** Plasma dynamics in hollow cathode triggered discharge with influence of fast electrons on ionization phenomena and EUV emission  
*S.V. Zakharov, V.S. Zakharov, V.G. Novikov, ...*
- 2P05-42** The structural unstable vector configuration in plasma and urbanistic  
*I. Kurov*
- 2P05-43** Electron distribution function in the external corona of laser generated plasma  
*M. Masek, K.Rohlana*
- 2P05-44** Simulation of the non-equilibrium transverse arc discharge in air  
*A.A. Tropina, V.Sh. Avedyan*
- 2P05-45** Radiation transport in metal halide lamps  
*M.L. Beks, J.J.A.M. van der Mullen*
- 2P05-46** PIC simulation and kinetic theory of the sheath in ion-ion plasmas  
*A. Meige, G. Leray, J.-L. Raimbault, ...*
- 2P05-47** One dimensional Hybrid Maxwell-Boltzmann model of sheath evolution comparison with PIC simulations  
*P. Sarrailh, L. Garrigues, G.J.M. Hagelaar, ...*

- 2P05-48** Formation of runaway electron distribution function during gas breakdown in high electric fields  
*D.S. Nikandrov, V.I. Kolobov*
- 2P05-49** Numerical investigations on the stochastic heating  
*M. Bayrak, R.P. Brinkmann*
- 2P05-50** Numerical investigation of the RF plasma boundary sheath  
*B.G. Heil, J. Schulze, T. Mussenbrock,...*
- 2P05-51** Finite element analysis of atmospheric pressure RF-excited plasma needle for biomedical application  
*Y. Sakiyama, D.B. Graves*
- 2P05-52** Multigrid solver for axisymmetrical 2D fluid equations  
*Z. Ristivojevic, Z.Lj. Petrovic*
- 2P05-53** Toward an improved moving mesh method for the simulation of streamer discharges  
*D.Bessieres, J. Paillol, A. Bourdon,...*
- 2P05-54** Formation and propagation of ionization potential waves in various pressures  
*L. Papageorghiou, N. Spyrou*
- 2P05-55** CH<sub>4</sub> plasma steam reforming modeling at atmospheric pressure  
*J.M. Cormier, F. Ouni, A. Khacef*
- 2P05-56** Particle simulation of negative hydrogen ion transport  
*P. Diomede, S. Longo, M. Capitelli*

### **Topic number 13**

- 2P13-01** High-power pulsed magnetron sputtering: Model and experiments  
*K. Burcalová, J. Vlček, P. Kudláček*
- 2P13-02** The role of per-hydroxyl in the multiwall carbon nanotube growth by PECVD  
*Q. Chen, Y. Fu, C. Zhang, Y. Zhang*



- 2P13-03** Synthesis of carbon nanoparticles from Ar/H<sub>2</sub>/C<sub>2</sub>H<sub>2</sub> plasmas: analysis of the film properties and electron energy distribution function  
*M. Camero, F.J. Gordillo-Vázquez, ...*
- 2P13-04** Synthesis of Cu and Cu<sub>2</sub>O nanopowders by pulsed discharge in solution process for catalytic application  
*V.S. Burakov, A.V. Butsen, N.A. Savastenko, ...*
- 2P13-05** Energy and angular dependence of incident Ar ion in dry-etching of wurtzite-type GaN crystal  
*K. Harafuji, K. Kawamura*
- 2P13-06** Electrical discharges in liquids for nanoparticles production  
*V. Burakov, N. Savastenko, N. Tarasenko*
- 2P13-07** Surface modification of polyethylene and polypropylene in low-pressure plasma and in atmospheric pressure plasma-solution system  
*V. Titov, T. Shikova, V. Rybkin, A. Kulentsan, ...*
- 2P13-08** Plasma sputtering deposition of PEMFC active catalytic layer  
*H. Rabat, P. Brault, A. Caillard, ...*
- 2P13-09** Titanium thin films sputtered by a cavity hollow cathode discharge on highly oriented pyrolytic graphite  
*I. Vojvodic, S.B. Olenici, C. Ionita, S. Jaksch, ...*
- 2P13-10** MW plasma treatment of powder materials  
*P. Špatenka, J. Hladik, J. Píchal, L. Aubrecht*
- 2P13-11** Wettability of polyester fabric controlled by an atmospheric dielectric barrier discharge  
*Y. Klenko, J. Píchal, L. Aubrecht*
- 2P13-12** Deposition of metal nanoparticles at ionic-liquid|plasma interfaces  
*M. Poelleth, S.A. Meiss, M. Rohnke, ...*
- 2P13-13** Decomposition of organic dyes with sputtered TiO<sub>2</sub> photocatalytic films  
*J. Šícha, J. Musil*
- 2P13-14** Effect of hydrogen on sputtering discharge and properties of TiO<sub>2</sub> films  
*J. Musil, V. Ondok*

- 2P13-15** Application of hybrid nano-diamond coating to cutting tools  
*N. Sakudo, N. Ikenaga, H. Yasui, K. Awazu*
- 2P13-16** Silicon surface processing by quasistationary plasma flow  
*I.P. Dojčinović, M.M. Kuraica, ...*
- 2P13-17** Encapsulation of plasma black nanoparticles by miniemulsion polymerization  
*H.S. Jang, D.W. Park, S.E. Shim*
- 2P13-18** SiO<sub>2</sub> deposition using cold arc plasma jet at atmospheric pressure  
*Man Hyeop Han, Joo Hyon Noh, ...*
- 2P13-19** Reactive magnetron sputtering of hard Si–B–C–N coatings with high-temperature oxidation resistance  
*S. Hřeben, J. Kalaš, J. Vlček, J. Čapek, ...*
- 2P13-20** Effect of methane/hydrogen mixture gases on plasma-enhanced chemical vapor deposition for carbon nanotubes growth  
*A. Okita, Y. Suda, A. Oda, J. Nakamura, ...*
- 2P13-21** Plasma surface modification in relation to polymer properties  
*C. Borcia, G. Borcia, N. Dumitrascu*
- 2P13-22** Ar rf plasma effect on polymer surfaces  
*I.A. Rusu, G. Borcia, S.O. Sayed, J.L. Sullivan*
- 2P13-23** Prospects of plasma-solution system application to textile material treatment  
*A.Yu. Nikiforov, A.I. Maximov, N.A. Ermolaeva*
- 2P13-24** Oxidation of sputtered Cu films during thermal annealing in flowing air  
*M. Šašek, P. Zeman, J. Musil*
- 2P13-25** Deposition and analysis of thin films produced in atmospheric pressure glow discharge  
*M. Šíra, V. Buršíková, D. Franta, D. Trunec*
- 2P13-26** Experimental and theoretical study of PECVD in model of hollow substrates  
*P. Bartoš, L. Sedláková, P. Špatenka*
- 2P13-27** FTIR analysis of plasma polymerized SiO<sub>x</sub> films for diffusion barrier coatings of PET bottles  
*M. Deilmann, C. Pawöhner, P. Awakowicz*

- 2P13-28** TiO<sub>2</sub> thin films characterization by the polar and dispersion components of the surface free energy  
*M. Horáková, A. Kolouch, K. Mužičková, ...*
- 2P13-29** Amine functionality of poly(ethylene terephthalate) films surfaces induced by chemical and RF plasma treatments  
*M. Aflori, M. Drobotă, D. Țîmpu, V. Bărboiu*
- 2P13-30** Formation of carbon nanostructures by the plasma jets emitted from a pulsed capillary discharge at low pressures  
*M. Favre, H. Bhuyan, E. Wyndham, ...*
- 2P13-31** Uniformalization of the AT cut quartz crystal wafer using maskless localized atmospheric pressure plasma etching process  
*K. Yamamura, Y. Yamamoto, T. Morikawa, ...*
- 2P13-32** Characteristics of the electric discharge in conditions of a submerged liquid flow influence  
*E.A.Azizov, A.I.Emel'yanov, N.B.Rodionov*
- 2P13-33** Vertically aligned carbon nanotubes growth on carbon layer encapsulated catalytic metal particles  
*M. Mesko, Q. Ou, T. Matsuda, T. Tanaka, ...*
- 2P13-34** Observation of surface and cross section of amorphous fluorocarbon films composed by perfluoro-octane plasma-enhanced chemical vapor deposition  
*T. Yamauchi, H. Koike, H. Sugawara, ...*
- 2P13-35** Application of atmospheric pressure glow discharge (APGD) for deposition of thin silica-like films on polymeric webs  
*S.Starostin, E.Aldea, H. de Vries, ...*
- 2P13-36** Metallic nanoparticle evolution by low-energy ion irradiation in glow-discharge plasma  
*V. Abidzina, I. Tereshko, I. Elkin, S. Budak, ...*
- 2P13-37** Plasma chemical surface functionalization of PTFE sheet through Atmospheric Pressure Plasma Liquid Deposition approach  
*N. Zettsu, H. Itoh, and K. Yamamura*

- 2P13-38** Study of thickness reduction of a-C:H thin film under UV light irradiation  
*M. Valtr, P. Klapetek, I. Ohlídal, V. Duchon*
- 2P13-39** Deposition of  $Ba_xSr_{1-x}TiO_3$  thin films by double RF hollow cathode plasma jet system  
*Z. Hubička, P. Virostko, J. Olejníček*
- 2P13-40** Experimental study of the erosion of Ar/H<sub>2</sub> plasma-facing carbon surfaces: optical emission spectroscopy, mass spectrometry and spectroscopic ellipsometry measurements  
*T. Hansen, G. Ledru, G. Yagci, S.V. Singh,...*
- 2P13-41** Comparison of magnetron based PECVD and high frequency PECVD for large area deposition  
*R. Schmittgens, J. Fahlteich, M. Fahland,...*
- 2P13-42** Preparation of PBG fiber for ammonia concentration measuring device  
*J. Pawlat, T. Matsuo, X. Li, T. Sugiyama,...*
- 2P13-43** Surface characterization of plasma modified chitosan film using surface-wave plasma  
*A. Ogino, M. Král, M. Yamashita, M. Nagatsu*
- 2P13-44** Electric probe diagnostics of the hollow cathode plasma jet system for TiO<sub>x</sub> thin films deposition  
*P. Virostko, Z. Hubička, Š. Kment,...*
- 2P13-45** Deposition of thin TiO<sub>x</sub> films by surfatron generated plasma  
*V. Straňák, Š. Kment, Z. Hubička, P. Klusoň,...*
- 2P13-46** Ag-Al<sub>2</sub>O<sub>3</sub> composite thin films deposited by Thermionic Vacuum Arc (TVA) Technology  
*G. Musa, N. Ekem, S Pat, M. Contulov,...*
- 2P13-47** High-power pulsed magnetron sputtering of TiN films and their mechanical properties  
*B. Zuštin, K. Burcalová, J. Vlček, J. Lukáš*
- 2P13-48** Influence of set up parameters variation on Pulsed Laser Deposition of Glassy Carbon  
*A. Mangione, L. Torrisi*
- 2P13-49** Influence of the geometrical parameters on the thickness of carbon thin films deposited by Thermionic Vacuum Arc (TVA) Technology  
*G. Musa, R. Vladoiu, A. Mandes, V. Dinca,...*

- 2P13-50** Diffuse Coplanar Surface Barrier Discharge assisted deposition of water repellent films from N<sub>2</sub>/HMDSO mixtures on wood surface  
*M. Odrášková, Z. Szalay, J. Ráhel', ...*
- 2P13-51** Effect of substrate biasing on amino group addition on polyethylene surface using time-modulated surface-wave plasma  
*M. Král', A. Ogino, K. Narushima, ...*
- 2P13-52** Microfabrication process and power supply for tilt measurement device  
*T. Matsuo, J. Pawlat, J. Liang, F. Kohsaka, ...*
- 2P13-53** Etching of organic low dielectric constant film in 100MHz capacitively coupled H<sub>2</sub>/N<sub>2</sub> gases plasmas  
*H. Yamamoto, S. Takashima, K. Takeda, ...*
- 2P13-54** Fabrication of submicron-dot-arrayed carbon nanotube emitters using DC plasma enhanced chemical vapour deposition  
*T. Matsuda, T. Ishikawa, M. Mesko, A. Ogino, ..*
- 2P13-55** Surface analysis by plasma assisted desorption ionisation mass spectrometry (PADI-MS)  
*T.D. Whitmore, Y. Aranda Gonzalvo, ...*

**TUESDAY, July 17**

**Topical Invited Lectures (Top Congress Hall)**

**9:00 T01 J.S. Chang**

*McMaster, Hamilton, Canada*

Physics and chemistry of plasma pollution control technology

**9:30 T03 K. P. Giapis**

*Division of Chemistry and Chemical Eng., California Institute of Technology, Pasadena, USA*

Nanoparticles from atmospheric pressure microdischarges

**10:00 T05 P. Brault**

*Gremi, Orleans, France*

Plasmas create a new path for future fuel cell designs

**10:30** Coffee break

**11:00 T07 F. Taccogna**

*IPP-Max Planck Institute, Greifswald, Germany*

Kinetic simulations of plasma thrusters

**11:30 T09 M. Ramisch**

*Institut für Plasmaforschung, Stuttgart, Germany*

Spatio-temporal structure of plasma turbulence under strongly sheared flows

**12:00 T11 V.B. Mintsev**

*Institute of Problems of Chemical Physic, Chernogolovka, Russia*

Intense shock waves and extreme states of matter

**12:30** Lunch

**Topical Invited Lectures (Congress Hall II.)**

**9:00 T02 K. Jungwirth**

*Institute of Physics AS CR., Prague, Czech Republic*

Nonlinear processes in laser plasma corona

**9:30 T04 P. Hartmann**

*Research Institute for Solid State Physics and Optics  
HAS, Budapest, Hungary*

Numerical experiments on complex plasmas:  
2D Yukawa systems

**10:00 T06 A. Zagorodny**

*Bogolyubov Institute for Theoretical Physics, Ukraine*

Effective grane interaction in dusty plasmas:  
theoretical description and numerical  
simulation

**10:30** Coffee break

**11:00 T08 R.E. Robson**

*Centre for Antimatter - Matter Studies, Australia*

Kinetic and fluid modelling of plasmas and  
swarms

**11:30 T10 A. Fruchtman**

*Holon Institute of Technology, Holon, Israel*

Neutral depletion and transport in low  
pressure plasmas

**12:00 T12 H.C. Kim**

*Pohang University of Science and Technology,  
Republic of Korea*

Analytic modeling and kinetic simulation of  
high-frequency/multiple-frequency  
capacitively coupled plasmas

**12:30** Lunch

**Workshop A (Top Congress Hall)**

- 14:00** WA1 **K.H. Schoenbach**  
Physics and applications of high power water switches
- 14:30** WA2 **K. Yan**  
All solid-switch pulsed-power source for electrohydraulic discharge plasmas
- 15:00** WA3 **M. Sato**  
Environmental and biotechnological applications of high-voltage pulsed discharge in water
- 15:30** Coffee break
- 16:00** WA4 **B.R. Locke**  
The formation of active chemical species in liquid and gas-liquid electrical discharges
- 16:30** WA5 **P. Lukes**  
The role of reactor and power supply design on chemical and physical processes in liquid and gas-liquid electrical discharges
- 17:00** WA6 **B. Juettner**  
Long-living plasmoids from a water discharge at atmospheric pressure
- 17:15** WA7 **A. Belkind**  
Pulsed electrical discharges in water: fundamentals and applications
- 17:30** WA8 **O. Lesaint**  
Degradation of organic molecules by streamer discharges in water: coupled electrical and chemical measurements
- 17:45** WA9 **M. Magureanu**  
Decomposition of methylene blue in water by corona discharges
- 18:00** Coffee break



**Workshop B (Congress Hall II.)**

- 14:00** WB1 **J. J. Rocca**  
Dense plasmas for the generation of coherent soft X-ray light
- 14:30** WB2 **E. Hotta**  
Optimization of capillary discharge condition for SXR and EUV sources
- 15:00** WB3 **E. Wyndham**  
Compact capillary discharges as sources of EUV radiation and plasma jets: physics and applications
- 15:30** Coffee break
- 16:00** WB4 **K. Kolacek**  
Exploding wire in water - a potential environment for amplification of spontaneous emission in soft X-ray region
- 16:30** WB5 **H.-J. Kunze**  
Incoherent emission from capillary discharges
- 17:00** WB6 **P. Zuppella**  
Recent progress in applications of the Ne-like Ar soft X-ray laser at L'Aquila University
- 17:15** WB7 **N. S. Kampel**  
Towards nitrogen recombination soft X-ray laser scheme in a capillary discharge z-pinch
- 17:30** WB8 **M. Vrbova**  
High gain prediction for soft x-ray laser pumped by plasma pinch in nitrogen capillary discharge
- 17:45** WB9 **S.V. Zakharov**  
Plasma dynamics in hollow cathode triggered discharge with influence of fast electrons on ionization phenomena and EUV emission
- 18:00** Coffee break

**18:30-20:00 Poster Session 3****Topic number 10**

- 3P10-01** Fast imaging of oscillatory streamer discharge in dense air  
*A. Agneray, F. Auzas, M. Makarov, ...*
- 3P10-02** Measurements and numerical simulations of fluorescent light spatial distributions for high pressure Ne and N<sub>2</sub> excited by 12 keV electron beams  
*A. Morozov, J. Wieser, R. Kruecken, A. Ulrich*
- 3P10-03** Measurement of gas temperature and OH density in pulsed positive corona discharge  
*R. Ono, T. Oda*
- 3P10-04** Simulation of discharge phenomena evolved at wire explosion in vacuum  
*R. B. Baksht, I.I. Beilis, V.I. Oreshkin, ...*
- 3P10-05** Negative corona discharge fed by oxygen with electronegative gas impurities (N<sub>2</sub>O)  
*J. Orszagh, J.D. Skalny, N.J. Mason*
- 3P10-06** Comparison between a hydrogen - filled gap breakdown and a breakdown along exploding tungsten fine wire  
*A.G. Rousskikh, V.I. Oreshkin, A.Y. Labetsky, ...*
- 3P10-07** Preliminary results in atmospheric pressure Ar-He microwave sustained discharges  
*J. Muñoz, I. Santiago, J. Luque, M.D. Calzada*
- 3P10-08** Effect of gas heating on excimer distribution in DBD Xe excimer lamp  
*H. Akashi, A. Oda, Y. Sakai*
- 3P10-09** Effect of surface charge on ignition of RF impulse discharge used for surface MgO coating in a small-diameter glass tube  
*T. Muraoka, S. Iizuka*
- 3P10-10** Plasma characteristics in air and vapor bubbles in water  
*P. Bruggeman, J. Degroote, C. Leys, ...*
- 3P10-11** Axial study of a neon surface-wave-sustained-discharge at atmospheric pressure  
*A. Sáinz, M.C. García, M. Sáez, M.D. Calzada*

- 3P10-12** Characterization of microplasma jets at atmospheric pressure  
*J. A. Souza Corrêa, C. Oliveira,...*
- 3P10-13** Numerical investigations of the integral of specific action of current for electrically exploded wires  
*V.I. Oreshkin, S.A. Barenholtz, S.A. Chaikovsky*
- 3P10-14** Fundamental characteristics of microwave discharge type plasma source under atmosphere pressure  
*A. Kobayashi, Y. Takao, K. Komurasaki*
- 3P10-15** Electrical and thermal characterisation of a very low power atmospheric pressure He plasma  
*S.D. Anghel, A. Simon*
- 3P10-16** Ignition of hydrocarbon-containing mixtures by nonequilibrium plasma. Experiment and numerical modeling  
*N.L. Aleksandrov, S.V. Kindisheva,...*
- 3P10-17** Dynamics of relay electric breakdown along gas bubble chain in a liquid  
*Yu.S. Akishev, G.I. Aponin, M.E. Grushin,...*
- 3P10-18** Influence of negative ions on the humidity effect on the first corona inception  
*P. Ortéga, M. Rodiere, R. Diaz,...*
- 3P10-19** Atmospheric correction factor for impulse breakdown voltage  
*P. Ortéga, R.T. Waters, A. Haddad,...*
- 3P10-20** Study of homogeneous DBD with fine wire meshes and PET films in air at atmospheric pressure  
*T. Mao, Z. Guan, H. Luo, Z. Liang, X. Wang,...*
- 3P10-21** Properties of the MHCD in xenon  
*B.-J. Lee, H. Rahaman, K. Frank, L. Mares,...*
- 3P10-22** Gliding discharge oxidation of hydrocarbons in the process of waste destruction  
*T. Opalinska, E. Kowalska, J. Radomska,...*
- 3P10-23** Volumetric atmospheric pressure glow discharge maintained by self-sustained dc glow discharge in helium  
*V.I. Arkhipenko, Th. Callegari, L. Pitchford...*

- 3P10-24** Atmospheric pressure air glow discharge in a three-electrode configuration  
*V.I. Arkhipenko, Th. Callegari, L. Pitchford...*
- 3P10-25** Self absorbed lines analysis of a recombining laser induced metallic plasma  
*M. Ribiere, B.G. Cheron, ...*
- 3P10-26** Spectroscopic study of the negative corona discharge in liquid and supercritical  $^4\text{He}$   
*Z. Li, N. Bonifaci, A. Denat, V.M. Atrazhev,...*
- 3P10-27** Influence of the gas flow rate on the column length and the electron density in an argon surface wave sustained discharge at atmospheric pressure  
*J. Martínez-Aguilar, M.C. García, ...*
- 3P10-28** On the source of runaway electrons in a pulsed gas discharge  
*G.A. Mesyats*
- 3P10-29** Optical and electrical characteristics of dielectric coplanar surface barrier discharge in nitrogen  
*M. Simek, T. Homola*
- 3P10-30** Efficiency of ozone production by dielectric coplanar surface barrier discharge in synthetic air  
*M. Simek, T. Homola*
- 3P10-31** Discharge in the gas channel with liquid walls as generator of non-thermal plasma at atmospheric pressure  
*I.V. Prysiazhnevych, V.V. Yukhymenko, ...*
- 3P10-32** Kinetic model analysis of  $\text{C}_3\text{H}_8$  plasma for olefin synthesis in microplasma reactors  
*A. Agiral, C. Trionfetti, K. Seshan, ...*
- 3P10-33**  $\text{CN}(\text{B}^2\Sigma^+ \rightarrow \text{X}^2\Sigma^+)$  violet system emission in a  $\text{N}_2\text{-CH}_4$  atmospheric pressure dielectric barrier discharge  
*G. Scarduelli, P. Franceschi, G. Dilecce, ...*
- 3P10-34** Generation and characteristics of rf discharge plasmas in contact with ionic liquids under low gas pressure  
*K. Baba, T. Kaneko, R. Hatakeyama*

- 3P10-35** Electrohydrodynamic properties of surface dielectric barrier discharges in ambient air for aerodynamic airflow control  
*J. Pons, E. Moreau, G. Touchard*
- 3P10-36** Atmospheric pressure RF discharge in argon: optical diagnostic, fluid model and applications  
*N. Balcon, A. Aanesland, G.J.M. Hagelaar,...*
- 3P10-37** Degradation of persistent materials by pulsed barrier discharge generated in gas-liquid two-phase flow  
*K. Yasuoka, H. Katayama, S. Ishii*
- 3P10-38** Positive point-to-plane corona discharge in air: electrical and optical analysis  
*N. Merbahi, O. Eichwald, M. Yousfi,...*
- 3P10-39** Characteristics of dielectric barrier discharge reactor for material treatment  
*K.G. Kostov, R.Y. Honda, M.E. Kayama, ...*
- 3P10-40** UV emissions from an unipolar sub- $\mu$ s pulsed DBD in He-Air mixtures  
*A.V. Pipa, M. Schmidt, K. Becker*
- 3P10-41** The ozone generation in positive and negative DC corona discharges fed by dry oxygen: Effect of gas flow rate  
*J. Országh, G. Horváth., S. Matejíček,...*
- 3P10-42** An immersed boundary method to simulate positive streamer propagation in point-to-plane geometry in air  
*B. Zeghondy, S. Celestin, A. Bourdon, ...*
- 3P10-43** A chemical model for the atmospheric pressure plasma reforming of methane with oxygen  
*N.S. Matin, J.C. Whitehead*
- 3P10-44** Atomic oxygen density in the effluent of an RF-excited atmospheric pressure plasma jet: Measurements, modelling, mechanisms  
*S. Reuter, K. Niemi, H.F. Doebele,...*
- 3P10-45** Structure formation in a DC-driven "barrier" discharge: stability analysis and numerical solutions  
*U. Ebert, I.R. Rafatov, D.D. Sijacic*

- 3P10-46** Comparison of the classical integral model with Eddington approximation and Helmholtz equation based models for photoionization produced by non-thermal gas discharges in air  
*A. Bourdon, V.P. Pasko, N.Y. Liu, ...*
- 3P10-47** The effect of diluting gas on hydrocarbons decomposition in gliding discharge  
*T. Opalinska, B. Ulejczyk, S. Pawlowski*
- 3P10-48** Chemistry of methane-nitrogen in a dielectric barrier discharge at atmospheric pressure  
*Scarduelli G., Franceschi P., Guella G., ...*
- 3P10-49** Chemical processes in nitrogen-benzene plasmas at atmospheric pressure  
*P. Franceschi, G. Guella, G. Scarduelli, ...*
- 3P10-50** Sliding discharge study in axisymmetric configuration  
*N. Zouzou, K. Takashima, E. Moreau, ...*
- 3P10-51** Near room-temperature sub-microsecond pulsed plasma jet in flowing atmospheric argon  
*J. L. Walsh, M. G. Kong*
- 3P10-52** Experimental investigation of subnanosecond gas breakdown in the E/p range  $10^3$  to  $10^5$  V/cm torr  
*H. Krompholz, L. Hatfield, A. Neuber, ...*
- 3P10-53** On the interaction of UV light with the surface charge in  $N_2$  surface DBD  
*S. de Benedictis, P.F. Ambrico, G. Dilecce, ...*
- 3P10-54** Transient spark discharge in  $N_2/CO_2/H_2O$  mixtures at atmospheric pressure  
*M. Janda, Z. Machala*
- 3P10-55** DBD for aerodynamic flow control: numerical investigation and coupling with computational fluid dynamics  
*T. Unfer, Y. Lagmich, F. Rogier, F. Thivet, ...*
- 3P10-56** High-voltage pulsed discharge along the water surface. Electric and spectral characteristics  
*A. Anpilov, E. Barkhudarov, V. Kop'ev, ...*
- 3P10-57** Spectral analysis of the light emitted from streamers in liquid  $CCl_4$   
*S. Ingebrigtsen, N. Bonifaci, A. Denat, ...*

- 3P10-58** Characterization of plasma needle with an additional grounded ring  
*S. Lazovic, N. Puač, G. Malovic, ...*
- 3P10-59** Seed electron model for Monte Carlo HPM breakdown model  
*A.A. Neuber, G.F. Edmiston, H.G. Krompholz*
- 3P10-60** Numerical simulation and comparison with experiment for a positive point to plane corona discharges in dry air  
*O. Ducasse, O. Eichwald, M. Yousfi, ...*
- 3P10-61** Numerical simulations of atmospheric pressure dielectric barrier discharges in He at different operating conditions  
*T. Martens, A. Bogaerts, W.J.M. Brok, ...*
- 3P10-62** Plasma discharges at atmospheric pressure for boundary layer separation control and neutral flow propulsion  
*A.A. Martins, M.J. Pinheiro*
- 3P10-63** Temporal and spatial evolution of the reactive species in a pulsed-DBD in He  
*A.S. Chipper, R. Cazan, V. Pohoata, G. Popa*
- 3P10-64** Parallel operation of micro-hollow-cathode sustained discharge  
*M. Maeyama, A. Ishigaya, Y. Takamine, ...*
- 3P10-65** Large-scaled line plasma production by evanescent microwave in a narrow rectangular waveguide  
*E. Abdel Fattah, M. Suzuki, Y. Kitamura, ...*
- 3P10-66** Corona discharge and flow characteristics of wire-plate type electrohydrodynamic gas pumps: ground plate convergent angle effect  
*J.S. Chang, H. Tsubone, N. Buenconsejo Jr., ...*
- 3P10-67** The two-dimensional spectroscopic investigation of the development of the coplanar dielectric barrier discharge in synthetic air at atmospheric pressure  
*T. Hoder T., M. Šíra, K.V. Kozlov, ...*
- 3P10-68** Ozone generation by micro-plasma devices: feasibility study  
*A. Fateev A., E. Stamate, P. Michelsen*

- 3P10-69** Creation of DC diaphragm discharge in electrolytes  
*Z. Stara, F. Krcma, P. Slavicek, V. Aubrecht*
- 3P10-70** Breakdown of the DC diaphragm discharge in selected water solutions  
*J. Prochazkova, Z. Stara, F. Krcma*
- 3P10-71** Optical emission spectroscopy of the barrier torch discharge  
*M. Chichina, O. Churpita, Z. Hubicka, ...*
- 3P10-72** Numerical study of microhollow cathode discharges: influence of discharge geometry on the current-voltage characteristic  
*K. Makasheva, J.-P. Boeuf, L.C. Pitchford*
- 3P10-73** Collective effect in the streamer ignition of surface discharges  
*K. Allegraud, O. Guaitella, A. Rousseau*
- 3P10-74** Properties of back ionisation cold plasma reactor with gas permeable electrodes  
*R. Kacprzyk, W. Mista*
- 3P10-75** Atmospheric pressure discharge in coaxial type electrodes operated with DC voltage  
*A. Ando, T. Kumagai, K. Hattori, M. Inutake*
- 3P10-76** Measurements and simulations of the ionic wind produced by a DC corona discharge between cylindrical wires  
*P. Berard, D.A. Lacoste, C.O. Laux*
- 3P10-77** Influence of electrode temperature on plasma parameters of diffuse coplanar surface discharge  
*J. Čech, A. Brablec, P. Stahel, M. Cernak*
- 3P10-78** Memory effect on the spatio-temporal self-organization of streamers in a DBD  
*S. Celestin, G. Canes-Boussard, ...*
- 3P10-79** Application of back ionisation phenomenon in a construction of cold plasma reactors  
*R. Kacprzyk, W. Mista*
- 3P10-80** Transmission-line analysis of streamers and leaders  
*R.F. Fernsler, M. Lampe, S.P. Slinker, ...*



- 3P10-81** Optically transparent microplasma devices and arrays fabricated by polymer-based replica molding  
*S.-J. Park, M. Lu, J. Zheng, T.S. Anderson, ...*
- 3P10-82** Comparative spectroscopic study of dielectric barrier discharge in rare gases  
*G. Ledru, N. Merbahi, N. Sewraj, F. Marchal*
- 3P10-83** Nonequilibrium atmospheric pressure plasma jets with a single electrode and their applications to chemical reactions and sterilization  
*K. Kitano, H. Furusho, Y. Nagasaki, ...*
- 3P10-84** Spatial-time modulations of VUV-VIS emission of high pressure pulsed volume discharge in argon  
*A.A. Lissovski, A.B. Treshchalov*
- 3P10-85** Study of the reactivity of a microplasma  
*X. Aubert, A. Pipa, J. Röpcke, A. Rousseau*
- 3P10-86** Pulsed corona investigations with a wide parameter range  
*T.M.P. Briels, E.M. van Veldhuizen, ...*
- 3P10-87** Characterization of discharges in atmospheric pressure air at 300-1000 K generated by nanosecond pulses repetitively applied at 2-30 kHz  
*D. Pai, D.A. Lacoste, G.D. Stancu, C.O. Laux*
- 3P10-88** An atmospheric pressure coaxial DBD reactor under bi-polar pulsed HV excitation  
*E. Panousis, F. Clement, K. Proimadis, ...*
- 3P10-89** Comparison between experimental and modelling results of an atmospheric pressure N<sub>2</sub> DBD discharge under 130 kHz sinusoidal excitation  
*E. Panousis, L. Papageorghiou, N. Spyrou, ...*
- 3P10-90** Light emission characteristics of micro-discharge array devices  
*J. Waskönig, D. O'Connell, J. Winter, ...*
- 3P10-91** Electrical and optical observations of an RF-driven micro-discharge source and plume  
*C.M.O. Mahony, T. Gans, W.G. Graham, ...*

- 3P10-92** Optimization of large-scale DBD plasmas: Mechanism and implications for improved ozone generation  
*G. Vezzu, R. Merz, R. Gisler, B. Paolini,...*
- 3P10-93** The effects of methane contamination in dielectric barrier discharge ozone generators  
*J. Lopez, G. Vezzu, A. Freilich, L. Pitchford,...*
- 3P10-94** Electrical and emission studies of a large area, uniform dielectric barrier discharge operating in polymer film processing mode  
*W.G. Graham, D. Della Croce, A.M. Hynes,...*
- 3P10-95** Underwater discharge and water filled capillary discharge  
*P. Ceccato, A. Rousseau*
- 3P10-96** Discharge plasmas generated by piezoelectric transformer and their applications: material effect of dielectric barrier electrode on ozone generation  
*K. Teranishi, H. Itoh, N. Shimomura, S. Suzuki*
- 3P10-97** Characterization of a low current-high voltage air arc discharge at high pressure  
*G. Petitpas, J. Gonzalez-Aguilar, A. Darmon,...*
- 3P10-98** Generation of DC-driven non-thermal plasma in atmospheric pressure air  
*J. Choi, T. Namihira, S. Katsuki, H. Akiyama*

### **Topic number 15**

- 3P15-01** \*OH molecular based barrier discharge lamp  
*E.A. Sosnin, S.M. Avdeev, V.F. Tarasenko*
- 3P15-02** Generation of halogen dimers emission in dielectric barrier discharge  
*E.A. Sosnin, S.M. Avdeev, V.F. Tarasenko*
- 3P15-03** Multi-wavelength dielectric barrier discharge excilamp with a mixture of krypton, chlorine, and bromine  
*E.A. Sosnin, S.M. Avdeev, V.F. Tarasenko*
- 3P15-04** A high power (50 MW), broadband (50%) plasma-aided microwave amplifier  
*I. Bogdankevich, I. Ivanov, O. Loza,...*

- 3P15-05** Heavy ion beam pumped excimer lasers  
*A. Ulrich, A. Adonin, D.H.H. Hoffmann,...*
- 3P15-06** Effect of beam pre-modulation on gain and efficiency in Cerenkov free electron laser  
*Suresh C. Sharma, Anuradha Bhasin*
- 3P15-07** High gain prediction for soft x-ray laser pumped by plasma pinch in nitrogen capillary discharge  
*P. Vrba, K. Koláček, J. Schmidt, A. Jančárek*
- 3P15-08** Low pressure (rare gas + water vapor)-discharge as a light source: (1) spectra and efficiency  
*E. Artamonova, T. Artamonova, A. Beliaeva,...*
- 3P15-09** Low pressure (rare gas + water vapor)-discharge as a light source: (2) electrical characteristics  
*E. Artamonova, T. Artamonova, A. Beliaeva,...*
- 3P15-10** Towards nitrogen recombination soft X-ray laser scheme in a capillary discharge z-pinch  
*N.S. Kampel, A. Rikanati, I. Be'ery, U. Avni,...*
- 3P15-11** Discharge characteristics of MgO thin films deposited by sputtering  
*T. Misu, M. Sugimoto, Namie M., Goto M,...*
- 3P15-12** Absorption and emission spectra of gaseous indium monohalides  
*A. Koerber, D. Hayashi*
- 3P15-13** Dynamics and gain prediction for nonequilibrium plasma in low-inductive discharges  
*V.A. Burtsev, N.V. Kalinin, P. Vrba, M. Vrbová*
- 3P15-14** Compact pulse power generator for X-pinch researches  
*N. Ratakhin, V. Feduschak, A. Erfort,...*
- 3P15-15** Development of multi metallic emission array using micro hollow cathode plasma  
*T. Ohta, Y. Tachibana, M. Ito, S. Takashima,...*
- 3P15-16** Emission spectra of discharge in sapphire and alumina capillaries filled by argon or nitrogen  
*M. Tamáš, A. Jančárek, M. Nevrkla,...*

- 3P15-17** The effect of discharge mode on Ba atom loss from the electrode of a low-pressure fluorescent lamp  
*T. Ueda, Y. Egashira, A. Samir, Y. Yamagata,...*
- 3P15-18** Observation of discharge patterns in a coaxial dielectric barrier discharge  
*Hasina Khatun, M. Kumar, A. K. Sharma,...*
- 3P15-19** Breakdown in xenon model discharge lamps  
*S. Peters, S. Hadrath, M. Wendt, A. Kloss,...*
- 3P15-20** Numerical simulation of the attachment of high intensity discharges at tungsten cathodes  
*F.H. Scharf, O. Langenscheidt, J. Mentel*
- 3P15-21** Large scale arrays of microcavity plasma devices based on self-assembled ring electrodes and interconnects  
*J.G. Eden, K.S. Kim, A.J. Price, S.-J. Park*
- 3P15-22** Soft X-ray emission from a plasma focus of hundreds joules  
*P. Silva, J. Moreno, C. Pavez, J. Arancibia,...*
- 3P15-23** Low-pressure microwave discharge in an Ar/Hg mixture as a UV source  
*E.M. Barkhudarov, I.A. Kossyi, N.I. Malykh,...*
- 3P15-24** Numerical analysis of antenna-excited microwave discharge lamp by finite element method  
*M. Kando, T. Fukaya, T. Mizojiri*
- 3P15-25** Voltage of lamp with MgO-coated electrode measured by sine-wave  
*M. Goto, T. Uehara, T. Shono, T. Arai*
- 3P15-26** Improvement of high power gas jet type Z pinch plasma light source for EUV lithography  
*N. Kishi, M. Watanabe, N. Iizuka,...*
- 3P15-27** Discharge plasmas generated by piezoelectric transformer and their applications; VUV emission from Xe and Ar excimers  
*H. Itoh, D. Inada, K. Teranishi,...*
- 3P15-28** Four-segment soft X-ray vacuum photodiode  
*J. Schmidt, K. Kolacek, O. Frolov,...*
- 3P15-29** Wire explosion in water  
*V. Prukner, K. Kolacek, J. Schmidt,...*

- 3P15-30** Multi-channel laser-triggered spark gap  
*O. Frolov, K. Kolacek, J. Schmidt, J. Straus,...*
- 3P15-31** Computer generated spectra indicating parameters of capillary-discharge-plasma suitable to amplify radiation of Balmer-alpha transition of H-like N (13,4 nm)  
*J. Straus, K. Kolacek, J. Schmidt, O. Frolov,...*
- 3P15-32** Recent progress in applications of the Ne-like Ar soft X-ray laser at L'Aquila University  
*P. Zuppella, G. Tomassetti, F. Bussolotti,...*

### **Topic number 16**

- 3P16-01** Non-thermal plasma *n*-heptane decomposition enhanced by supplementary addition of active species  
*S. Pekárek*
- 3P16-02** Time resolved impedance of the pulsed positive corona plasmas in polluted air at atmospheric pressure  
*N. Georgescu*
- 3P16-03** Generation of ozone using dielectric barrier discharge reactor with aqueous electrodes  
*Y. S. Mok, J. O. Jo*
- 3P16-04** Bactericidal effects of non-equilibrium cold plasma on *Geobacillus stearothermophilis* and *Bacillus cerus*  
*A. Morris, T. Akan, M. Laroussi,...*
- 3P16-05** An analysis of the effect of an installation of plasma generator position on the quantity of ozone in air conditioner room  
*N. Mungkung, P. Pinnak, B. Jaisue*
- 3P16-06** The destruction of atmospheric pressure propane and propene using a surface barrier discharge reactor  
*S.L. Hill, H.-H. Kim, S. Futamura,...*
- 3P16-07** Total oxidation of VOC using combined system of atmospheric pressure nonthermal plasma and catalysts  
*H.H. Kim, A. Ogata, S. Futamura*

- 3P16-08** Practical and economical VOC removal using adsorption and nonthermal plasma desorption  
*T. Yamamoto, T. Kuroki, R. Kawabata,...*
- 3P16-09** Possibility of the increase of hydrogen peroxide yield in plasma-solution systems for purification and sterilization  
*Y. Titova, L. Kuzmicheva, A. Maximov, V. Titov*
- 3P16-10** Water treated by pulsed electric discharges and its effect on biological objects  
*Ph. Rutberg, V. Kolikov, V. Snetov, A. Stogov,...*
- 3P16-11** Sterilisation and decontamination by means of O<sub>2</sub>:H<sub>2</sub> low pressure microwave discharge  
*O. Kylián, T. Sasaki, M. Hasiwa, H. Rauscher,...*
- 3P16-12** Optimization of N<sub>2</sub>-O<sub>2</sub> post-discharges for plasma sterilization by modelling  
*K. Kutasi, C.D. Pintassilgo, J. Loureiro*
- 3P16-13** Effect of pulse repetition rate on the efficiency of gas treatment using pulsed corona discharge  
*R.B. Baksht, Y. Yankelevich, M. Wolf,...*
- 3P16-14** Sliding discharge in capillary for honeycomb catalyst  
*S. Sato, H. Yamauchi, K. Takashima,...*
- 3P16-15** Plasma-assisted catalysis for total oxidation of trichloroethylene over mesoporous Au-SBA catalysts  
*D. Piroi, M. Magureanu, N.B. Mandache,...*
- 3P16-16** Plasma based toluene abatement in indoor air: removal efficiency and degradation pathways  
*J. Van Durme, J. Dewulf, W. Sysmans,...*
- 3P16-17** Decomposition of methylene blue in water by corona discharges  
*L. Secu, M. Magureanu, N.B. Mandache,...*
- 3P16-18** Oxidation of VOCs by non-thermal plasma and photocatalysis: interaction between reaction intermediates and porous surfaces  
*F. Thevenet, O. Guaitella, E. Puzenat,...*
- 3P16-19** The effect of temperature on the formation of NO<sub>x</sub> and the destruction of DCM using non-thermal, atmospheric pressure plasma-assisted catalysis  
*A.M. Harling, J. C. Whitehead*

- 3P16-20** Combined effect of reactor configuration and temperature on the plasma-catalysis processing of aromatics for environmental clean-up  
*A.M. Harling, V. Demidiouk, S. Fischer, ...*
- 3P16-21** Influence of power frequency on NO<sub>x</sub> removal by plasma facilitated SCR  
*J. Wang, Y. Nie, K. Zhong, L. Wang, Z. Guan*
- 3P16-22** Ozone interaction with a stainless steel and a PtRhPd/Al<sub>2</sub>O<sub>3</sub> honeycomb catalyst  
*S. Pekárek, J. Rosenkranz, J. Khun, M. Pospíšil*
- 3P16-23** Atomic species in nitrogen afterglow at atmospheric pressure used for biologic surface decontamination  
*A. Ngadjjeu, B. Eismann, A.M. Pointu, A. Ricard*
- 3P16-24** Photocatalytic decomposition of steroid hormone as environmental contaminant  
*P. Hájková, P. Špatenka, A. Kolouch, P. Kočí, ...*
- 3P16-25** Scanning probe microscopy for analysis of composite Ti/hydrocarbon plasma polymer thin films  
*A. Choukourov, A. Grinevich, D. Slavinska, ...*
- 3P16-26** Correlation between VUV radiation and sterilization efficiency in a double inductively coupled plasma  
*H. Halfmann, N. Bibinov, J. Wunderlich, ...*
- 3P16-27** Surface protein destruction using cold atmospheric plasmas  
*X.T. Deng, J.J. Shi, H.L. Chen, M.G. Kong*
- 3P16-28** Pulsed electrical discharges in water: fundamentals and applications  
*A. Belkind, S. Gershman, O. Mozgina, ...*
- 3P16-29** Characteristics of hydrogen combustion assisted by an intermittent dielectric barrier discharge  
*S. Kambara, T. Osakabe, R. Kuriyama, ...*
- 3P16-30** Low-temperature sterilization of wrapped medical instruments using low-pressure microwave plasma produced by face-type planar launchers  
*M. Nagatsu, M. K. Singh, K. Ninomiya, ...*

- 3P16-31** Line-shaped dielectric barrier discharges for inner surface processing of tubular medical instruments  
*M. Nagatsu, H. Eto, Y. Ono, A. Ogino*
- 3P16-32** Water bio-decontamination in DC discharges  
*Z. Machala, I. Jedlovský*
- 3P16-33** Inactivation of micro organisms by means of low temperature atmospheric pressure plasmas  
*F. Leipold*
- 3P16-34** Foaming column: removal of colour and COD  
*J. Pawlat, T. Matsuo, S. Ihara*
- 3P16-35** Oxidation of acetylene in atmospheric Pressure Pulsed Corona Discharge Cell working in the nanosecond regime  
*M. Redolfi, X. Duten, S. Touchard, K. Hassouni*
- 3P16-36** Destruction of simulated chemical warfare agents in non-thermal atmospheric-pressure air plasma  
*J. Jarrige, P. Vervisch*
- 3P16-37** Edge-to-gel corona discharge bactericidal effect  
*V. Kříha, J. Koller*
- 3P16-38** Influence of the plasma treatment on enzyme structure and activity  
*F.C. Dudak, J. Kousal, U.O.S. Seker, ...*
- 3P16-39** Slot excitation of microwave plasma bubbles in liquid for decomposition of solute  
*T. Ishijima, M.Sato, H.Sugai*
- 3P16-40** Chemical modification of CNT-based bio-nanosensor by plasma activation method  
*T. Hirata, S. Amiya, M. Akiya, O. Takei, ...*
- 3P16-41** Pulsed plasma purification of water containing non-degradable hazardous substances  
*K. Satoh, Y. Miyazaki, H. Itoh*
- 3P16-42** Internal sterilization technique using large-volume microwave plasma in N<sub>2</sub>-O<sub>2</sub> mixture gas with water vapor addition  
*L. Xu, A. Ogino, M. Nagatsu*



- 3P16-43** Degradation of organic molecules by streamer discharges in water: coupled electrical and chemical measurements  
*T.H. Dang, A. Denat, O. Lesaint, G. Teissedre*
- 3P16-44** Corona discharge bactericidal effect on *Escherichia coli* protected by gel layer  
*V. Kříha*
- 3P16-45** One dimensional axial modelling of a dielectric barrier discharge used for gas pollutants removal  
*S. Bhosle, R. Valdivia-Barrientos, G. Zissis, ...*
- 3P16-46** Non-equilibrium plasma assisted hydrogen production: State-of-the-art  
*G. Petipras, J. Gonzalez-Aguilar, A. Darmon, ...*
- 3P16-47** Atmospheric-pressure DC corona discharge in  $N_2$ -NO mixtures: efficiency and energy cost of nitric oxide removal  
*S. Pekárek, M. Šimek*
- 3P16-48** Effect of pulse preionization mode on characteristics of UV radiation from high-power xenon flash lamps  
*V.G. Bezuglov, I.V. Galakhov, V.A. Osin, ...*

### **Topic number 17**

- 3P17-01** Generation of powerful sub-nanosecond e-beams and X-rays in gas discharges under atmospheric pressure  
*V.F. Tarasenko*
- 3P17-02** Supershort avalanche electron beam generation in  $N_2$  and He at quasi-continuous gap voltage  
*V.F. Tarasenko, E.H. Baksht, M.I. Lomaev, ...*
- 3P17-03** Discharge current and current of supershort avalanche e-beam at volume nanosecond discharge in non-uniform electric field  
*V.F. Tarasenko, E.H. Baksht, M.I. Lomaev, ...*
- 3P17-04** Results of experimental study of a possibility of quasi-spherical implosion of current-conducting shell under the effect of axial geometry magnetic field to compress plasma target  
*B.T.Egorychev, A.V. Ivanovsky, G.I.Volkov, ...*

- 3P17-05** D-D reaction and fast deuterons in plasma focus facility  
*P. Kubes, D. Klir, J. Kravarik, K. Rezac,...*
- 3P17-06** D-D fusion neutrons generated in 500 J fibre Z-pinch  
*D. Klir, P. Kubes, J. Kravarik, K. Rezac*
- 3P17-07** Investigation of the high current multi-capillary dielectric cathodes  
*J.Z. Gleizer, Y. Hadas, D. Yarmolich,...*
- 3P17-08** Effect of high-voltage pulsed discharges on detonation to deflagration transition in gases  
*A. Rakitin, V. Zhukov, A. Starikovskii*
- 3P17-09** High current z-pinch disintegration and the task of peripheral equipment protection  
*V.I. Zaitsev, Yu.V. Andryanov, G.S. Volkov,...*
- 3P17-10** The effect of an auxiliary discharge on the plasma plume produced by a pulsed electron beam  
*M. Nistor, F. Gherendi, N.B. Mandache*
- 3P17-11** An all solid-state pulsed power generator for Plasma Immersion Ion Implantation (PIII)  
*K. Liu, J. Qiu, Y. Wu, X. Liu, H. Xiao*
- 3P17-12** A spark gap switch with very high repetition rate  
*H. Rahaman, B.-J. Lee, J. Urban, R. Stark,...*
- 3P17-13** Reconstruction of D-D neutron energy spectra from time-resolved neutron detectors placed in opposite directions  
*K. Rezac, D. Klir, P. Kubes, J. Kravarik,...*
- 3P17-14** Pulse flashover characteristic of metal oxide thin films on epoxy substrate in vacuum  
*Y.H.Cheng, Y.Chen, W.Yin, K.Wu, Z.B.Wang,...*
- 3P17-15** Influence of voltage increase rate of power pulse on flashover characteristic in vacuum  
*Y.Chen, Y.H.Cheng, K.Wu, Z.B.Wang, W.Yin,...*
- 3P17-16** Treatment of water by high electrical fields and pulsed discharges  
*A. Kalenikov, I. Kuzhekin, E. Kurbanov*

- 3P17-17** Spectroscopic measurements of the plasma plume induced during laser ablation of graphite  
*J. Hoffman, M. Jedynski, W. Mróz,...*
- 3P17-18** Nanosecond all-solid-state pulse generators on basis of FID technology for plasma chemistry applications  
*V.M. Efanov, M.V. Efanov, A.V. Kricklenko,...*
- 3P17-19** Generation of supersonic and super-Alfvénic flow using RF heating and a magnetic nozzle  
*T. Hagiwara, A. Ando, Y. Kasashima,...*
- 3P17-20** Cherenkov beam-wave interaction experiment with a pulse-powered pseudospark discharge  
*H. Yin, A.W. Cross, W. He, K. Ronald,...*
- 3P17-21** New generation of high – power semiconductor closing switches for pulsed power applications  
*S.A. Belyaev, V.G. Bezuglov, I.V. Galakhov, ...*

### **Post deadline contributions**

- PD-01** Water purification from phenol using combined plasma-catalyst processes  
*Bubnov A., Grinevich V., Gushin A.,...*
- PD-02** Physical characteristics of atmospheric pressure glow discharge with liquid electrolyte cathode (water and CuCl<sub>2</sub> solutions)  
*Kulentsan A., Rybkin V., Titov V., Smirnov S.*
- PD-03** Plasma treatment of microfluidic components  
*Dziubek A., Kurrat M.*
- PD-04** Modeling parametric scattering instabilities in large-scale expanding plasmas  
*Hussain I.*
- PD-05** Describing diffusion in a magnetized plasma with a self consistent friction approach  
*K. Peerenboom, J.J.A.M. van der Mullen,...*

**WEDNESDAY, July 18**

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**Topical Invited Lectures (Top Congress Hall)**

- 9:00 T13 M.D. Bowden**  
*The Open University Milton Keynes, UK*  
Electric field measurements by laser spectroscopy
- 9:30 T15 T. Nakano**  
*National Defense Academy, Yokosuka, Japan*  
Diagnostics of N<sub>2</sub> and O<sub>2</sub> dissociation in RF plasmas by vacuum ultraviolet emission and absorption spectroscopy
- 10:00 T17 Y.-K. Pu**  
*Tsinghua University, Beijing, China*  
Using OES to determine electron temperature and density in low pressure nitrogen and argon plasmas
- 10:30** Coffee break
- 11:00 T19 D. Graves**  
*University of California, Berkeley, USA*  
Molecular dynamics and beam studies of plasma-surface interactions
- 11:30 T21 E. Tatarova**  
*Centro de Fisica, Lisboa, Portugal*  
Microwave discharges in molecular gases driven by surface waves
- 12:00 T23 D. O'Connell**  
*Ruhr University Bochum, Bochum, Germany*  
Exotic phenomena in plasmas at extremely low pressure
- 12:30 T25 K. Ronald**  
*University of Strathclyde, Glasgow, Scotland*  
Laboratory experimental investigations of the mechanism for Auroral Kilometric Radiation Emission
- 13:00** Lunch
- 14:00** Excursions

**Topical Invited Lectures (Congress Hall II.)**

- 9:00 T14 N.R. Ray**  
*Saha Institute Of Nuclear Physics, Kolkata, India*  
Synthesis of diamond like carbon films for various applications
- 9:30 T16 A. Descoedres**  
*EPFL – CRPP, Lausanne, Switzerland*  
Time- and spatially-resolved characterization of electrical discharge machining plasma
- 10:00 T18 D.C. Cameron**  
*ASTRaL, Mikkeli, Finland*  
Time and space resolved electron temperature distribution in a Penning-type opposed target magnetron during pulsed DC sputtering
- 10:30 Coffee break**
- 11:00 T20 J. van Dijk**  
*Eindhoven Univ. of Technology, The Netherlands*  
Plasma modelling with Plasimo – design and applications
- 11:30 T22 M. Radmilovic-Radjenovic**  
*Institute of Physics, Belgrade, Serbia*  
Modeling of the gas breakdown and plasma etching
- 12:00 T24 F. Pegoraro**  
*University of Pisa, Pisa, Italy*  
Active Magnetic Experiment : a magnetic bubble in the ionospheric stream
- 12:30 T26 B. Potapkin**  
*Kintech, Moskow, Russia*  
Multiscale multiphysics non-empirical approach to the modeling of chemically active non-equilibrium plasmas
- 13:00 Lunch**
- 14:00 Excursions**

**THURSDAY, July 19**

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**General Invited Lectures (Top Congress Hall)**

**9:00 G05 M.J. Sadowski**

*The Andrzej Soltan Institute for Nuclear Studies,  
Otwock-Swierk n. Warsaw, Poland*

The main issues of research on dense magnetized plasmas

**9:45 IUPAP Early Career Award in Plasma Physics and Von Engel Award Ceremonies**

**10:15 Von Engel Prize Lecture**

**N. Sato**

*Tohoku University, Japan*

Some basic plasma experiments extended in plasma applications

**11:00 Coffee break**

**11:30 G06 Yu.P. Raizer**

*Institute for Problems in Mechanics, Moscow, Russia*

Corona initiated from grounded objects under thunderstorm conditions and its influence on lightning attachment

**12:15 G07 H. Stoeri**

*Vienna Univeristy of Technology, Wien, Austria*

On-line monitoring of plasma processes for surface treatment by spectroscopic ellipsometry

**13:00 Lunch**

**14:00-15:30 Poster Session 4****Topic number 6**

- 4P06-01** Plasma-satellites due to evanescent wave fields and plasma oscillations in the pulsed hollow-cathode  
*J. Hildebrandt*
- 4P06-02** Studies on a low energy plasma focus discharge  
*T.M. Allam, S.T.Abd El-Latif, H.M. Soliman*
- 4P06-03** Bimodal argon ion velocity distribution functions downstream of an expanding helicon source plasma  
*I.A. Biloiu, E.E. Scime, C. Biloiu, S.A. Cohen*
- 4P06-04** Thomson scattering diagnostics of the hollow-anode plasma  
*D. Yarmolich, V. Vekselman, J.Z. Gleizer,...*
- 4P06-05** Measurement of the degree of dissociation in inductively coupled nitrogen discharges by optical emission actinometry  
*Y.M. Shin, T.H. Chung*
- 4P06-06** Using the PC as a distortion meter for obtaining EEDF in glow discharge plasma  
*A.A. Azooz*
- 4P06-07** Development of compact optical emission spectroscopy system for nitrogen atom density measurement  
*K. Kurihara, K. Sasaki*
- 4P06-08** Metastable oxygen atom velocity and temperature in expanding CO<sub>2</sub> plasma jets  
*S. Mazouffre, E. Pawelec*
- 4P06-09** Transition of single probe to double probe characteristics: Effect of finite electrode area ratio  
*H. Amemiya, S. Bhattacharjee*
- 4P06-10** Effect of collisional disalignment on LIF polarization spectroscopy for measuring electric field in plasmas  
*S. Furukawa, S. Namba, K. Takiyama, T. Oda*
- 4P06-11** Diagnostics of low pressure inductively coupled VHF plasma used for nanostructured carbon deposition  
*K. Okada, S. Komatsu, S. Matsumoto*

- 4P06-12** Time resolved measurements of the electron density with a cutoff probe in a pulsed plasma  
*J.H. Kim, B.K. Na, D.J. Seong, Y.H. Shin*
- 4P06-13** Mass spectrometric investigation of high-mass species in the downstream region of Ar/CF<sub>4</sub>/O<sub>2</sub> plasmas and their formation mechanisms  
*A. Ide, K. Furuya, H. Okumura, A. Harata*
- 4P06-14** Determination of gas temperature of hydrogen containing high-frequency electrodeless lamps  
*M. Berzins, Z. Gavare, G. Revalde, J. Silinsh*
- 4P06-15** Dissociation degree of N<sub>2</sub> in dc discharges from Schlieren measurements  
*G. Cicala, A.C. Raino, A. Boggia*
- 4P06-16** Optical emission spectroscopy study of N<sub>2</sub> dc discharges at low pressure  
*G. Cicala, E. De Tommaso, A.C. Raino, ...*
- 4P06-17** Determination of spatio-temporal plasma potential variations in asymmetric bipolar pulsed DC magnetron discharges by emissive probes  
*Th. Welzel, Th. Dunger, F. Richter*
- 4P06-18** Photoionization of atmospheric gases probed by terahertz pulses  
*Z. Mics, F. Kadlec, P. Kužel, P. Jungwirth*
- 4P06-19** The electron density in a microwave-induced argon plasma determined from the continuum radiation  
*E. Iordanova, M. Guillemier, N. Vries, ...*
- 4P06-20** FFT analysis of planar distributions of oscillations in a thermal plasma jet  
*J. Gruber, J. Hlina, J. Sonsky, F. Chvala*
- 4P06-21** Method for dissociation degree determination in nitrogen plasma from atomic lines to molecular band intensities ratio  
*C. Biloiu, E.E. Scime, I.A. Biloiu, X. Sun*
- 4P06-22** Correlation between CF<sub>2</sub>- and C<sub>2</sub>F<sub>4</sub>- concentrations in pulsed capacitively coupled CF<sub>4</sub> / H<sub>2</sub> rf plasma  
*S. Stepanov, O. Gabriel, J. Meichsner*



- 4P06-23** Emissive probe diagnostic in low temperature plasma - effect of the space charge and variations of the electron saturation current  
*A. Marek, M. Jilek, I. Picková, P. Kudrna, ...*
- 4P06-24** Computerized Langmuir probe measurements in a capacitively coupled RF discharge  
*M. El Shaer, A. Soliman, A. Massoud, ...*
- 4P06-25** Measurements of NO generated by Atmospheric Pressure Plasma Jet (APPJ) by absorption and emission spectroscopy  
*A.V. Pipa, T. Bindemann, K.-D. Weltmann*
- 4P06-26** Determination of electron temperature in neon RF discharge by means of collisional-radiative model  
*Z. Navratil, O. Brzobohaty, D. Trunec, ...*
- 4P06-27** Electron temperature in the split plasma plume formed by laser ablation of Bi target  
*J. Wild, P. Kudrna, T. Gronych, L. Peksa, ...*
- 4P06-28** A microwave hairpin resonance probe for measuring electron density dynamics in laser ablation plasmas  
*S.K. Karkari, B. Doggett, D.O. Farrell, ...*
- 4P06-29** Survey of impurity fluxes in ASDEX Upgrade by manipulator systems – recent results and future plans  
*W. Schustereder*
- 4P06-30** Comparative study between the IEDs of positive ions in an RF argon discharge and argon-hydrogen discharge  
*M. Aflori, D.G. Dimitriu*
- 4P06-31** Evolution of nitrogen atom density in the nitrogen post-discharge with oxygen admixture  
*M. Mrázková, P. Vašina, C.D. Pintassilgo, ...*
- 4P06-32** Development of the laser Thomson scattering method intended for the study of low-temperature recombining plasmas in the MAP-II divertor simulator  
*S. Kado, F. Scotti, T. Shikama, Y. Kuwahara, ...*
- 4P06-33** Performance of a Langmuir probe and a hairpin resonance probe in inductively coupled low pressure plasmas  
*P. Starke, S. Christ-Koch, S.K. Karkari, ...*

- 4P06-34** Li<sup>+</sup> attachment mass spectrometric investigation of neutral molecules in the downstream region of CF<sub>4</sub> and C<sub>3</sub>F<sub>8</sub> plasmas  
*H. Okumura, K. Furuya, A. Harata*
- 4P06-35** Levitation of micro-particles of different sizes in rf plasma above the not powered electrode  
*R. Basner, J. Blazek, H. Kersten, G. Thieme*
- 4P06-36** Gas temperature and electron concentration measurements in a 30GHz gyrotron-based CVD reactor  
*A. Vikharev, A. Gorbachev, D. Radishev,...*
- 4P06-37** Electrical probes for electron energy distribution function (EEDF) measurements in low pressure hydrogen plasmas  
*S. Dietrich, S. Christ-Koch, U. Fantz,...*
- 4P06-38** Double probe characteristics at the presence of electron beam sustained in microwave surface wave plasma  
*M. Siry, J. Husarik, M. Kando*
- 4P06-39** Plasma-TiO<sub>2</sub> interaction: effect on adsorption desorption mechanisms  
*O. Guaitella, K. Allegraud, C. Lazzaroni,...*
- 4P06-40** The multipole resonance probe: A new concept for electron density determination  
*M. Lapke, T. Mussenbrock, R.P. Brinkmann*
- 4P06-41** Effect of microwave field on the Langmuir probe characteristics in measurements of high-density plasmas  
*A. Kono, L. Li, M. Aramaki*
- 4P06-42** Analysis of the free-burning high-intensity argon arc for gas tungsten arc welding and gas metal arc welding  
*A. Boutaghane, F. Valensi, S. Pellerin,...*
- 4P06-43** Low power Hall Effect Thruster erosion analysis by optical emission spectroscopy  
*D. Pagnon, S. Pellerin, M. Dudeck,...*
- 4P06-44** Spatial characterization of Ar-Ti plasma in a reactive magnetron system using emission spectroscopy  
*V. Tiron, C. Vitelaru, C. Costin, G. Popa*

- 4P06-45** Emissive probes for edge plasma measurements in magnetized plasmas  
*C. Ionita, P.C. Balan, R. Schrittwieser,...*
- 4P06-46** Hard X-ray measurement from a plasma focus of low energy  
*P. Silva, C. Fariás, P. L'Huissier,...*
- 4P06-47** Generation processes of O ( $^3P_j$ ) and O ( $^1D_2$ ) atoms in oxygen and krypton mixture surface wave excited plasma  
*K. Takeda, S. Takashima, M. Hori*
- 4P06-48** Development of compact radical monitoring probe for smart nano plasma processing  
*M. Hori, S. Takahashi, K. Takeda, S. Takashima*
- 4P06-49** Plasma and metastable distributions in low pressure Ar and He discharges  
*M.R. Talukder, S. Bose, M. Kando*
- 4P06-50** Spectroscopic investigation of an atmospheric pressure plasma jet  
*B. Bahney, M.D. Bowden, N.St.J. Braithwaite*
- 4P06-51** Dispersive-plasma diagnostics: determination of temperatures from self-reversed lines using the one-parameter model  
*D. Karabourniotis, E. Drakakis*
- 4P06-52** Comparison between TALIF measurements and NO titration for the determination of N atom density in a N<sub>2</sub> late afterglow  
*B. Rouffet, J.P. Sarrette, F. Gaboriau*
- 4P06-53** A new method to measure electron energy distribution function in radio-frequency plasmas in insulated vessel  
*K. Kusaba, H. Shindo*
- 4P06-54** Electro-optic crystal for measuring the space and time evolution of the surface charge in a dielectric barrier discharge  
*F. Gegot, Th. Callegari, M. Aillerie, J.P. Boeuf*
- 4P06-55** Spatial measurements of neutral density depletion by two-photon absorption laser-induced fluorescence spectroscopy (TALIF)  
*A. Aanesland, L. Liard, G. Leray, J. Jolly,...*
- 4P06-56** Light emission and temperatures during the DC afterglow in nitrogen-oxygen mixtures  
*F. Krčma, V. Mazánková, I. Soural, M. Šimek*

- 4P06-57** Electron density distribution of plasma produced in liquid by focusing YAG laser  
*T. Yamaguchi, N. Tsuda, J. Yamada*
- 4P06-58** Integrated diagnostics of thin film processing plasma in magnetron sputtering  
*N. Britun, M. Gaillard, S-G. Oh, J.G. Han*
- 4P06-59**  $O_2^+$  in low-pressure glow discharges in,  $O_2$ , Ar- $O_2$  and He- $O_2$  gas mixtures  
*Mohammad Aslam Khan, ...*

### **Topic number 11**

- 4P11-01** Gas heating by controlled impulse arc  
*K. Korytchenko, V. Zakutin, N. Reshetnyak, ...*
- 4P11-02** Dynamic behaviours of induction thermal plasmas sustained by arbitrary-waveform modulated coil current  
*Y. Tanaka, Y. Morishita, K. Okunaga, ...*
- 4P11-03** Spectroscopic study of recombination continuum in arc-heated cold expanding plasma jet  
*Y. Ohno, H. Matsuura, H. Akatsuka*
- 4P11-04** Modelling radiative heat transfer in thermal plasmas  
*J.-G. Lacombe, Y. Delannoy, C. Trassy*
- 4P11-05** Study of low-voltage circuit breaker by analysis of complex spectra including the self-reversed profiles of CuI resonance lines  
*S.S. Ciobanu, D. Hong, J.M. Bauchire, ...*
- 4P11-06** Influence of evaporated vapor from cathode on anode potential drop in low vacuum arc  
*K. Ishizaka, Y. Arai, M. Sugimoto, K. Takeda*
- 4P11-07** High voltage alternating current plasma generators with power up to 50 kW for plasmochemical applications  
*Ph.G. Rutberg, S.D. Popov, A.A. Safronov, ...*

- 4P11-08** Investigation on the random walk of cathode spot in vacuum arc  
*Z.Q. Shi, J. Xiao, S.L. Jia, Z.G. Liu, L., J. Wang*
- 4P11-09** 3D modelling of the cathodic arc root movement in a hollow cathode of a thermal plasma torch  
*P. Freton, J-J Gonzalez, A. Gleizes, D. Conte*
- 4P11-10** Alternating current electric arc plasma generators  
*Ph.G. Rutberg, A.A.Safronov, A.V.Surov, ...*
- 4P11-11** Emission coefficients of low temperature iron-helium plasma mixture  
*T.Mościcki, J.Hoffman, Z Szymański*
- 4P11-12** Thermal plasma diagnostic method based on the ratio of plasma radiation emitted in various spectral regions  
*M.E. Rouffet, Y. Cressault, A. Gleizes*
- 4P11-13** Research and development of electrodes for alternating current plasma generators for oxidizing working gases  
*P.G. Rutberg, V.E. Kuznetsov, K.A. Kuzmin, ...*
- 4P11-14** Arc-cathode interaction model  
*F. Cayla, J-J. Gonzalez, P. Freton*
- 4P11-15** Transport of high fluxes of hydrogen plasma in a linear plasma generator  
*W.A.J. Vijvers, R.S. Al, N.J. Lopes Cardozo, ...*
- 4P11-16** Modelling of near-cathode layers in high-pressure arc discharges  
*N.A. Almeida, M.S. Benilov, G.V. Naidis*
- 4P11-17** Gaseous Thermionic Vacuum Arc (G-TVA) – a new method for carbon film deposition from evaporating liquids or gases  
*G.Musa, R. Vladoiu, G. Prodan, ...*
- 4P11-18** Modeling of a high current vacuum arc in a transverse magnetic field and influence of the electrode gap on the arc motion  
*T. Delachaux, O. Fritz, D. Gentsch, ...*
- 4P11-19** Influence of thermal non-equilibrium on air and water plasma composition  
*H. Hingana, Ph. Teulet, Y. Cressault, ...*

- 4P11-20** Mode changes on thermionic cathodes:  
I. Sensitivity study  
*M.S. Benilov, M.D. Cunha*
- 4P11-21** Mode changes on thermionic cathodes:  
II. Preventing transient spots  
*P.G.C. Almeida, M.S. Benilov, M.D. Cunha*
- 4P11-22** Processes in Gerdien arc generated by hybrid gas-water torch  
*T. Kavka, O. Chumak P, V. Sember,...*
- 4P11-23** Measurement of excitation and ionization temperatures in an expanding H<sub>2</sub>O-Ar DC arcjet  
*V. Sember, A. Maslani*

### **Topic number 14**

- 4P14-01** An alternative source to produce hydrogen from alcohols by using an argon surface wave sustained discharge at atmospheric pressure  
*M. Jiménez, C. Yubero, I. Santiago,...*
- 4P14-02** Characteristics of atmospheric pressure corona torch plasmas for material processing  
*J. Markle, C.Q. Xu, J.S. Chang.*
- 4P14-03** Decomposition treatment of CO<sub>2</sub> using gas tunnel type plasma jet  
*A. Kobayashi, H.Hamanaka*
- 4P14-04** Hydrogen production from water by using an argon microwave plasma at atmospheric pressure: preliminary study  
*M. Pineda, I. Santiago, J. Muñoz, C. Yubero,...*
- 4P14-05** Low current gliding discharges between parallel rails in normal-air flux  
*A. Risacher, S. Larigaldie, G. Bobillot,...*
- 4P14-06** Improvement of uniformity in heat flux transported to anode by magnetically driven arc  
*I. Kuno, T. Yamamoto, K. Takeda, T. Toh,...*
- 4P14-07** Experimental research of air gasification of waste. The first results  
*A.N. Bratsev, I.L. Glezin,...*

- 4P14-08** Partial oxidation of methane with yttria-stabilized zirconia catalyst in a dielectric barrier discharge  
*A. Indarto, J.W. Choi, H. Lee, H. Sekiguchi, ...*
- 4P14-09** Quasi-DC discharge in high-speed flow for combustion enhancement  
*S.B. Leonov, D.A. Yarantsev*
- 4P14-10** Single wall carbon nanotubes synthesis via electric arc process: influence of some parameters on the yield  
*A. Mansour, M. Razafimanana, ...*
- 4P14-11** Electric field effects for combustion control - optimized geometry  
*D. Most, T. Hammer, G. Lins, D.W. Branston, ...*

**15:30** Coffee break

**16:00-17:30 Poster Session 5****Topic number 7**

- 5P07-01** Excitation of dust density waves in dusty plasmas of planetary rings  
*V.V. Yaroshenko, F. Verheest, G.E. Morfill*
- 5P07-02** Numerical solutions of the balance-equations in the three-dimensional high-latitude ionospheric model  
*I.A. Golikov, V.I. Popov, T.N. Solovyev*
- 5P07-03** A magnetic field mechanism for the origin of planetary motion  
*J.J. Lowke, R.J. Lowke*
- 5P07-04** The influence of (n-n')-mixing processes in  $\text{He}^*(n) + \text{He}(1s^2)$  collisions on  $\text{He}^*(n)$  atoms population of in weakly ionized non-equilibrium helium plasmas  
*Z. Djurić, Lj. M. Ignjatović, A. A. Mihajlov, ...*
- 5P07-05** Drift wave excitation by inhomogeneous plasma flow in solar spicules  
*J. Vranjes, H. Saleem, S. Poedts*
- 5P07-06** The obtaining of the ball lightning and the prospects of the using it for problem of nuclear fusion  
*A.G.Oreshko*
- 5P07-07** About domain structure, fields and processes in radiating stars and in Universe  
*A.G.Oreshko*
- 5P07-08** Problem of Alfvén waves in solar photosphere  
*J. Vranjes, S. Poedts, B.P. Pandey*
- 5P07-09** 3D PiC modelling of a experiment to investigate Auroral Kilometric Radiation mechanisms  
*K.M. Gillespie, D.C. Speirs, S.L. McConville, ...*
- 5P07-10** Observations of magnetosheath fluctuations  
*O. Gutynska, J. Safrankova, Z. Nemecek*
- 5P07-11** Observations of vortex-like structure near the cusp  
*O. Tkachenko, J. Safrankova, Z. Nemecek, ...*



- 5P07-12** Air heating associated with transient luminous events  
*V.P. Pasko, A. Bourdon*
- 5P07-13** Finite amplitudes helical waves on the surface of the sunspots as an example of the self-exciting homopolar heterogeneous dynamo  
*V.V. Glazkov, O.A. Sinkevich*
- 5P07-14** High-latitude bow shock: Tilt angle effects  
*K. Jelinek, Z. Nemecek, J. Safrankova*
- 5P07-15** Electron-drift driven mode in the solar atmosphere  
*D. Petrović, J. Vranjes, S. Poedts*

### **Topic number 8**

- 5P08-01** Revisiting the Bohm criterion for a plasma with two positive ion species  
*R.N. Franklin*
- 5P08-02** Radial distribution of the excessively Doppler broadened hydrogen Balmer alpha line in a titanium hollow cathode glow discharge  
*N.M. Šišović, G.Lj. Majstorović, N. Konjević*
- 5P08-03** Radial distribution of the excessively Doppler broadened deuterium Balmer alpha line in a titanium hollow cathode glow discharge  
*G.Lj. Majstorović, N.M. Šišović, N. Konjević*
- 5P08-04** Investigation of energy flux density at a substrate in a pulsed DC magnetron discharge  
*M. Čada, G.C.B. Clarke, P.J. Kelly, ...*
- 5P08-05** Electron distribution function in R-striations in an inert gas discharge  
*Yu.B. Golubovskij, A.Yu. Skoblo, C. Wilke, ...*
- 5P08-06** Evaluation of EEDF in microwave discharge plasma by spectroscopic characteristics  
*J. Mizuochi, H. Matsuura, H. Akatsuka*
- 5P08-07** Production of a hollow-type magnetron RF discharge plasma and its application to deposition of carbon related materials  
*J. Emi, S. Iizuka*

- 5P08-08** Influence of second-kind collisions on the electron distribution function in a He-Xe dc discharge  
*Yu.B. Golubovskii, F. Sigeneger,...*
- 5P08-09** Plasma decay in N<sub>2</sub>, CO<sub>2</sub> and H<sub>2</sub>O excited by high-voltage nanosecond discharge  
*N.L. Aleksandrov, S.V. Kindisheva,...*
- 5P08-10** On re-evaporation of barium and electrical conduction in its vapor in photoplasma studies  
*A. Majumder, B. Jana, V.K. Mago,...*
- 5P08-11** Time-resolved Langmuir probe diagnostics of high-power pulsed dc magnetron discharges during deposition of copper films  
*A.D. Pajdarova, J. Vlcek, P. Kudlacek,...*
- 5P08-12** Experimental investigation on the instability of the positive column in oxygen  
*H. Testrich, Ch. Wilke, R. Reimer,...*
- 5P08-13** Spatial and temporal distributions of argon metastable atom densities in high-pressure magnetron sputtering plasmas  
*N. Nafarizal, N. Takada, K. Nakamura,...*
- 5P08-14** Transport properties of the electron component in oxygen plasmas  
*G.K. Grubert, D. Loffhagen, F. Sigeneger*
- 5P08-15** Effect of applied voltage property on ignition voltage of fluorescent lamp under light irradiation  
*M. Hamamoto, S. Kai, T. Haizaki,...*
- 5P08-16** Study of a switched dc electrical discharge operating as plasma antenna  
*O.S. Stoican*
- 5P08-17** Experimental and theoretical investigations of a helium-xenon discharge in spot mode  
*J. Winter, H. Lange, I.A. Porokhova,...*
- 5P08-18** Triple probe measurements in a pulsed magnetron discharge  
*P.M. Bryant, S.A. Voronin, A. Vetushka,...*
- 5P08-19** VHF discharge sustained in a small hole  
*K. Koga, W.N. Nakamura, M. Shiratani*

- 5P08-20** Model of reactive magnetron sputtering process with non-uniform discharge current density  
*P. Vašina, T. Hytková, M. Eliáš*
- 5P08-21** Experimental observations in a Titanium z-pinch plasma  
*E. Wyndham, M. Favre, P. Valdivia*
- 5P08-22** Low-pressure breakdown and voltage-current characteristics of dc discharge in CF<sub>4</sub>  
*N. Škoro, G. Malović, D. Marić, Z. Lj. Petrović*
- 5P08-23** The influence of an external magnetic field on a "macro" hollow cathode discharge in argon  
*D.-L. Biborosch, B.-J. Lee, J. McGurk, ...*
- 5P08-24** Dependence of electrical breakdown mechanisms on gas electronegativity  
*B. Lončar, M. Vujisić, D. Arandjić, ...*
- 5P08-25** Mechanisms of electrical breakdown in vacuum diodes  
*B. Lončar, M. Vujisić, K. Stanković, ...*
- 5P08-26** Impedance of an oxygen DC-discharge  
*A. Richter, H. Testrich, Ch. Wilke, ...*
- 5P08-27** Spatial velocity and flux distributions of sputtered Ti atoms determined by using blue diode laser in a low pressure magnetron discharge  
*C. Vitelaru, L. de Poucques, T.M. Minea, ...*
- 5P08-28** N atom diagnostics in pulsed RF discharges  
*J. Jašík, J. Krištof, V. Martišoviš, ...*
- 5P08-29** Study of nitrogen molecular systems observed in NIR spectra in DBD at near and over atmospheric pressure  
*P. Čermák, J. Varga, P. Macko, ...*
- 5P08-30** Influence of reactor geometry in capacitively coupled neutral loop discharges (CCP-NLD)  
*M. Vural, F. Sirin, R.P. Brinkmann*
- 5P08-31** Comparative study of density profiles in two divertor plasma simulators: DiPS and MP<sup>2</sup>  
*H.-J. Woo, K.-S. Chung, H.-J. You, T. Lho, ...*
- 5P08-32** Drift and wave phenomena in an inductively coupled magnetic Neutral Loop Discharge  
*D.L. Crintea, T. Ishijima, H. Sugai, ...*

**Topic number 9**

- 5P09-01** General dispersion relation for microwave gas breakdown in the presence of static magnetic field  
*M. Ghorbanalilu*
- 5P09-02** Excitation of whistler modes by a loop antenna in helicon discharge plasmas  
*V.A. Es'kin, A.V. Kudrin*
- 5P09-03** Temperatures of H( $n=2$ ) and D( $n=2$ ) in H<sub>2</sub>, D<sub>2</sub>, and H<sub>2</sub>/D<sub>2</sub> mixture plasmas excited by helicon-wave discharges  
*K. Sasaki, Y. Okumura*
- 5P09-04** Dissociative mode of RF capacitive discharge in low-pressure SF<sub>6</sub>  
*V. Lisovskiyy, J.-P. Booth, J. Jolly, ...*
- 5P09-05** Plasma production using one turn internal loop antenna by means of radio frequency discharge  
*H. Fujita, K. Aramaki, Y. Ohtsu*
- 5P09-06** Nonlinear spatial profiles of plasma parameters in a magnetized inductive radio-frequency discharge  
*S. Popescu, Y. Ohtsu, H. Fujita*
- 5P09-07** Transition phenomena and striations in inductively coupled radio-frequency plasma studied by optical emission spectroscopy  
*N. Čutić, N. Glavan, S. Milošević, ...*
- 5P09-08** Operating stability diagram for the plasma needle used as deactivation agent for E. Coli bacteria  
*A. Simon, S.D. Anghel, J. Papp*
- 5P09-09** Modes of low-pressure longitudinal combined (RF/DC) and dual-frequency discharges  
*V. Lisovskiyy, J.-P. Booth, N. Kharchenko, ...*
- 5P09-10** The role of the capacitive component in the low pressure RF inductive discharge  
*A.F. Alexandrov, K.V. Vavilin, ...*
- 5P09-11** One more mechanism leading to the hysteresis of the RF inductive discharge transition from low to high density mode  
*A.F. Alexandrov, K.V. Vavilin, ..., ...*

- 5P09-12** Study of a radio frequency plasma for production of equivalents of Titan's aerosols  
*M. Cavarroc, G. Alcouffe, L. Boufendi, ...*
- 5P09-13** About the electron stochastic heating in the capacitively coupled low-pressure discharge  
*M. Tatanova, Yu.B. Golubovskii, ...*
- 5P09-14** Evidence for nanoparticles in microwave-generated fireballs by synchrotron X-ray scattering  
*J.B.A. Mitchell, J.L. LeGarrec, M. Sztucki, ...*
- 5P09-15** Theoretical study of ion energy distribution function in dual frequency RF discharges  
*V.V. Ivanov, A.S. Kovalev, D.G. Voloshin, ...*
- 5P09-16** Analytical calculation of ion energy distribution function in dual frequency RF discharges  
*M.A. Olevanov, D.G. Voloshin, ...*
- 5P09-17** Studies on a microwave-heated plasma torch  
*M. Leins, K.-M. Baumgaertner, A. Schulz, ...*
- 5P09-18** Heavy particle impact excitation of atomic oxygen in front of the powered electrode of oxygen rf plasmas - Experiment and PIC-simulation  
*K. Dittmann, K. Matyash, F.X. Bronold, ...*
- 5P09-19** Spatial and phase resolved optical emission pattern in sheath region of capacitive coupled RF plasmas  
*S. Nemschockmichal, K. Dittmann, ...*
- 5P09-20** Atmospheric pressure microwave H<sub>2</sub>O plasma source and its solid surface cleaning application  
*M. Unno, S. Ono*
- 5P09-21** Experimental study of dual frequency RF discharges in argon for different gas pressures  
*O.V. Braginsky, D.G. Voloshin, ...*
- 5P09-22** Production of N<sub>2</sub><sup>+</sup> in positive column of HF discharge in He/N<sub>2</sub> mixture  
*J. Raud, M. Laan*
- 5P09-23** Production of hydrogen using atmospheric pressure microwave plasma source operated at high flow rate  
*M. Jasinski, M. Dors, J. Mizeraczyk*

- 5P09-24** RF-biasing of highly idealized plasmas  
*R.H.J. Westermann, M.A. Blauw,...*
- 5P09-25** Mechanism of microwave guiding and plasma generation in below cutoff dimensions  
*S. Bhattacharjee, J.V. Mathew ,...*
- 5P09-26** Evolution of electron temperature and density distributions in the inter-electrode gap of DF CCP discharge during the RF period  
*O.V. Braginsky, D.G. Voloshin, ...*
- 5P09-27** Electron diffusion in intense high frequency electromagnetic fields  
*S. Bhattacharjee, I. Dey, S. Jain, H. Amemiya*
- 5P09-28** Large low pressure, high power RF sources for negative hydrogen ions for fusion applications  
*U. Fantz, P. Franzen, H.D. Falter, W. Kraus,...*
- 5P09-29** Measurement of ions in H<sub>2</sub> - N<sub>2</sub> capacitively coupled discharge  
*P. Dvořák, J. Janča*
- 5P09-30** High-density microwave plasma spots produced by multi-hollow window technique  
*S. Nakao, H. Sugai*
- 5P09-31** Electron production processes in neon RF breakdown  
*N. Sasaki, M. Shoji, Y. Uchida*
- 5P09-32** Comparison of RF barrier discharge generated by plasma pencil and low frequency variant at atmospheric pressure  
*P. Slavicek, A. Brablec, V. Kapicka,...*
- 5P09-33** Microwave surface-wave excited plasma as a source of high energy electron beam for polymer cross-linking  
*J. Husarik, T. Sahara, M. Siry, M. Kando*
- 5P09-34** High frequency behaviour of dual frequency capacitively coupled plasmas  
*E. Semmler, P. Awakowicz, D. Ziegler,...*
- 5P09-35** On the skin effect in symmetrically driven RF discharges  
*T. Mussenbrock, T. Hemke, D. Ziegler,...*

- 5P09-36** Influence of discharge tube wall thickness on surface-wave discharge parameters  
*D. Czylkowski, H. Nowakowska,...*
- 5P09-37** Electron dynamics in capacitively coupled RF discharges  
*J. Schulze, B.G. Heil, D. Luggenhoelscher,...*
- 5P09-38** Space and phase resolved electron energy distribution functions in an industrial dual-frequency capacitively coupled radio-frequency discharge  
*J. Schulze, T. Gans, D. O'Connell,...*
- 5P09-39** Observation of transient electron density rise in an afterglow H<sub>2</sub> plasma with confined capacitive radio-frequency source  
*C. Gaman, S.K. Karkari, A.R. Ellingboe*
- 5P09-40** Experimental investigation of a low pressure RF CO<sub>2</sub> plasma: Towards a new chemical kinetic scheme of the martian re-entry  
*C. Rond, A. Bultel, P. Boubert, C. Fryer,...*
- 5P09-41** A spectroscopic investigation of a water-vapor microwave plasma source  
*E. Tatarova, F.M. Dias, B. Gordiets,...*
- 5P09-42** Microwave air plasma torch  
*B. Gordiets, E. Tatarova, J. Henriques,...*
- 5P09-43** Selective emission of a two-lines spectrum in AC plasmas  
*G. Musa, C. Surdu-Bob, R. Vlodoiu*
- 5P09-44** Modelling of a large-scale N<sub>2</sub>-Ar microwave plasma source  
*J. Henriques, E. Tatarova, C.M. Ferreira*
- 5P09-45** Window breakdown: transition from vacuum multipactor to collisional microwave discharge  
*J.P. Verboncoeur, H.C. Kim, Y.Y. Lau*
- 5P09-46** Atmospheric N<sub>2</sub> - Ar wave driven discharge  
*J. Henriques, E. Felizardo, E. Tatarova,...*
- 5P09-47** Surface wave driven microwave plasma torch  
*E. Felizardo, J. Henriques, E. Tatarova,...*
- 5P09-48** Radio-frequency dielectric-barrier glow discharges in atmospheric argon  
*J.J. Shi, D.W. Liu, M.G. Kong*

**Topic number 12**

- 5P12-01** Dust particle charging in DC glow discharge plasma  
*G.I. Sukhinin, A.V. Fedoseev, ...*
- 5P12-02** Kinetic description of attraction of likely charged grains in dusty plasmas  
*V.N. Tsytovich*
- 5P12-03** Velocity autocorrelation functions of dusty particles obtained by the Langevin dynamics  
*T.S. Ramazanov, K.N. Dzhumagulova, ...*
- 5P12-04** Damping of Langmuir- and ion-acoustic waves due to charge spread on dust particles using a Bhatnagar-Gross-Krook-like term for dust particle charging  
*Alf H. Oien*
- 5P12-05** Long-living plasmoids from a water discharge at atmospheric pressure  
*B. Juettner, S. Noack, A. Versteegh, ...*
- 5P12-06** Numerical simulations of interactions of warm plasmas and a dust-grain  
*W. Miloch, H. L. Pécseli, J. Trulsen*
- 5P12-07** Analysis of the particle vibrations in 3D plasma clusters  
*T. Antonova, B.M. Annaratone, ...*
- 5P12-08** Charging and shielding of an emitting dust grain in weakly-ionized plasma in hydrodynamic approximation  
*L.G. D'yachkov, A.G. Khrapak, S.A. Khrapak*
- 5P12-09** Structures and charge of dust particles in gas discharges at cryogenic temperatures  
*S. Antipov, E. Asinovskii, A. Kirillin, ...*
- 5P12-10** Three dimensional diagnostics of dusty plasma structures in glow discharge  
*K.B. Statsenko, Yu.V. Khrustalyov, ...*
- 5P12-11** Variations of field emission from dust grains  
*J. Pavlů, I. Richterová, J. Šafránková, ...*
- 5P12-12** Void dynamics and dust particles distribution in complex reactive RF plasmas  
*I. Stefanović, E. Kovačević, J. Bernd, J. Winter*



- 5P12-13** Ion flow characteristics in experiments with dusty plasma structures  
*S. Antipov, S. Maiorov*
- 5P12-14** Rotation of a nanoparticle cloud in an inductively coupled plasma induced by weak static magnetic fields  
*M. Schulze, A. Consoli, A. von Keudell,...*
- 5P12-15** Ar<sup>+</sup> treatment influence on secondary electron spectra from dust grains  
*I. Richterová, D. Fujita, J. Pavlů,...*
- 5P12-16** Kinetic processes in combustion dusty plasma  
*A.M. Starik, A.M. Savel'ev, N.S. Titova*
- 5P12-17** The influence of the gas mixture on the material properties of plasma polymerized nanoparticles  
*E. Kovačević, J. Berndt, I. Stefanović,...*
- 5P12-18** Size-dependent effect of nanoparticles on capacitively coupled radio frequency discharge  
*I.V. Schweigert, F.M. Peeters*

## 19:00 Banquet

**FRIDAY, July 20**

**General Invited Lectures (Top Congress Hall)**

**9:00 G08 M.M. Turner**

*Dublin City University, Dublin, Ireland*

Modelling of multi-frequency capacitive discharges

**9:45 G09 E.V. Barnat**

*Sandia National Laboratories, Albuquerque, USA*

Measurement of electric fields in radiofrequency discharges

**10:30** Coffee break

**11:00 G10 E. Stamate**

*Technical University of Denmark, Roskilde, Denmark*

Charge dynamics in a three-dimensional plasma-sheath lens; phenomenology and applications

**11:45** ICPIG2009 Presentation

**12:00** Closing Ceremony

## **CONFERENCE TOURS**

### **Tours for Accompanying Persons**

- A1) Grand City Tour of Prague
- A2) Konopiste Castle
- A3) Excursion to Karlovy Vary
- A4) City Tour of Prague-Jewish Quarter

The Grand City Tour of Prague is for accompanying person included in the registration fee. This tour will be held on Monday, July 16, 2007 from 13.00 till 16.30. This excursion starts and ends at the Conference Venue - Top Hotel Praha. All other tours offered in the Tours form are bookable in advance and are specially arranged for accompanying persons.

### **Conference Excursions - July 18, 2007**

- C1) Grand City tour of Prague
- C2) Karlstejn Castle
- C3) Kutna Hora
- C4) Plzensky Prazdroj Brewery
- C5) Excursion to Glass manufactories
- C6) Excursion to the Institute of Plasma Physics

### **Post-Conference Tours**

- P1) Cesky Krumlov, Castle Hluboka
- P2) Karlovy Vary Spa, Marianske Lazne Spa,  
Frantiskovy Lazne Spa

All tours are guided by English speaking guides. All tours specially organized for the participants of the conference will take place if attended by at least 15 persons. If not the conference Management Office will offer alternative tours from regular tour operators.

### **Tours for Individuals:**

All offered tours except C4) Pilsner Brewery, C5) Glass manufactories, C6) Institute of Plasma Physics and both Post-Conference excursions (P1+P2) is possible to book on all other conference days via regular tour operators on site at the Conference Venue at the Conference Registration Desk. Kindly note that it is necessary to book them at least one day before the tour starts.

## **USEFUL CONTACTS**

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Ambulance service phone	155
Fire emergency phone	150
Police phone	158
Municipal police phone	156

### **Dental Emergencies:**

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