

CPPA 2021 Conference and Workshop Programme

Tuesday, August 31st

08:30	09:10	Registration	
09:10	09:25	Opening	
Morning session 1 – Chair: Gheorghe Popa			
09:25	09:55	I-01	M. Mozetič - Plasma technologies in Industry 4.0: Opportunities for Plasma Scientists
09:55	10:10	O-01	D. Astanei - DBD plasma treatment of polymeric foils used for flexible printed electronic circuits
10:10	10:25	O-02	M. Zarif - Atmospheric plasma fluoridation for application in dentistry
10:25	10:40	O-03	G. Tifui - Modification of mechanical properties of polydimethylsiloxane surface by low-pressure plasma treatment
10:40	10:55	O-16	I.R. Rădulescu - Copper and stainless steel plasma coated woven fabrics for EMI shielding
10:55	11:30	<i>Coffee break – Conference Hall</i>	
Morning Session 2 – Chair: Florin Spineanu			
11:30	12:00	I-03	T. Craciunescu - Romanian participation in EUROfusion research
12:00	12:15	O-04	M. Vlad - Computer-aided analysis of the theories of stochastic transport
12:15	12:30	O-05	D.I. Palade - Direct numerical simulations of the turbulent transport of heavy impurities in tokamak plasmas
12:30	12:45	O-06	C.V. Atanasiu - Simulation of plasma disruptions triggered by Vertical Displacement Events in ITER
12:45	13:00	O-09	E. Teodorescu - A Perspective on the Scaling of Magnetosheath Turbulence and Effects of Bow Shock Properties
13:00	14:30	<i>Lunch</i>	
Afternoon session – Chair: Lucel Sirghi			
14:30	15:00	I-04	C. Costin - Efficiency of the secondary electron emission in magnetized discharges
15:00	15:30	I-05	G.D. Stancu - Advanced diagnostics, thermal coupling and fundamental studies of atmospheric pressure discharges
15:30	15:45	O-18	B.G. Rusu - Laser-synthesized Si nanoparticles in liquid environment for biomedical applications
15:45	16:00	O-07	S.A. Yehia - Laser ablation technique for obtaining Be nanoparticles
16:00	16:15	O-10	I.C. Gerber - Energetic Processing of Interstellar Dust Analogs Obtained in Dielectric Barrier Discharge
16:15	16:30	<i>Coffee break</i>	
16:30	18:00	Poster session I – Chairs: Claudiu Costin, Dunpin Hong	
18:00	21:00	Welcome reception/Sytago Restaurant	

Wednesday, 1st September

08:45	09:10	Registration	
Morning session 1 – Chair: Gheorghe Dinescu			
09:10	09:40	I-06	K. Kutasi - Characteristics of surface-wave microwave discharges and their application possibilities
09:40	10:10	I-07	F.J.J. Peeters - Preheating and quenching in CO ₂ microwave plasma reactors
10:10	10:25	O-11	C. Dumitrache - Vorticity Dynamics in Laser-induced Plasma
10:25	10:40	O-12	S.A. Irimiciuc - Insight plasma structuring and oxidations processes during pulsed laser deposition
10:40	10:55	O-13	P.E. Nica - Characterization of carbon ions in excimer laser-generated plasma using the electrostatic energy analyzer
10:55	11:30	<i>Coffee break – Conference Hall</i>	
Morning session 2 – Chair: Miran Mozetič			
11:30	12:00	I-08	A. Zille - Atmospheric Plasma Immobilization of Antimicrobial Zeolite Loaded Silver Nanoparticles on Medical Textiles
12:00	12:15	O-14	T. Acsente - Magnetron sputtering gas aggregation cluster source operated in plasma jet mode
12:15	12:30	O-15	O. Kylián - Plasma-based synthesis of mesoporous films of vanadium and vanadium-oxide nanoparticles
12:30	12:45	O-17	P. Isabelli - Cold atmospheric pressure plasma assisted inactivation of bioaerosols containing bacteria, purified SARS-CoV-2 RNA and SARS-CoV-2
12:45	13:00	O-08	M. Echim - On diagnosing the magnetospheric plasma state from auroral tomographic observations
13:00	14:30	<i>Lunch</i>	
14:30	19:30	<i>Excursion</i>	

Thursday, 2nd September, 1st Workshop on Plasma Applications for Smart and Sustainable Agriculture

08:30	09:00	Registration	
09:00	09:10	Opening	
Morning session 1 – Chair: Nevena Puac			
09:10	09:40	IW-01	Z. Machala - Reactive oxygen and nitrogen species in plasma activated water: tuning their concentrations and functions in plant growth promotion
09:40	10:10	IW-02	E. Marotta - Plasma-based water treatment in agricultural applications
10:10	10:25	OW-01	F. Bilea - Removal of mixtures of pharmaceutical pollutants in aqueous solutions using non-thermal plasma

10:25	10:40	OW-02	P. Brault - Energy decomposition analysis of organic pollutants in water: a way for finding plasma degradation routes
10:40	11:10	<i>Coffee break – Conference Hall</i>	
Morning session 2 – Chair: Zdenko Machala			
11:10	11:40	IW-03	O. Schlüter - Cold atmospheric pressure plasma applications along the entire food production chain: examples and perspectives
11:40	12:10	IW-04	P. Bourke - From Bench to Prototype for Fresh Produce Processing with Non-thermal Plasma
12:10	12:25	OW-03	N. Škoro - Application of a surface DBD plasma source for flour treatment
12:25	12:40	OW-04	R. Žūkienė - The potential of cold plasma for the stimulation of natural sweeteners biosynthesis in <i>Stevia rebaudiana</i> Bertoni
12:40	14:00	<i>Lunch</i>	
Afternoon session – Chair: Kinga Kutasi			
14:00	14:30	I-09	A. Nikiforov - Nitrogen fixation by pulsed electrical discharges: from backgrounds to application
14:30	15:00	I-10	M. Magureanu - Plasma degradation of antibiotic contaminants in water
15:00	15:15	O-19	T. Tian - Study of a Dielectric Barrier Discharge in Contact with Water
15:15	15:30	O-20	N. Korichi - Hybrid Non Thermal Plasma/Heterogeneous Catalysis Process for emerging contaminant mineralization in water
15:30	16:00	<i>Coffee break</i>	
16:00	17:30	Poster Session II – Chairs: Bogdana Mitu, Gregor Primc	
19:30	23:00	Conference Dinner	

Friday, 3rd September

08:45 09:10 Registration

Morning session 1 – Chair: Monica Magureanu

09:10	09:40	IW-05	T. Dufour - Dry atmospheric plasma priming: a sustainable approach to improve seeds germinative parameters
09:40	10:10	IW-06	V. Mildaziėnė - The molecular mechanisms involved in plant response to stress induced by seed exposure to cold plasma
10:10	10:25	OW-05	I. Motrescu - Effects of Surface Dielectric Barrier Discharge Treatment of Some Sprout Species in Different Conditions
10:25	10:40	OW-06	A.V. Nastuta - Tailoring plasma sources towards plasma agriculture: at the interface with liquids and solids

10:40	11:10	<i>Coffee break – Conference Hall</i>	
Morning session 2 – Chair: Bogdana Mitu			
11:10	11:40	IW-07	A. Bertaccini - Plasma activated water as disease resistance inducer in plants
11:40	12:10	IW-08	H. Brust - Plasma Treatment of Growing Plants – Effects on Plant Growth, Development and Stress Responses
12:10	13:30	Poster Session III – Chairs: Ionut Topala, Nikola Škoro	
13:50	14:00	Closing ceremony	
14:00	15:00	<i>Lunch</i>	

Note: The code of the presentations is related to the order of presenters, as included in the Book of Abstracts of the conference

Poster session I, Topics 1 and 2 – Tuesday, August 31st, 16:30 – 18:00

Topic 1: Processes in plasmas, modelling and simulation. Space plasmas

- P1-01 Kinetics of ozone generated by surface dielectric barrier discharge micro-plasma in small chambers
L. Sirghi
- P1-02 Global Ionospheric Response to a Periodic Sequence of HSS/CIR Events During the 2007–2008 Solar Minimum
C. Negrea, C. Munteanu, M.M. Echim
- P1-03 Velocity shear effects on the structure and stability of tangential discontinuities in collisionless magnetized plasmas
G. Voitu and M. Echim
- P1-04 Using PIC simulations for inertial fusion plasma modeling
A. Zubarev, M. Cuzminscvhi
- P1-05 Nonlinear diffusion of charged particles in pseudo-three-dimensional magnetic turbulence
A. Croitoru, M. Vlad, F. Spineanu
- P1-06 Effects of intermittency on turbulent transport in tokamak plasmas
L. Pomârjanschi, D.I. Palade, M. Vlad
- P1-07 Effective Larmor radius, conformal symmetry and the seeds of Edge Localized filaments
F. Spineanu, M. Vlad, A.M. Croitoru
- P1-08 Scaling laws of 2D incompressible turbulent transport
M. Ghiță, D.I. Palade, M. Vlad

Topic 2: Gas discharge physics, plasma sources and diagnostics, dusty and laser plasmas

- P2-01 Diagnosis of Be-D magnetron plasma operated in bipolar HiPIMS
P. Dinca, V. Tiron, B. Butoi, O.G. Pompilian, C. Staicu, V. Ciupina, C.P. Lungu
- P2-02 Characterization of a filamentary argon plasma jet by optical emission spectroscopy
C.I. Constantin, C. Dumitrache, B. Mitu

- P2-03 The problem of time in Langmuir probe measurements of laser produced plasmas
S.A. Irimiciuc, S. Chertopalov, M. Novotný, V. Craciun, J. Lancok
- P2-04 Current oscillations recorded by an electrostatic energy analyzer from a Carbon laser-produced plasma
P.E. Nica, C. Ursu, G. Rusu, C. Focsa
- P2-05 Optical emission spectroscopy of a BaSrTiO ablation plasma
F. Gherendi, D. Dobrin, M. Nistor
- P2-06 Atmospheric pressure AC high voltage driven plasma jet: vacuum ultraviolet radiance measurements and electrical field diagnostics
A. V. Nastuta, T. Gerling
- P2-07 Acquisition and analysis of leaning input data used in helium APPJ control: effect of voltage and frequency
M. Albu, A. Breabăn, C. Agheorghiesei, V. Pohoată, I. Mihăilă, I. Topală
- P2-08 Characterization and optimization of Laser Induced Breakdown (LIB) as an ignition method to generate open field blast waves
T. Guillaumin, S. Rudz, J-L. Hanus, M. Wartel, **S. Pellerin**
- P2-09 Capacitive power supplies for non-thermal plasma multi-reactors scale-up
R. Burlica, D. Astanei, O. Beniuga, D.E. Cretu
- P2-10 Observations of dusty CH₄ plasma with a simple image processing approach
S. Rudz, V. Massereau-Guilbaud, I. Géraud-Grenier, S. Pellerin

Poster session II, Topic 3 – Thursday, September 2nd, 16:00 – 17:30

Topic 3: Plasma material processing and fusion technology

- P3-01 The role of the deposition on the optical and electrical properties of indium oxide thin films
D. Dobrin, F. Gherendi, M. Nistor
- P3-02 Electrical characterization of CNW architectures in view of gas sensor applications
B. Bitu, A.M.I. Trefilov, A. Radu, S. Iftimie, S. Vizireanu, G. Dinescu
- P3-03 Surface analysis of zinc oxide thin films grown by pulsed electron beam deposition
M. Nistor, F. Gherendi, J. Perrière
- P3-04 Obtaining Ag-fluorocarbon nanocomposites with controlled properties by combined plasma-based methods
V. Satulu, B. Mitu, T. Acsente, C. Constantinescu, A. Bonciu, S. Brajnicov, V. Ion, G. Dinescu
- P3-05 Analysis of HCl doped polyaniline thin films by DC plasma polymerization reactor
B. Butoi, **C. Staicu**, P. Dinca, A. Tatarus, C. Porosnicu, A. Groza
- P3-06 Tribological properties of Chromia and Chromia composite coatings deposited by plasma spraying
L. Bastakys, M. Grigaliūnas, L. Marcinauskas, R. Kėželis, S. Matkovič, M. Aikas

- P3-07 Nanoscale tribological properties of diamond like carbon films deposited by different magnetron sputtering techniques
S. Teodoroff-Onesim, V. Tiron, L. Sirghi
- P3-08 Copper-based transparent heat reflecting plasma coatings for energy saving applications
I. Pana, L.R. Constantin, A.C. Parau, A.E. Kiss, A. Vladescu, C. Vitelaru
- P3-09 Plasma Functionalized Carbon Nanowalls as Microporous Layers in PEM Fuel Cells
A.M.I. Trefilov, B.I. Biță, A.E. Bălan, S. Vizireanu, G. Dinescu
- P3-10 Structural and magnetic specificity in Fe-B intermetallic thin films obtained by thermoionic vacuum arc and magnetron sputtering
C. Staicu, V. Kuncser, C. Locovei, I. Burducea, P. Dincă, B. Butoi, O. Pompilian, C. Poroșnicu, C.P. Lungu
- P3-11 RF Magnetron Sputtering Co-deposition and Characterization of Hydrogen Permeation Barrier Oxides in Tungsten & Beryllium Metallic Reinforced Matrix Composites
M. Lungu, C. Staicu, O.G. Pompilian, B. Butoi, F. Baiasu, D. Cristea, C. Porosnicu
- P3-12 A plasma method to decorate carbon nanomaterials with tungsten particles for sensor applications
S.D. Stoica, V. Marascu, C. Stancu, A. Bonciu, V. Satulu, G. Dinescu
- P3-13 Tritium release from submicronic uncontrolled tungsten dust shapes with/without microwave plasma treatments
V. Marascu, M. Payet, S. Garcia-Argote, S. Feuillastre, G. Pieters, V. Mertens, F. Miserque, E.A. Hodille, E. Bernard, C. Grisolia
- P3-14 Material- and gas-dependent changes induced by atmospheric pressure plasma treatments on metallic surfaces
M. Zarif, S.A. Yehia, B.I. Biță, V. Mărăscu, S. Vizireanu, G. Dinescu, C. Corobea
- P3-15 In-liquid plasma synthesis of Ag Np by means of a filamentary jet discharge
A.A. Ardeleanu, V. Satulu, E. Matei, G. Dinescu, and **B. Mitu**

Poster session III, Topic 4 and Workshop – Friday, September 3rd, 12:10 – 13:40

Topic 4: Plasma applications in environment, biology, medicine and agriculture

- P4-01 Silver containing transparent films on polymer substrates for antimicrobial applications
C. Vitelaru, A.C Parau, A.E. Kiss, I. Pana, M. Dinu, L.R. Constantin, A. Vladescu, M. Badea, L.E. Tonofrei
- P4-02 In vitro analysis of the cytotoxic effect of ITER-like tungsten nanoparticles on dermal fibroblast cells
L.G. Carpen, T. Acsente, M.A. Acasandrei, E. Matei, G. Dinescu
- P4-03 Augmented biocompatibility properties of PET and PET+TiO₂ foils after He plasma jet exposure
A.V. Nastuta, M. Butnaru, V. Pohoata, I. Topala, V. Tiron

- P4-04 Antimicrobial and biocompatible nanocomposites based on chitosan and Ag NPs obtained by atmospheric pressure dielectric barrier discharge plasma treatment
A.A. Ardeleanu, V. Satulu, C.V. Saviuc, C. Chifiriuc, V. Mitran, A. Campean, A. Bonciu, E. Matei, **B. Mitu**, G. Dinescu
- P4-05 Organophosphorus toxic compounds degradation in aqueous solutions using single filament DBD plasma jet source
S.A. Yehia, M. Zarif, L.G. Carpen, B. Bitu, N. Petrea, S. Vizireanu, C. Stancu, G. Dinescu
- P4-06 Determination of HMF Contents And Sugar Composition of Cold Plasma Applied Raisins
Ö. Çağındı, D. Benzer Gürel, G.D. Özdemir, U.K. Ercan

Workshop

- PW-01 The effect of a cold atmospheric filamentary plasma on seeds of beans (*Phaseolus vulgaris*)
L.G. Carpen, C. Chireceanu, B. Mitu, C. Stancu, A. Bonciu, M. Teodorescu, I. Florescu, A. Chiriloaie-Palade, A. Geicu, G. Dinescu
- PW-02 The influence of air atmospheric pressure plasma treatment on the germination of *Tagetes erecta* seeds under saline stress
B. Tatarcan, C. Ifrim, C.V. Petre, I. Mihaila, V. Pohoata, I. Topala
- PW-03 Effect of non-thermal plasma treatment on sunflower seeds
A.G. Geicu, I. Florescu, C. Chireceanu, M. Magureanu
- PW-04 Plasma-induced morphological and biochemical changes in dwarf bearded iris (*Iris reichenbachii* Heuff.) calli
S. Živković, S. Jevremović, U. Gašić, M. Milutinović, N. Puač, N. Škoro², Z.Lj. Petrović
- PW-05 Treatment of *Chlorella vulgaris* by gliding arc discharge plasma
L. Marcinauskas, A. Stirkė, K. Jonynaitė, M. Aikas, A. Tamošiūnas, A. Šuopys, G. Dalmantaitė, R. Uscila
- PW-06 Application of plasma activated water for phenol degradation using a gliding arc discharge at atmospheric pressure
M. Wartel, F. Inoubli, F. Faubert, O. Aubry, D. Astanei, S. Rudz, R. Burlica, **S. Pellerin**
- PW-07 Hydrophilization of corn seeds by non-equilibrium gaseous plasma
N. Recek, A. Vesel, R. Zaplotnik, D. Paul, G. Primc, P. Gselman, M. Mozetič
- PW-08 *Listeria monocytogenes* dynamics on multispecies biofilms formed on anti-biofilm coatings applied by Non-Equilibrium Atmospheric Plasma on stainless steel
P. Fernández-Gómez, R. Múgica-Vidal, M. González-Raurich, M. López, F. Alba-Elías, **M. Oliveira**, A. Álvarez-Ordóñez
- PW-09 Wheat seed surface changes after cold plasma treatment
P. Starič, K. Vogel-Mikuš, I. Junkar
- PW-10 Effect of plasma activated water (PAW) as a fertilizer improving the outdoor plant yield: maize case
G.B. Ndiffo Yemeli, Z. Machala