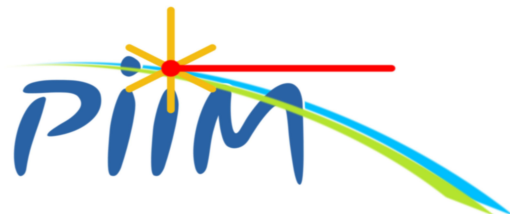


FLTPD XI
24-28 May 2015
Porquerolles island, France

We would like to thank the sponsors for their generous support



The 11th Frontiers in Low Temperature Plasma Diagnostics is organised by

The PIIM laboratory (Aix-Marseille University and the CNRS)

International scientific committee :

- Nader Sadeghi, Grenoble (F) - chair
- Georgio Dilecce, Bari (I)
- Uwe Czarnetzki, Bochum (D)
- Richard Engeln, Eindhoven (NL)
- Nick Braithwaite, Milton Keynes (UK)
- Frantisek Krcma, Brno (CZ)

Local organising committee :

- Gilles Cartry, AMU-CNRS – chair
- L  na  c Cou  del, CNRS-AMU- co-chair
- Alexandre Escarguel, AMU-CNRS
- Kostiantyn Achkasov, CEA Cadarache-AMU
- Xin Yang, AMU-CNRS
- Pierre David, AMU-CNRS
- Nathalie Bonifay, AMU-CNRS
- Marie-Pierre Carvin, AMU-CNRS
- R  gis Khamchanh, AMU-CNRS

PROGRAM

Presentations

The time slots for the invited lectures are 45 minutes long, 35 minutes for the talk and 10 minutes for questions. Topical lectures should be planned with 20 minutes for the talk and 5 minutes for questions. Please allow time for discussion.

Poster sessions

The poster sessions are planned after the dinner on Monday and Tuesday. Please make sure that your poster is put on the board well before the beginning of the poster session. Please use the board with the corresponding number to hang your poster. During the poster sessions drinks will be available.

Industrial exhibition

The following exhibitors will be present:

- Sairem <http://www.sairem.com>
- Solayl <http://www.solayl.com/>
- Journal of Physics D: Applied Physics <http://iopscience.iop.org/0022-3727>

Lunch breaks and the discussion time on Monday and Tuesday are ideal moments to visit the exhibition booths.

The excursion

The excursion is planned for Wednesday May 27th right after lunch.

In the early afternoon, different options are proposed:

- A guided tour of the village and the surroundings (two groups).
- A kayak excursion (one group, number of participants).

In the late afternoon, a wine testing is organised in a local winery (Domaine Perzinsky). Two time slots, ~40 people each are proposed:

- 17:00-18:00
- 18:00-19:00

We kindly request you to register for the desired activities on arrival.

Conference dinner

The conference dinner will be held on Wednesday after the excursion in the conference centre. A prize will be awarded for the best student presentation during the dinner.

List of invited speakers

Speaker	Affiliation	Title of the talk
Mitsutoshi ARAMAKI	Nihon University, Japan	Multi-dimensional Doppler Spectroscopy using an Optical Vortex Laser
Peter BRUGGEMAN	University of Minnesota, USA	Diagnostics of nanosecond atmospheric pressure and liquid plasmas
Alessandro DE GIACOMO	University of Bari Aldo Moro, Italy	Plasma processes and emission spectra in laser induced plasma
Fabrice DOVEIL	CNRS, AMU, France	Lamb shift and electric field measurement in plasmas
Alan HOWLING	EPFL, Switzerland	RF antennas as plasma monitors
Joe KHACHAN	The University of Sydney, Australia	Diagnostics on Inertial Electrostatic Confinement Discharges
Vincent PUECH	CNRS, Université Paris-Sud, France	Dynamics of electrons and excited states in microplasma jets
Stephan REUTER	INP Greifswald, Germany	Diagnostics of atmospheric and liquid plasmas
Antoine ROUSSEAU	CNRS, École polytechnique, France	Imaging, shadowgraphy and emission of plasmas in liquids
Volker SCHULZ-VON DER GATHEN	Ruhr-Universität Bochum, Germany	Investigating the dynamics of a self-pulsing microscaled atmospheric pressure plasma jet

List of topical lectures

Speaker	Affiliation	Title of the talk
Ana SOBOTA	Eindhoven University of Technology, The Netherlands	Cold atmospheric pressure plasma jets charge carried by plasma bullets
Abdollah SARANI	INP Greifswald, Germany	Investigation of discharge development in an atmospheric pressure single dielectric barrier discharge in N ₂ /CO ₂ mixture by Cross-correlation spectroscopy
Torsten GERLING	INP Greifswald, Germany	Measurement of molecular argon ion density in an atmospheric pressure transient spark discharge by observation of ion acoustic waves
Uwe CZARNETZKI	Ruhr-University Bochum, Germany	Time resolved evolution of the EEDF in a ns-pulsed atmospheric pressure plasma jet in Helium
Arthur SALMON	Ecole Centrale Paris, France	Spatial characterization of N(4S) and N(2P) in the afterglow of a pulsed nitrogen discharge at atmospheric pressure using optical emission spectroscopy
Mario JANDA	Comenius University Bratislava, Slovakia	Imaging of self-pulsing nanosecond transient spark discharge
Xi-Ming ZHU	Ruhr University Bochum, Germany	Measurement of the radial density profile of Ar metastables by self-absorption method with an optical probe
Jean-Pierre VAN HELDEN	INP Greifswald, Germany	Mid-infrared laser absorption spectroscopy for the detection of transient species in plasmas
Augusto STANCAMPIANO	Università di Bologna Italy	Advanced investigation of the interaction between a plasma jet and a liquid surface: influence of electrical and fluid dynamic parameters
Sebastian NEMSCHOKMICHAL	INP Greifswald Germany	Laser-photodetachment of negative ions in He/O ₂ barrier discharges
Milan TICHY	Charles University in Prague, Czech Republic	Measurements of plasma potential in low-temperature magnetized plasma - comparison between Langmuir and ball-pen probe
Daniil MARINOV	CNRS, École polytechnique, France	Time-resolved quantum cascade laser diagnostics of pulsed plasmas with strong vibrational excitation.
Gilles CUNGE	CEA, CNRS, Université Grenoble Alpes France	Measuring IVDF through high-aspect holes in pulsed ICP plasmas
Jean-Paul BOOTH	CNRS, École polytechnique, France	Ultra broad-band high sensitivity absorption spectroscopy of inductively-coupled plasmas in Cl ₂ /O ₂ mixtures
Dmytro RAFALSKYI	CNRS, École polytechnique, France	Electron density measurements in highly electronegative magnetized plasma using RF diagnostics
Emile CARBONE	Ruhr-Universität Bochum, Germany	Spatio-temporal dynamics of excited species and electrons in a pulsed argon microwave discharge

Poster Session 1: List of Posters

- 1. Atomic surface loss coefficients studied by a pulsed induced fluorescence technique*
Xin YANG, UMR7345 - Physique des Interactions Ioniques et Moléculaires
- 2. Ball-pen probe diagnostics of a weakly magnetized discharge plasma column*
Jernej Kovacic, Jozef Stefan Institute
- 3. Characterization of the E-H transition of an inductively coupled radio frequency oxygen plasma*
Thomas Wegner, University of Greifswald
- 4. Comparison between boron atoms density measured by OES, LIF and resonance absorption techniques in a H₂/CH₄/B₂H₆ micro-wave plasma*
Xavier Aubert, Laboratoire des Sciences des Procédés et des Matériaux
- 5. Determination of absolute atomic hydrogen densities and gas temperature by TALIF in a H₂/CH₄ microwave plasma at high pressure and high power*
Corinne Duluard, Laboratoire des Sciences des Procédés et des Matériaux
- 6. Controlling the Electron Density with the Multipole Resonance Probe During a Sputter Process*
Moritz Oberberg, Institute for Electrical Engineering and Plasma Technology, Ruhr-University Bochum
- 7. Comparison between measurements from emissive probe, Langmuir probe and LIF spectroscopy in the discharge of Hall thrusters*
Aude Petin, Institut de Combustion Aérothermique Réactivité et Environnement.
- 8. Determination of the angular distribution function of the negative ions produced on the HOPG surface in H₂/D₂ plasmas using mass spectrometry*
Kostiantyn Achkasov, CEA Cadarache, Physique des interactions ioniques et moléculaires
- 9. Discovery of anode-directed recombination emission wave in coplanar dielectric barrier discharge*
Jan Cech, Masaryk University, R&D Center for Low-Cost Plasma and Nanotechnology Surface Modification
- 10. Dynamics of a growing dust particle cloud in a direct-current argon sputtering glow discharge*
Lenaïc Couedel, CNRS, AMU, UMR 7345
- 11. Electron impact transfer rates between metastable and resonance states of argon investigated by laser pump-probe technique*
Emile Carbone, Laboratoire des technologies de la microélectronique, Ruhr-Universität Bochum
- 12. Influence of H₂ number density on recombination of H₃⁺ ions with electrons*
Abel Kálosi, Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University in Prague
- 13. Infrared gas phase studies on plasma-polymer interaction in high-current dielectric barrier discharges*
Yaoge Liu, FUJIFILM Manufacturing Europe B.V, Dutch Institute for Fundamental Energy Research
- 14. Laser Induced Fluorescence in an atmospheric pressure RF plasma jet*
Giorgio Dilecce, Istituto di Metodologie Inorganiche e dei Plasmi-CNR

15. *Light emission from diffuse coplanar barrier discharge in neon induced by charge relaxation*
Zdenek Navratil, Department of Physical Electronics, Masaryk University
16. *Manipulation of helium barrier discharges by laser surface interaction*
Sebastian Nemschokmichal, Institute of Physics, University of Greifswald
17. *Measurement of Metastable Helium Density in Radio Frequency Dielectric Barrier Discharge in Helium at Atmospheric Pressure*
Jean-Sébastien Boisvert, Université de Montréal, Laboratoire Procédés, Matériaux et Energie Solaire
18. *Optical and probe diagnostics of a 2.45 GHz ECR coaxial plasma source*
Juslan LO, Equipe de Recherche Diagnostic des Plasmas Hors Equilibre - Louis Latrasse, SAIREM
19. *Recombination of ortho and para H₃⁺ ions with electrons at low temperatures using flowing afterglow technique*
Petr Dohnal, Department of Surface and Plasma Science, Faculty of Mathematics and Physics, Charles University in Prague
20. *Simulating an Ion Energy Analyzer using Particle-in-Cell technique*
Jernej Kovacic, Jozef Stefan Institute
21. *Spectroscopic investigation of carbon and tungsten dust in magnetized and non-magnetized hydrogen plasma*
Karim Ouaras, LSPM
22. *Temporal evolution of plasma density in a pulsed 2-frequency (2/13.56MHz) 2-antenna inductively coupled plasma discharge*
Nishant Sirse, Dublin City University
23. *The Research of well-known Explosive RDX by Thermal Decomposition Technique by the means of Ion Mobility and Mass spectrometry*
Zuzana Lichvanova, Comenius University in Bratislava
24. *The temperature of electrons of complex plasma in the mixture of He/Ar in radio frequency discharge*
Yerbolat Ussenov, IETP, al-Farabi Kazakh National University
25. *Time development of electric field in gamma-mode RF APGD in helium*
Zdenek Navratil, Department of Physical Electronics, Masaryk University
26. *Visible spectrum tomography of rotating coherent modes in a linear magnetized plasma*
Pierre David, Physique des interactions ioniques et moléculaires

Poster Session 2: List of posters

COST TD1208

- 1. Advanced investigation of the interaction between a plasma jet and a liquid surface: influence of atmosphere and substrate composition*
Emanuele Simoncelli, Università di Bologna
- 2. Controlled droplet transport through an atmospheric pressure plasma*
Paul Maguire, University of Ulster
- 3. Effect of electrical discharge on laser produced nanoparticles in liquid*
Y. Erdogan, BEAM R&D Optics & Laser Technologies Ltd, , Turkey
- 4. Formation of reactive species in water falling film DBD*
Vesna Kovačević, University of Belgrade
- 5. Measurement of electric field development in He plasma jet*
Goran Sretenovic, University of Belgrade
- 6. Non-thermal plasma diagnostic using optical emission spectroscopy*
Eugen Hnatiuc, "Gheorghe Asachi" Technical University of Iasi
- 7. Optical emission spectroscopy of surface dielectric barrier discharge generated by liquid electrodes in different gases*
Antonin Brablec, Masaryk University
- 8. Spectroscopic diagnostics of underwater plasma jet based on pin-hole configuration*
Bratislav Obradović, University of Belgrade
- 9. Spectroscopy study of a barrier single micro-discharge with thin water layer as second electrode.*
Anton Nikiforov, Department of Applied Physics, Ghent University
- 10. Underwater plasma jet based on the pin-hole configuration*
Frantisek Krcma, Brno University of Technology, Faculty of Chemistry

Non- COST

- 11. A novel approach for low pressure wire anode glow discharge*
Ignacio Gabriel Vicente Gabás, Fraunhofer Institute for Organic Electronics, Electron Beam and Plasma Technology FEP
- 12. A pulsed DC bias technique to study the negative-ion production on insulating surfaces in hydrogen plasmas*
Dmitry Kogut, Physique des interactions ioniques et moléculaires
- 13. Absorption spectroscopy in RF plasmas at atmospheric pressure: argon resonance and metastable densities.*
Anton Nikiforov, Department of Applied Physics, Ghent University
- 14. Accuracy Analysis of a Thrust Vector Ion Beam Scanner comprised of Retarding Potential Analyser*
Ralf Heidemann, Thales Deutschland GmbH Business Unit Electron Devices

15. *Characterization of hybrid gas-liquid Dielectric Barrier Discharge plasma reactors for water treatment*
Gabriele Neretti, Faculty of Engineering
16. *Depth Analyses of Multilayer Thin Films Using Laser-Induced Breakdown Spectroscopy*
M Irfan, Electro Optic System Engineering, Kocaeli University.
17. *Diagnostics in pulsed Hydrogen Plasmas*
Jérôme Dubois, Laboratoire des technologies de la microélectronique
18. *$E \times B$ probe measurements in strongly electronegative plasmas*
Denis Renaud
19. *In-situ and real-time monitoring of atmospheric pollutant oxidation on a catalytic surface under plasma exposure*
Zixian Jia, LPP, Ecole Polytechnique, UPMC, CNRS, Université Paris-Sud 11
20. *Measurement of CO densities by IR absorption spectroscopy in a CO₂/O₂ and CO₂/N₂ dielectric barrier discharge*
Claire Douat, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
21. *Neutral Energy Studies for Etching Plasmas*
A. Ayilaran, The Open University, Walton Hall, Milton Keynes, MK7 6AA.
22. *On the ion energy distribution functions at unbiased walls*
Tsanko Tsankov, Ruhr-University Bochum, Faculty for Physics and Astronomy, Institute for Plasma and Atomic Physics
23. *Optical emission spectroscopy in a VHF-CCP: Influence of a polymeric discharge chamber*
Marcel Fiebrandt
24. *Particle pairs as diagnostic tool in complex plasmas*
Vladimir Nosenko, German Aerospace Center
25. *Spectroscopic studies of MW plasma containing HMDSO, O₂ and N₂*
Andy Nave, INP Greifswald

Sunday, 24th May 2015

16:00 – 19:30 Registration

18:00 – 19:30 Welcome party

19:30 - 21:30 Diner

Monday, 25th May 2015

- 08:45 - 09:00** **Opening ceremony**
- 09:00 - 09:45** **Invited lecture**
Investigating the dynamics of a self-pulsing microscaled atmospheric pressure plasma jet
Volker Schulz-von der Gathen, Institute for Experimental Physics II, Ruhr-Universität Bochum
- 09:45 - 10:30** **Invited lecture**
Dynamics of electrons and excited species in helium microplasma jets
Vincent Puech, Laboratoire de Physique des Gaz et des Plasmas, CNRS - Université Paris-Sud 11
- 10:30 - 11:20** **Coffee break**
- 11:20 - 11:45** **Topical lecture**
Cold atmospheric pressure plasma jets - charge carried by plasma bullets
Ana Sobota, Eindhoven University of Technology.
- 11:45 - 12:10** **Topical lecture**
Investigation of discharge development in an atmospheric pressure single dielectric barrier discharge in N₂/CO₂ mixture by Cross-correlation spectroscopy
Abdollah Sarani, Leibniz-Institute for Plasma Science and Technology, Greifswald.
- 12:10 - 12:35** **Topical lecture**
Measurement of molecular argon ion density in an atmospheric pressure transient spark discharge by observation of ion acoustic waves
Torsten Gerling, Leibniz Institute for Plasma Science and Technology, Greifswald.
- 12:45 - 13:45** **Lunch**
- 13:45 - 16:45** **Informal discussions**
- 16:45 - 17:10** **Coffee break**
- 17:10 - 17:20** **SAIREM presentation**
- 17:20 - 18:05** **Invited lecture**
Plasma processes and emission spectra in laser induced plasma
Alessandro De Giacomo, University of Bari.
- 18:05 - 18:30** **Topical lecture**
Time resolved evolution of the EEDF in a ns-pulsed atmospheric pressure plasma jet in Helium
Uwe Czarnetzki, Ruhr-University Bochum, Institute for Plasma and Atomic Physics.
- 18:30 - 18:55** **Topical lecture**
Spatial characterization of N(4S) and N(2P) in the afterglow of a pulsed nitrogen discharge at atmospheric pressure using optical emission spectroscopy
Arthur Salmon, Laboratoire EM2C, Combustion, Ecole Centrale Paris.
- 19:30 - 20:30** **Diner**
- 20:30 - 22:30** **Poster Session 1**

Tuesday, 26th May 2015 (COST TD1208 Workshop)

09:00 - 09:45 **Invited lecture (COST TD1208)**

Diagnostics of atmospheric plasmas and plasmas on liquid
Stephan Reuter, INP Greifswald.

09:45 - 10:30 **Invited lecture (COST TD1208)**

Diagnostics of nanosecond atmospheric pressure and liquid plasmas
Peter Bruggeman, University of Minnesota.

10:30 - 11:20 **Coffee break**

11:20 - 12:05 **Invited lecture (COST TD1208)**

Imaging, shadowgraphy and emission of plasma in liquids
Antoine Rousseau, Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Université Paris-Sud 11.

12:05 - 12:30 **Topical lecture (COST TD1208)**

Imaging of self-pulsing nanosecond transient spark discharge
Mario Janda, Department of Environmental Physics, Faculty of Mathematics, Physics and Informatics, Comenius University Bratislava.

12:45 - 13:45 **Lunch**

13:45 - 16:45 **Informal discussion**

16:45 - 17:10 **Coffee Break**

17:10- 17:35 **Topical lecture**

Measurement of the radial density profile of Ar metastables by self-absorption method with an optical probe
Xi-Ming Zhu, Institute for Plasma and Atomic Physics, Ruhr University Bochum.

17:35- 18:00 **Topical lecture**

Mid-infrared laser absorption spectroscopy for the detection of transient species in plasmas
Jean-Pierre van Helden, Leibniz Institute for Plasma Science & Technology, Greifswald.

18:00 - 18:25 **Topical lecture (COST TD1208)**

Advanced investigation of the interaction between a plasma jet and a liquid surface: influence of electrical and fluid dynamic parameters
Augusto Stancampiano, Università di Bologna.

18:25 - 18:50 **Topical lecture**

Laser-photodetachment of negative ions in He/O₂ barrier discharges
Sebastian Nemschokmichal, Institute of Physics, University of Greifswald.

18:50 - 19:15 **Topical lecture**

Measurements of plasma potential in low-temperature magnetized plasma - comparison between Langmuir and ball-pen probe
Milan Tichy, Charles University in Prague, Faculty of Mathematics and Physics.

19:30 - 20:30 **Dinner**

20:30 - 22:30 **Poster Session 2 (COST TD1208)**

Wednesday, 27th May 2015

09:00 - 09:45 **Invited lecture**
Diagnostics on Inertial Electrostatic Confinement Discharges
Joe Khachan, School of Physics, The University of Sydney

09:45 - 10:30 **Invited lecture**
Lamb shift and electric field measurement in plasmas
Fabrice Doveil, Physique des interactions ioniques et moléculaires, CNRS, Aix-Marseille-Université.

10:30 - 11:20 **Coffee break**

11:20 - 11:45 **Topical lecture**
Time-resolved quantum cascade laser diagnostics of pulsed plasmas with strong vibrational excitation.
Daniil Marinov, Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Université Paris-Sud 11.

11:45 - 12:10 **Topical lecture**
Measuring IVDF through high-aspect holes in pulsed ICP plasmas
Gilles Cunge, Laboratoire des Technologies de la Microélectronique, CEA, CNRS, Université Grenoble Alpes.

12:10 - 12:35 **Topical lecture**
Ultra broad-band high sensitivity absorption spectroscopy of inductively-coupled plasmas in Cl₂/O₂ mixtures
Jean-Paul Booth, Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Université Paris-Sud 11.

12:45 - 13:45 **Lunch**

13:45 - 19:30 **Excursion**

19:30 - late **Conference diner followed by dancing**

Thursday, 28th May 2015

08:30 - 09:15 **Invited lecture**

RF antennas as plasma monitors

Alan Howling, Ecole Polytechnique Fédérale de Lausanne.

09:15 - 10:00 **Invited lecture**

Multi-dimensional Doppler Spectroscopy Using an Optical Vortex Laser

Mitsutoshi Aramaki, College of Industrial Technology, Nihon University, Chiba, Japan.

10:00 - 10:30 **Coffee break**

10:30 - 10:55 **Topical lecture**

Electron density measurements in highly electronegative magnetized plasma using RF diagnostics

Dmytro Rafalskyi, Laboratoire de Physique des Plasmas, Ecole Polytechnique, UPMC, CNRS, Université Paris-Sud 11.

10:55 - 11:20 **Topical lecture**

Spatio-temporal dynamics of excited species and electrons in a pulsed argon microwave discharge

Emile Carbone, Laboratoire des technologies de la microélectronique, Université Grenoble Alpes and Ruhr-Universität Bochum.

11:20 - 11:30 **Closure**

11:30 - 12:00 **Picnic basket distribution**

12:30 **Boat departure from Porquerolles harbour**

	Sunday 24th may	Monday 25th may	Tuesday 26th may COST Workshop	Wednesday 27th may	Thursday 28th may
8h					
9h		8h45: Opening ceremony	8h55: Opening COST workshop		8h30 : A Howling (Chair N Braithwaite)
10h		9h : V S Gathen (chair G Cartry) 9h45 : V Puech (chair G Cartry)	9h : S Reuter (chair F Krcma) 9h45 : P Bruggeman (chair F Krcma)	9h : J Khachan (Chair U Czarnetzki) 9h45 : F Doveil (Chair U Czarnetzki)	9h15 : M Aramaki (Chair N Braithwaite)
11h		10h30 : Coffee break	10h30 : Coffee break	10h30 : Coffee break	10h : Coffee break
12h		11h20 : A Sobota 11h45 : A Sarani 12h10 : T Gerling (chair N Sadeghi)	11h20 : A Rousseau (chair F Krcma) 12h05 : M Janda (chair F Krcma)	11h20: D Marinov 11h45: G Cunge 12h10 : JP Booth (Chair U Czarnetzki)	10h30: D Rafalskyi 10h55 : E Carbone (Chair N Braithwaite)
13h		12h45 : Lunch	12h45 : Lunch	12h45 : Lunch	11h20: Closure 11h30: Picnic basket distribution 12h30 : Boat departure from Porquerolles harbor
14h		13h45 : informal discussions	13h45 : informal discussions	13h45 : Excursion	
15h					
16h		16h45: Coffee break	16h45: Coffee break		
17h	16h-19h30 : Registration	17h10: SAIREM presentation	17h10 : X M Zhu 17h35 : J P Van Helden 18h00 : A Stancampiano 18h25 : S Nemschokmichal		
18h		17h20 : A. De Giacomo (chair G Dilecce)	18h05 : U Czarnetzki 18h30 : A Salmon (chair G Dilecce)		
19h	18h : Welcome party		18h50 : M Tichy (chair R Engeln)		
20h	19h30 : Diner	19h30 : Diner	19h30 : Diner	19h30 : Banquet and Dancing	
21h		20h30 : Poster session	20h30 : Poster session		
22h					
23h					

Invited

Topical Topical

Poster

Social