The High-Tech Plasma Processes Conference (HTPP) is a **bi-annual international conference based in Europe** with topics encompassing the **whole area of plasma processing science**.

This conference is open to all the international community in the world involved in plasma science and plasma technology. The aim of the conference is to bring different scientific communities together, facilitate the contacts between science, technology and industry and provide a platform for the exploration of both fundamental topics and new applications of plasmas.

For this edition of HTPP, as was the case for the last, we have achieved a **well balanced participation from the communities of both thermal and non-thermal plasma researchers**. **75 people** from **17 countries** attended the conference with the **total number of contributions being 74**, consisting of **19 invited talks** and **55 poster contributions**.

As a HTPP tradition a poster competition has been carried out during the conference. The winner of the poster competition **was Fabrice Mavier from Université de Limoges**, France with his paper “Pulsed arc plasma jet synchronized with drop-on-demand dispenser”

The Editors of the HTPP-2016 Proceedings
Neubiberg, 6th of March 2017

14th High-Tech Plasma Processes Conference (HTPP 2016)

INVITED SPEAKERS

1. **Masaya Shigeta** (Osaka University, Japan)
   Modelling for fluid-dynamic transport of nanopowder growing around a thermal plasma jet
2. **John Lowke** (CSIRO, Sydney, Australia)
   Contributions of plasma physics to metal-inert-gas welding
3. **Andre Anders** (Lawrence Berkeley National Lab, USA)
   Magnetron sputtering: From the historic roots to recent discoveries of spoke and breathing modes
4. **Jürgen Mentel** (Ruhr-Universität Bochum, Germany)
   What for high intensity discharge lamps beneficial in the age of LEDs
5. **Dirk Uhrlandt** (INP, Greifswald, Germany)
   Electric confinement and power budget of a free burning arc
6. **Klaus-Dieter Weltmann** (INP Greifswald, Germany)
   Plasma Medicine – Innovative physics for medical application
7. **Georg Mauer** (FZ Jülich, Germany)
   Understanding plasma spray-physical vapor deposition (PS-PVD): current state and challenges
8. **Mikhaïl Benilov** (Universidade de Madeira, Portugal)
   State-of-the-art in the simulation of plasma-electrode interaction in arc discharges
9. **A. J. M. Pemen** (Technische Universiteit Eindhoven, Netherlands)
   Perspectives of supercritical fluids for switching applications
10. **Gervais Soucy** (University of Sherbrooke, Canada)
    DC thermal submerged plasma treatment of contaminated solution containing carboxylic acid

INVITED SPEAKERS

1. **Michael Keidar** (George Washington University, USA)
   Recent Progress in Cold Plasma Application for Cancer Therapy
2. **Syed Salman Asad** (Plasmatreat GmbH, Germany)
   Atmospheric pressure plasma sources: from laboratory and publications to real applications and industrial production
3. **Maryam Aghaei** (University of Antwerp, Belgium)
   Inductively Coupled Plasma Mass Spectrometry: what can we learn from modelling?
4. **Dan Lev** (Rafael Advanced Defense Systems, Israel)
   Plasma Propulsion System Development for Commercial Satellites
5. **Davar Feili** (ESA/ESTEC, Noordwijk, Netherlands)
   Electric Propulsion Missions at the European Space Agency (ESA)
6. **Marco Boselli** (University of Bologna, Italy)
   Design oriented modeling of thermal plasma sources and processes with a focus on nanoparticles synthesis, metal welding and cutting
7. **Laurent Fulchéri** (Mines ParisTech, France)
   Direct decarbonization of methane by thermal plasma for the co synthesis of carbon black and hydrogen
8. **Yann Cressault** (LAPLACE, Toulouse, France)
   Study of the radiation of high power arcs
9. **Jean-Luc Meunier** (McGill University, Montreal, Canada)
   Tuning nucleation and functionalization of nanostructures in a thermal plasma: the case of graphene
10. **Berkant Göksel** (Electrofluidsystems, Berlin, Germany)
    First Breakthrough for Future Air-Breathing Magneto-Plasma Propulsion Systems

POSTERS

Surov Alexander	Steam, methane and carbon dioxide thermal plasma interaction with perhalocarbons
Francesco Strappaveccia	H2020 NanoDome Project: A Multiscale Approach to Gas Phase Nanoparticle Synthesis
Boselli Marco	Treatment of infected ex-vivo human skin tissue with a low power atmospheric inductively coupled plasma source optimized through design oriented simulations
Benmouffok Malyk	Numerical study of spark generated in a 3D configuration: preliminary results
Wang Fei	Theoretical study of Ar-CO2-Fe arc plasmas used in hybrid laser MAG welding: calculation of radiative properties
Müller Meike	Cold Atmospheric Plasma Technology for Decontamination of Space Equipment
Lisnyak Marina	Numerical modelling of an electric arc and its interaction with the anode
Alkhasli Ilkin	Modelling of the Temperature Distribution Inside a Sprayed Particle in Air Plasma Spraying
Bredack Mathias	Development of an AC-GMAW process for welding high-strength fine grained steels
Oh Jeong-Hwan	Numerical analysis of RF thermal plasma for the preparation of metal boride nanoparticles embedded soft radiation shielding material
Quéméneur Jean	Electrical arc movement and commutation modelling in the Low-Voltage Circuit Breaker
Quéméneur Jean	Experimental investigations on arc movement and commutation in the Low-Voltage Circuit Breaker
Tanaka Manabu	Diode-rectified multiphase ac arc with bipolar electrodes for degradation of electrode erosion
Jeong Hyung Geun	Selective synthesis of anatase and rutile TiO2 nanoparticles by DC thermal plasma
Benilov Mikhail	Simple model of current transfer to rod anodes of dc and ac high-pressure arc discharges
Kühn Marvin	Plasma actuators for flow control
Valensi Flavien	Synthesis and characterisation of carbon nanostructures substituted with boron and/or nitrogen using electric arc plasma
Kirpichev Dmitry	Synthesis of oxygen-free TiN compounds nanosized powders in the DC plasma arc reactor

POSTERS

Mallon Michael	Physical simplified arc model for Gas Metal Arc Welding (GMAW) process including cathode and anode layers
Atzberger Alexander	Investigations of a pulsed current wire arc spraying process
Kozakov Ruslan	Combined electrical and optical partial discharge diagnostics
Valensi Flavien	Anode energy transfer in a transient arc
Zhong Linlin	Effects of Copper on Thermophysical Properties and Net Emission Coefficients of CO2-N2 Mixtures in High-Voltage Circuit Breakers
Cressault Yann	Properties of air thermal plasma contaminated with AgC and AgNi vapours resulting from electrodes' erosion
Chen Zhexin	Composition of Non-LTE CO2-CH4 Plasma with Condensed Phase
Tanaka Yasunori	High rate synthesis of Si/SiOx nanoparticles/nanowires using modulated induction thermal plasmas with controlled feedstock feeding
Kim Keun Su	Role of hydrogen in high-yield growth of boron nitride nanotubes by induction thermal plasma
Kirpichev Dmitry	Leucoxene carbothermal treatment in DC plasma-arc reactor
Surov Alexander	High voltage AC plasma torches with long electric arcs for plasma-chemical applications
Surov Alexander	The Investigation of the AC Plasma Torch Working Conditions for the Plasma Chemical Supplement
Tanaka Yasunori	Development of a loop type of inductively coupled thermal plasma torch for large-area and rapid surface oxidation of Si substrate
Szulc Michal	Suitability of thermal plasmas for large-area bacteria inactivation on temperature-sensitive surfaces first results with Geobacillus stearothermophilus spores
Iha Shugo	Investigation of Inter-electrodes Plasma Composition in Removal of Oxide layer from Steel Surface by Vacuum Arc
Ilkin Alkhasli	Influence of Powder Particles on the Plasma Characteristics in Multi-arc Plasma Spraying
Kodama Naoto	2-D temperature estimation in Ar-O2 induction thermal plasmas for TiO2 nanopowder synthesis
Kirner Stefan	Anode surface structure influence on high current moving arcs in atmosphere

POSTERS

Dobkevicius Mantas	Double-Sided Ion Thruster for Contactless Space Debris Removal
Belinger Antoine	Parasitic capacitances in DBD tranformerless power supply: an issue?
Mohanta Antaryami	Optical emission spectroscopic study of CH4 plasma during the production of graphene by induction plasma synthesis
Boselli Marco	Design oriented modelling for the synthesis process of copper nanoparticles by a radio-frequency induction thermal plasma system
Cressault Yann	Plasma of Electric Arc Discharge in Air with Silver Vapours
Uhrlandt Dirk	Optical study of anode phenomena in vacuum switching arcs
Valensi Flavien	Arc tracking power balance for copper and aluminium wires
Mostaghimi Javad	A Novel Inductively Coupled Plasma Torch for Mass Spectrometry (ICP-MS)
Wang Panpan	Computational fluid dynamic analysis of Plasma Spray Physical Vapor Deposition
He Wenting	Excitation temperature and concentration profiles of an Ar/He jet under Plasma Spray-PVD conditions
Ondac Peter	Arc-anode attachment area in DC arc plasma torch
Paniel Elodie	Study of BSO properties dedicated to measurement of electric charge on dielectric surface
Zhang Hantian	Influence of gas medium on the switching arc decaying behav-iour by non-chemically equilibrium calculation
Zimmer Felix	Investigations of low temperature atmospheric pressure plasma sources for surface treatment
Hashizume Taro	Influence of doped oxide on tungsten-based electrode evaporation in multiphase AC arc
Lee Seungjun	Preparation of silicon nanopowder from wafer waste by using thermal plasma
Benilov Mikhail	Comparing models of near-cathode sheaths in high-pressure arcs
Mavier Fabrice	Pulsed arc plasma jet synchronized with drop-on-demand dispenser
Surov Alexander	The Analysis of Physics Processes in the Electric Discharge Chamber of the AC Plasma Torch under the High Pressure of the Working Gas

PROCEEDINGS

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K. Bobzin and M. Öte

DBD tranformerless power supplies: impact of the parasitic capacitances on the power transfer
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First Breakthrough for Future Air-Breathing Magneto-Plasma Propulsion Systems
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