

Programme iPlasmaNano-VIII

Sunday, 2 July 2017

17:00 – 19:00	Registration
19:00 – 21:00	Welcome buffet

Monday, 3 July 2017

08:00 – 08:30	Registration
08:30 – 09:00	Opening
Session 1	Modelling and simulation
09:00 – 09:35	Keynote 1 – Michael Bonitz Towards a self-consistent theoretical description of the plasma Interface
09:35 – 10:00	Invited 1 – Pascal Brault Molecular Dynamics approach to plasma-surface and plasma-reactivity processes
10:00 – 10:25	Invited 2 – Daniil Marinov Kinetic Monte Carlo modelling of surface processes in reactive plasmas
10:30 – 11:00	Refreshment break
Session 2	Plasma catalysis I
11:00 – 11:35	Keynote 2 – J. Christopher Whitehead Plasma catalysis –is it just a question of scale?
11:35 – 12:00	Invited 3 – Volker Hessel Engineered nanomaterials by environmentally friendly atmospheric pressure microplasma process
12:00 – 12:25	Invited 4 – Leon Lefferts Plasma catalysis, walking up the thermodynamic hill?
12:30 – 13:30	Lunch
Session 3	Nanomaterials I
13:30 – 14:05	Keynote 3 – Toshiaki Kato Nanoscale plasma processing for atomic engineering of nano carbon materials
14:05 – 14:30	Invited 5 – Jinghua Fang Plasma enabled fabrication and applications of nanometamaterials using porous alumina
14:30 – 14:45	Contributed 1 – Pandiyarasan Veluswamy Selective patterned growth of ZnO nanorods/nanosheets on carbon fabric and their wearable properties
Poster session I	Plasma catalysis and nanomaterials
15:00 – 16:00	

Session 4	Modelling, plasma catalysis and nanomaterials
16:00 – 16:25	Invited 6 – Sanjay Mathur Plasma CVD grown semiconductor metal oxide thin films and hetero-interfaces for solar hydrogen technologies
16:30 – 16:45	Contributed 2 – Evangelos Gogolides Plasma nanoassembly and plasma nanotexturing of polymers: controlling the transition from order to randomness towards versatile applications
16:45 – 17:00	Contributed 3 – Peter J. Bruggeman Silver nanoparticle synthesis at the plasma-liquid interface: mechanistic insights through modelling the plasma-liquid interface
17:00 – 17:15	Contributed 4 – Zahra Marvi Multiscale modelling of plasma-deposited hydrogenated amorphous silicon films
17:15 – 17:30	Contributed 5 – Igor Levchenko Nanostructures, metamaterials and nano-engineered surfaces in plasma thrusters: review and perspectives
17:30 – 17:45	Contributed 6 – Zhenhua Li Performance of Co/CNTs by hydrogen dielectric-barrier discharge plasma for Fischer-Tropsch synthesis
19:15	Dinner

Tuesday, 4 July 2017

Session 5	Plasma catalysis II
09:00 – 09:35	Keynote 4 – Hyun-Ha Kim Surface streamers and plasma catalysis
09:35 – 10:00	Invited 7 – Emiel J.M. Hensen Temperature-programmed plasma surface reaction
10:00 – 10:25	Invited 8 – Olivier Guaitella Seeking mechanisms of plasma/catalyst interaction with surface in situ diagnostics
10:30 – 11:00	Refreshment break
Session 6	Nanomaterials II
11:00 – 11:35	Keynote 5 – Chang-jun Liu Recent progresses in the applications of cold plasmas for CO ₂ conversion
11:35 – 12:10	Keynote 6 – Thierry Belmonte Nano-objects synthesized from Cu ₂₈ Ag ₇₂ electrodes by nanosecond-pulsed discharges in liquid nitrogen
12:10 – 12:35	Invited 9 – Wei-Hung Chiang Nanostructure engineering using atmospheric-pressure microplasmas: synthesis and applications
12:35 – 14:00	Lunch
14:00 – 18:00	Mid-session excursion: guided city walk
19:15	Dinner

Wednesday, 5 July 2017

Session 7	
Plasma medicine I	
09:00 – 09:35	Keynote 7 – Jean-Michel Pouvesle Biomedical applications of cold atmospheric pressure plasmas with a special focus on cancer treatment
09:35 – 10:00	Invited 10 – Annemie Bogaerts Plasma for cancer treatment: how can RONS penetrate through the cell membrane?
10:00 – 10:25	Invited 11 – Michael Keidar Plasma and nanoparticle applications in cancer therapy
10:30 – 11:00	Refreshment break
Session 8	
Plasma medicine II	
11:00 – 11:25	Invited 12 – Cristina Canal Liquid-mediated effects of cold plasma on bone cancer
11:25 – 11:50	Invited 13 – Sander Bekeschus Plasma, cancer, immunity – roads and challenges
11:50 – 12:15	Invited 14 – Jan-Wilm Lackmann Thiol chemistry as a molecular tool in plasma medicine
12:15 – 12:30	Contributed 7 – Sirui Li Plasma-liquid assisted synthesis of silver and rare earth nanoparticles for biomedical applications
12:30 – 13:30	Lunch
Session 9	
Microelectronics I	
13:30 – 13:55	Invited 15 – Jean-François de Marneffe Patterning challenges for ultimate CMOS and beyond CMOS nano-fabrication
13:55 – 14:20	Invited 16 – Fred Roozeboom InZnO grown by atmospheric plasma-enhanced spatial atomic layer deposition for application in high-mobility TFT circuits
14:20 – 14:45	Invited 17 – Huiying Yang Plasma enhanced performance in 3D printed flexible lithium ion batteries
14:45 – 15:10	Invited 18 – Angel Barranco Plasma-assisted oblique angle deposition of in-plane anisotropic ITO thin films
Poster session II	
Micro-electronics and plasma medicine	
15:15 – 16:15	

Session 10	
Micro-electronics II	
16:15 – 16:40	Invited 19 – Romain Chanson Cryo-etching for integration in micro-electronic: silicon deep etch for contact etching and low-k integration in back end of line (BEOL)
16:40 – 17:05	Invited 20 – Athanasios Smyrnakis Plasma etched silicon nanowires with enhanced light trapping properties for axial or radial photovoltaic nanodevices
17:05 – 17:20	Contributed 8 – Quan Zhi Zhang Protection mechanism for porous low-k materials during cryogenic etching
19:15	Conference dinner

Thursday, 6 July 2017

Session 11	
Perspectives, industry and commercialisation I	
09:00 – 09:20	Invited 21 – Ken Ostrikov Plasma-nano-synergies: catalysing cross-disciplinary collaborations
09:20 – 09:40	Invited 22 – Alquin Stevens Recent developments in digital μ PlasmaPrint surface engineering. From low volume science to high volume industrial applications
09:40 – 10:00	Invited 23 – Peter J. Bruggeman Challenges in controlling plasma processes in the plasma/nano-field: a personal perspective
10:00 – 10:20	Invited 24 – Gill Scheltjens Enabling functional thin films by soft atmospheric plasma polymerization
10:20 – 11:00	Refreshment break
Session 12	
Perspectives, industry and commercialisation II	
11:00 – 11:25	Invited 25 – David Go The plasma-catalyst interaction: exploring synergistic effects at high temperature
11:25 – 11:50	Invited 26 – Mahendra Sunkara Nanowire as a model system for designing catalysts?
11:50 – 12:05	Invited 27 – Uroš Cvelbar Plasma and edge nanoelectronics
12:05 – 12:30	Conference closing and presentation iPlasmaNano-IX

Posters

Poster session I: Plasma catalysis and nanomaterials

1. Damien U.B. Aussems: Atomistic simulations of graphite etching at realistic time-scales
2. Kristof Bal: Effect of plasma surface charging on the catalytic decomposition of carbon dioxide
3. Sotheara Chuon: Contribution to the CFD simulation of a magnetron discharge
4. Nathalie De Geyter: Study on plasma-induced modifications on pre-electrospinning polymer solutions and resultant nanofibres
5. Neda HafezKhiabani: Plasma-based conversion of CO₂ in a packed dielectric barrier discharge using coated silica spheres
6. Stijn Huygh: Insight in the surface reactions of the plasma catalytic dry reforming of methane on anatase (001)
7. Kenji Ishikawa: Programmed process for synthesis of calcium oxalate crystals in a buffered glucose solution by irradiation with non-equilibrium atmospheric-pressure plasma
8. Umedjon Khalilov: The role of hydrogen in the plasma modification of nanostructures
9. Igor Levchenko: Nanostructures, metamaterials and nano-engineered surfaces in plasma thrusters: review and perspectives
10. Alexander Parastaev: UV-Vis spectroscopy as a tool for in situ monitoring of catalyst temperature in a dielectric barrier discharge reactor
11. Harinarayan Puliyalil: Plasma catalysis for the efficient conversion of methane into valuable chemicals
12. Marleen Ramakers: Using a gliding arc plasmatron for CO₂ conversion
13. Jiann Shieh: Using plasma activation and platinum catalyst to grow carbon nanotubes at low temperature
14. Hiroo Suzuki: Wafer-scale integration of suspended graphene nanoribbon and its non-volatile optical memory operation
15. Charlotte Vets: Thermodynamic screening of bimetallic nanoparticles for chirality-selective carbon nanotube growth
16. Shengping Wang: Enhancement of CO₂ methanation performance on Ni/Al₂O₃ catalyst by plasma treatment
17. Bin Xu: Catalyst surface state control towards chirality controlled synthesis of single-walled carbon nanotube with plasma CVD
28. Athanasios Smyrnakis: Towards superhydrophobic polymers via atmospheric pressure plasma etching

Poster session II: Micro-electronics and plasma medicine

18. Rino Morent: Plasma treatment of polyactive nano-fibre conduits
19. Irina Grubova: Ab initio study of structural and electronic properties of the hydroxyapatite (001)/ rutile (110) interface
20. Yuri Gorbanev: COST RF plasma jet: understanding the standard
21. Yuri Gorbanev: Plasma initiates radical reactions
22. Markus Heyne: Atomic layer etching of amorphous Si on MoS₂ for selectively patterned MX₂ heterostructures
23. Naresh Kumar: The stimulation of L6 skeletal muscle cell differentiation by non-thermal plasma modified electrically conductive fibres
24. Angela Privat Maldonado: Three-dimensional spheroid models to investigate the effect of low-temperature plasma treatments on metastatic processes of solid tumours
25. Jamoliddin Razzokov: Effect of plasma oxidation on the properties of globular proteins: an atomic scale study
26. Stefan Tinck: Cryogenic etching of porous SiO₂ with SF₆/O₂ plasmas
27. Maksudbek Yusupov: Understanding the role of aquaporins in the selective anti-cancer capacity of cold atmospheric plasmas