

## Monday, December 10, 2012

11h00 - 13h45 : **Welcome desk** at the conference site (Amphitheatre Becquerel, Ecole Polytechnique)

13h45 : **\*\*\*\* Opening of the Conference \*\*\***

14h00 – 16h00 : **Session 1 : Metallic surfaces; Chairman : M. Sentis**

14h00 – 14h45 : **J.P. Colombier**: “Plasmonic and hydrodynamic effects in ultrafast laser generation of periodic surface structures on metals”

14h45 – 15h10 : **A. Semerok**: “Physical mechanisms of ablation thresholds and periodic structure formation for metals under femtosecond and picosecond ablation”

15h10 – 15h35 : **T. Anderson**: “Growth Mechanisms for Multi-Scale Surface Features on Metals Fabricated Using Ultrashort Pulse Laser Irradiation”

15h35 – 16h00 : **D. Autrique**: “The role of ablation mechanisms in the onset of ns-laser induced plasma formation”

16h00 – 16h30 : Coffee break

16h30 – 18h30 : **Session 2 : Dielectric - Surfaces 1/3; Chairman : M. Lancry**

16h30 – 17h15 : **J. Reif**: “The role of asymmetric excitation in self-organized nanostructure formation upon femtosecond laser ablation”

17h15 – 18h00 : **R. Cuerno**: “Nanoscale pattern formation at surfaces under ion-beam sputtering: a perspective from continuum models”

18h00 – 18h30 : **L. Juha**: “Short-wavelength laser-induced surface nanostructuring”

## Tuesday, December 11, 2012

9h00 – 10h30 : **Session 3 : Dielectric - Surfaces 2/3. Chairman: J. Reif**

9h00 – 9h45 : **J. Bonse**: “Femtosecond laser-induced periodic nanostructures”

9h45 – 10h30 : **A. Pocheau**: “Some pattern forming mechanisms on interfaces”

10h30 – 11h00 : Coffee break

11h00 – 12h30 : **Session 4 : Dielectric - Bulk 1/3 Chairman : E. Freysz**

11h00 – 11h45 : **P. Kazansky**: “Nanostructuring of Glass: From New Phenomena to Applications”

11h45 – 12h30 : **N. Bulgakova**: “Theoretical treatments of ultrashort pulse laser processing of transparent materials: Towards explanations the extraordinary phenomena”

12h30 – 13h50 : Lunch : Salle Detoef

13h50 – 16h20 : **Session 5: Dielectric – surfaces 3/3; Chairman: J. Bonse**

13h50 – 14h20 : **N. Shcheblanov**: “Role of band structure and laser parameters in kinetic modeling of ultra-short laser interactions with dielectric materials”

14h20 – 14h50 : **O. Uteza**: “Laser damage and ablation test bench in ultrashort pulsed regime: recent measurements and applications”

14h50 – 15h20 : **G. Duchateau**: “Strong nonlinear growth of energy coupling during laser irradiation of transparent dielectrics and its significance for laser induced damage”.

15h20 – 15h50 : **E. Suraud**: “Dynamics of irradiation: from molecules to nano-objects and from material science to biology”.

15h50 – 16h20 **S. Klimentov**: “Intraband heating and optical breakdown in sapphire induced by sub-picosecond pulses”.

16h20 – 16h50 Coffee break

16h50 – 18h40 **Session 6 : Dielectric –Bulk 2/3; Chairman: B. Poumellec**

16h50 – 17h35 : **M. Sakakura**: “Stress dynamics of femtosecond laser-induced bulk machining inside single crystals”.

17h35 – 18h20 : **R. Stoian**: “Investigation and control of ultrafast laser-induced nanoscale patterns in bulk dielectric materials”.

18h20 – 18h50 : **F. Zimmermann**: “On the fundamental morphology of femtosecond laser-induced nanogratings”

18h50 – 19h00 : Break - poster installation

19h00 – 21h00 : **Poster session with buffet** : Salle des Cadres

**Poster Session : Tuesday, 19h00 – 21h00 – Salle Des Cadres**

**C. Antoine** “Metallic surfaces under high field: is there common feature between laser exposed surface and RF exposed surfaces”

**A. Barsella** : “Near infrared two-photon self-confinement in photopolymers for light induced self-written waveguides fabrication”.

**J. Bonse**: “Femtosecond laser induced structural modifications in binary lithium silicate glasses probed by micro Raman spectroscopy”.

**T. Derrien** : “Femtosecond laser-assisted evaporation of atoms from a silicon tip under strong external field: insights into the evaporation mechanisms”.

**M. Grehn**: “Femtosecond laser-induced modification of K-Mg silicate glasses: an analysis of structural changes by near edge X-ray absorption spectroscopy”.

**X. He** : “Space-selectively precipitation of oriented oxide crystals in glass with femtosecond laser irradiation”.

**T. Itina**: “Nanoparticle formation by ultra-short laser ablation of metals in liquid: numerical study”.

**M. Lebugle** : “Femtosecond laser pulse absorption at the surface of dielectrics

**A. Mouskeftaras** : “Laser induced breakdown of dielectrics :Experimental investigation of basic mechanisms”.

**G. Tsibidis**: “Thermoplastic deformation of silicon surfaces induced by ultrashort pulsed lasers”.

**Wednesday, December 12, 2012**

9h00 – 10h30 : **Session 7 : Dielectric –Bulk 3/3; Chairman: P. Kazansky**

9h00 – 9h30 : **Y. Petit:** “Direct Laser-Writing in a silver-zinc doped phosphate glass: mechanisms at play during the formation of silver clusters”

9h30 – 10h15 : **G. Rizza:** “Beyond the ion-beam shaping mechanism: toward plasmonic applications”.

10h15 – 10h45: **S. Chouli:** “Time resolved measurement of the grating induced by femtosecond pulses in a SF59 glass”.

10h45 – 11h15 : Coffee break

11h15 – 12h45 : **Session 8 Semiconductors1/2: Chairman : A. Semerok**

11h15 – 11h45: **J.B. Sirven:** “Laser-induced breakdown spectroscopy on Mars with the ChemCam instrument for in situ remote analysis of Martian rocks and soils”

11h45 – 12h15 : **T. Derrien:** “Formation mechanisms of femtosecond laser-induced periodic surface structures on silicon”

12h15 – 12h45 : **V.P. Lipp:** “Atomistic-continuum modeling of short pulse laser melting of semiconductors”

12h45 – 14h00 : Lunch : Salle Detoef

14h00 – 15h30 : **Session 9 Semiconductors2/2; Chairman: T. Itina**

14h00 – 14h30 : **L. Gemini:** “Periodic structures self-formed on the surface of Si by femtosecond laser pulses”.

14h30 – 15h00 : **G. Tsibidis:** “A systematic methodology to investigate ripple formation dynamics on silicon surfaces after irradiation with ultrashort laser pulses in submelting or subablation conditions”

15h00 – 15h30 : **S. Leyder:** “Focused femtosecond laser interactions with bulk dielectrics and semiconductors in the wavelength range 1300-2200 nm”

15h30 – 16h00 Coffee break

16h00 - 17h30 **Session 10 Laser Machining; Chairman : S. Guizard**

16h15 - 16h45 : **I. Mikulskas:** “« Tunable femtosecond laser sources for micromachining, spectroscopy and other applications”

16h45 - 17h15 : **A. Mathis:** “Edge profiling with accelerating curved femtosecond beams”.

17h15 - 17h45: **M. Faucon:** “Comparaison study of sub microstructure generation on metals between femtosecond Ti :Sa laser and Yb doped laser””

17h45 – 17h 50: **\*\*\*Concluding remarks and cloture of the conference\*\*\***