

*Monday, September 16*

*Salon B & Salon C*

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*Salon B*

Chair: **Ahmet Öztarhan**

08:00 - 08:02	Ahmet Öztarhan	Opening Talk and Welcome
08:02 - 08:10	Rector / Rektör	Opening Talk and Welcome
08:10 - 08:20	Graham Hubler	Opening Talk and Welcome

*Salon B*

08:30 - 09:30	Andre Geim	Graphene and Beyond	Distinguished Speaker
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*Salon B*

*BioScience & Medical Applications*

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Chairs: **Daryush ILA & Marcela Bilek**

09:30 - 10:00	<b>INV.B1</b>	<u>Yaman Tokat (MD)</u>	Importance of Biliary Stents in Living Donor Liver Transplantation
10:00 - 10:30	<b>INV.B2</b>	<u>Hiroshi Ujiie (MD)</u>	2mm caliber artificial vessel produced by ion beam implanting technology
10:30 - 11:00	<b>INV.B3</b>	<u>Ryosuke Ikeguchi (MD)</u>	Peripheral nerve regeneration through a silicone chamber implanted with negative carbon ions - possibility to clinical application

11:00 - 11:30 **COFFEE BREAK**

11:30 - 12:00	<b>INV.B4</b>	<u>Paul K Chu</u>	Functionalization of Surfaces of Advanced Materials Using Plasma and Related Technologies
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12:00 - 12:30	<b>INV.B5</b>	<u>Iñigo Braceras</u>	Ion Implantation and plasma based processes on Medical Devices
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12:30 - 14:00 **LUNCH BREAK**

Chairs: **Jeroen Van Kan & John Baglin**

14:00 - 14:30	<b>INV.B6</b>	<u>Marcela Bilek</u>	Bioactivation of Surfaces by Energetic Ion Implantation
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14:30 - 15:00	<b>INV.B7</b>	<u>Giovanni Marletta</u>	Ion Beams for Smart Bioactive Interfaces
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15:00 - 15:30 **COFFEE BREAK**

- 15:30 - 16:00 **INV.B8**      Hiroshi Tsuji  
Adhesion Patterning of Mesenchymal Stem Cells on Polymer Surface by Negative-Ion Beam Irradiation and Fabrication of Cell Strings
- 16:00 - 16:20 **OR.B1**      Emel Sokullu  
Embryonic Stem Cell (ESC) Differentiation Pathway on Ion Implanted Surfaces
- 16:20 - 16:40 **OR.B2**      Toshiyuki Tanaka  
Spatial control of cell attachment, proliferation, and differentiation using ion-beam-inducing thin films
- 16:40 - 17:10 **INV.B9**      Nader Kalkhoran  
Ion Beam Processes for Surface Engineering of Medical and Industrial Devices
- 17:10 - 17:40 **INV.B10**      Humberto Garcia Arellano  
Nuclear-track based biosensors with the enzyme laccase

**17:40 - 19:20 PANEL DISCUSSION      “ Panel Discussion on Health ”**

19:30 - 21:30 DINNER

21:30 - 23:00 POSTERS

*Salon C*

*Ion Implantation*

**Chairs: Orhan Ozturk & Roger Webb**

- 09:30 - 10:00 **INV.C1**      Efim Oks  
Treatment of non conducting ceramics by ion and electron beams
- 10:00 - 10:20 **OR.C1**      Deep Shikha  
Study of Ion Beam modified alumina for hard tissue implants
- 10:20 - 10:40 **OR.C2**      Naotake Sakumoto  
Effects of Thermal Ion Implantation on residual damage in silicon crystal
- 10:40 - 11:00 **OR.C3**      Sadık Güner  
The structural and magnetic properties of Co<sup>+</sup> implanted ZnO films
- 11:00 - 11:30 **COFFEE BREAK**
- 11:30 - 11:50 **OR.C4**      Hongfei Shang  
Mechanical properties and thermal stability of TiAlN/Ta multilayer film deposited by ion beam assisted deposition
- 11:50 - 12:10 **OR.C5**      Duangkhae Bootkul  
Amelioration of rubies by ion beam techniques
- 12:10 - 12:30 **OR.C6**      Stephan Mändl  
Observation of decay of expanded austenite in CoCr alloys after nitriding
- 12:30 - 14:00 **LUNCH BREAK**

Chairs: Wolfgang Ensinger & Christen Straede

- 14:00 - 14:30 **INV.C2**      Hans Hofsässd  
Simulation of ion beam sputtering with SDTrimSP, SRIM and TRIDYN
- 14:30 - 15:00 **INV.C3**      Alain Claverie  
Understanding the Smart Cut process: Evolution of defects during annealing of H<sup>+</sup> implanted silicon
- 15:00 - 15:30 **COFFEE BREAK**
- 15:30 - 16:00 **INV.C4**      Luc Pichon  
PBII and Plasma-assisted nitriding of Co and Ni-based superalloys : diffusion process and micro-structural modifications
- 16:00 - 16:20 **OR.C7**      Alexander I. Ryabchikov  
Physical mechanisms of macroparticles density decreasing on a substrate surface immersed in a vacuum arc plasma at negative high-frequency short-pulsed biasing
- 16:20 - 16:40 **OR.C8**      R. M. Oliveira  
Phase formation and mechanical/tribological modification induced by nitrogen high temperature plasma based ion implantation into molybdenum
- 16:40 - 17:00 **OR.C9**      Mehmet Fidan  
Hard, magnetic layers on stainless steel and CoCr alloys by nitrogen plasma immersion ion implantation

**17:40 - 19:20 PANEL DISCUSSION      “ Panel Discussion on Health ”**

19:30 - 21:30 DINNER

21:30 - 23:00 POSTERS

Salon B

Chairs: John Baglin & Giovanni Marletta

08:30 - 09:10 **Plenary Talk** Robert Zimmerman and Daryush ILA  
Review of Ion Beam Processing of Biomaterial Polymers

Salon B

Applications

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Chairs: Wei-Kan Chu & Paul K. Chu

- 09:20 - 09:50 **INV.B1** Ronghua Wei  
Plasma Surface Engineering Research at SwRI For Industrial Applications
- 09:50 - 10:20 **INV.B2** Christen A. Straede  
Commercial Ion Implantation of tools – a successful niche technology in advanced surface treatment
- 10:20 - 10:40 **OR.B1** Simon Thibault  
Corrosion and wear mechanisms of aluminum alloy surfaces reinforced by multicharged nitrogen implantation
- 10:40 - 11:00 **OR.B2** Dushyant C. Kothari  
Study of radiation induced modifications in Ferritic-Martensitic steel T-91 at high doses
- 11:00 - 11:30 **COFFEE BREAK**
- 11:30 - 11:50 **OR.B3** Ahmet Oztarhan  
Applications of Plasma Based Surface Modification of Materials
- 11:50 - 12:10 **OR.B4** Emel Sokullu  
Fibroblastocyte (3T3) Cell Patterning with Plasma Lithography on Polymeric Substrates
- 12:10 - 12:30 **OR.B5** Andrey Solovyev  
Application of PVD methods to solid oxide fuel cells
- 12:30 - 14:00 **LUNCH BREAK**

Salon B

Innovative Technologies

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Chairs: Floyd Del McDaniel & Aymr Sherif El-Said

- 14:00 - 14:30 **INV.B3** Daryush ILA  
Thermoelectric Systems: Ion Beam Enhanced Thermoelectric Properties
- 14:30 - 14:50 **OR.B6** Saweat Intarasiri  
Analysis and modification of blue sapphires from Rwanda by ion beam techniques
- 15:00 - 15:30 **COFFEE BREAK**

15:30 - 15:50 **OR.B7** Duangkhae Bootkul  
Titanium doped diamond-like carbon thin film on stainless steels by FCVA technique for tribological applications

15:50 - 16:10 **OR.B8** Javier Osés  
Antibacterial PVD coatings doped with silver by Ion Implantation

16:10 - 17:30 POSTERS

**17:40 - 19:20 PANEL DISCUSSION “ Panel Discussion on Applications ”**

19:30 - 21:30 DINNER

21:30 - 23:00 POSTERS

*Salon C*

*Ripples, Nano-Fabrication*

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**Chairs: Flyura Djurabekova & Tapibrata Som**

09:10 - 09:40 **INV.C1** Michael Aziz  
Nanoscale morphology evolution under ion irradiation

09:40 - 10:00 **OR.C1** Henry Holland-Moritz  
Enhanced Sputtering Effects for Ion Irradiated Au Nanoparticles

10:00 - 10:20 **OR.C2** Mohit Kumar  
Topographical evolution on low-energy ion-irradiated SiO<sub>2</sub> surfaces

10:20 - 10:40 **OR.C3** Roman Böttger  
Surface Patterning of Ge and Si with Heavy Ions

10:40 - 11:00 **OR.C4** Maria Cecilia Salvadori  
Surface modification by metal ion implantation forming metallic nanoparticles in insulating matrix

11:00 - 11:30 **COFFEE BREAK**

11:30 - 12:00 **INV.C2** Jörg KN-Lindner  
Ion Interactions with Nanopatterned Surfaces

12:00 - 12:20 **OR.C5** Stefan Facsko  
Nanostructuring Ge Surfaces by Ion Irradiation

12:30 - 14:00 **LUNCH BREAK**

**Chairs: Paul Alkemade & Naoki Kishimoto**

14:00 - 14:30 **INV.C3** Kai Nordlund  
Atomistic simulations of ion beam-induced formation of surface nanostructures

14:30 - 15:00 **INV.C4**      Karl-Heinz Heinig  
Nanomelt-Induced Surface Patterning by Polyatomic Ions

15:00 - 15:30 **COFFEE BREAK**

15:30 - 16:00 **INV.C5**      Tapobrata Som  
Ion-beam Induced Self-organized Pattern Formation on Semiconductor Surfaces and their Applications

16:00 - 16:20 **OR.C6**      Lothar Bischoff  
Pattern Formation by Focused Polyatomic Ion Beam Irradiation of GaAs

16:20 - 16:40 **OR.C7**      Om Prakash Sinha  
Angle and Fluence dependent nanopatterning of GaAs surfaces by 1.5 MeV Au-ions

16:40 - 17:10 **INV.C6**      Joseph Klingfus  
Nanofabrication of Graphene on SiC by Multi-Ion Beam Lithography

17:10 - 17:40 **INV.C7**      Jeroen A van Kan  
Mold fabrication via proton beam writing for nanofluidic lab on chip applications

16:10 - 17:30 POSTERS

**17:40 - 19:20 PANEL DISCUSSION      “ Panel Discussion on Applications ”**

19:30 - 21:30 DINNER

21:30 - 23:00 POSTERS

Salon B

Chair: Nader Kalkhoran

08:30 - 09:10 **Plenary Talk** Greg Norton  
Trends and Applications for MeV Electrostatic Ion Beam Accelerators

Salon B

Facilities and New Approaches

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Chairs: Hans Hofsaess & Joseph Klingfus

09:10 - 09:50 **INV.B1** Daryush ILA  
Ion Beam Facility for Research Service and Education

09:50 - 10:20 **INV.B2** Isao Yamada  
Historical milestones and future prospects of cluster ion beam technology

10:20 - 10:40 **OR.B1** Noriaki Toyoda  
Low-damage and high-rate sputtering of organic materials with GCIB under H<sub>2</sub>O vapor environment

10:40 - 11:00 **OR.B2** Saweat Intarasiri  
Development of compact ion implanter for gemstones applications

11:00 - 11:30 **COFFEE BREAK**

11:30 - 12:00 **INV.B3** Paul F.A. Alkemade  
Focused helium ion beam materials processing at the nanometer scale

12:00 - 12:20 **OR.B3** Friedrich Aumayr  
Fabrication of nanopores in 1 nm thick carbon nanomembranes with slow highly charged ions

12:30 - 14:00 **LUNCH BREAK**

Chairs: Isao Yamada & Dushyant Kothari

14:00 - 14:30 **INV.B4** Roger Webb  
Ambient Pressure Molecular Concentration Mapping Using Simultaneous MeV-SIMS and PIXE

14:30 - 15:00 **INV.B5** Alexey Goncharov  
Next generation plasma tools for material surface modification by electron and ion beams

15:00 - 15:30 **COFFEE BREAK**

15:30 - 15:50 **OR.B4** Tomohiro Kobayashi  
Platinum nanoparticles deposition by proton irradiation in liquid

- 15:50 - 16:20 **INV.B6**      Ayman Sherif El-Said  
Surface Modifications of BaF<sub>2</sub> and CaF<sub>2</sub> single crystals by slow highly charged ions
- 16:20 - 16:40 **OR.B5**      Buddhi Tilakaratne/W.K.Chu  
Gas Cluster Ion Beam Induced Nano Structured Surfaces in Bio-Medical Applications
- 16:40 - 17:00 **OR.B6**      Xiubo Tian  
Controllable discharge and Nano-layer Connecting of Films and Substrates by a novel HPPMS-PIID Method
- 19:00 - 22:30 **GALA DINNER**

*Salon C*

*Wood and Organic Materials*

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**Chairs: Emel Sokullu Urkac & Hüseyin Sivrikaya**

- 09:30 - 10:00 **INV.C1**      Wolfgang Viöl  
Possibilities of Cold Plasma Treatment at Atmospheric Pressure to modify Wood Surfaces and Relevant Applications
- 10:00 - 10:20 **OR.C1**      Lena Wallenhorst  
Protective Coatings on Wood by Plasma Polymerization of Ethylene
- 10:20 - 10:40 **OR.C2**      Stefanie Wieland  
Modified wood surface properties by electron beam irradiation
- 10:40 - 11:00 **OR.C3**      Jean Strautmann  
Outdoor weathering as a step in an efficient wood surface protection process
- 11:00 - 11:30 **COFFEE BREAK**
- 11:30 - 11:50 **OR.C4**      Gianluca Tondi  
Hydrophobic tannin-based foams
- 11:50 - 12:10 **OR.C5**      Ali Kılıç  
Measuring Electrostatic Properties of Fibrous Materials: A Review and a Modified Surface Potential Decay Technique
- 12:10 - 12:30 **OR.C6**      V.K. Rangari  
Study the effect of ion beam radiation on diamond coated CNTs infused Nylon-6 polymer composites
- 12:30 - 14:00 **LUNCH BREAK**
- Chairs: Humberto Garcia Arellano & Robert Zimmerman**
- 14:00 - 14:30 **INV.C2**      Zengliang Yu  
Application of Ion Beam Biotechnology in Restoration of Ecosystem



- 14:30 - 14:50 **OR.C9**      Nand Lal Singh  
Modification of optical, structural and dielectric properties of MeV ions irradiated PS/Cu nanocomposites
- 14:50 - 15:00 **OR.C8**      Laszlo Tolvaj  
Applying UV lasers for better understanding the photodegradation of wood
- 15:00 - 15:30 **COFFEE BREAK**
- 15:30 - 15:50 **OR.C10**      Duangkhae Bootkul  
Adhesion property improvement of double-layer DLC film with nitrogen doping on Si wafer using FCVA technique
- 19:00 - 22:30 **GALA DINNER**

*Thursday, September 19*

*Salon B & Salon C*

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*Salon B*

Chair: Karl-Heinz Heinig

08:30 - 09:10 **Plenary Talk** John Baglin  
Nanoscale Patterning and Lithography using Ion Beams

*Salon B*

*Nano Applications & Fabrication*

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Chairs: Maria Cecilia Salvadori & Kai Nordlund

09:10 - 09:30 **OR.B1** Wolfgang Ensinger  
Parallel and crossed high energy heavy ion beams for the fabrication of nanowire arrays and nanonetwork templates for applications in electrocatalysis

09:30 - 09:50 **OR.B2** Dongqing Cai  
Fabrication of nanonetworks from nanorods by ion beam

09:50 - 10:10 **OR.B3** Masafumi Taniwaki  
Formation and application of two-dimensional nanocell lattice

10:10 - 10:30 **OR.B4** Debi Prasad Datta  
Evolution of porous network in GaSb under medium energy Ar<sup>+</sup> -ion bombardment

10:30 - 11:00 **INV.B1** Flyura Djurabekova  
Molecular Dynamics Simulations of Sputtering of a Surface under an Electric Field

11:00 - 11:30 **COFFEE BREAK**

11:30 - 12:00 **INV.B2** Naoki Kishimoto  
Ion Beam-based Fabrication of Nanoparticles in Insulators for Plasmonic Applications

12:00 - 12:30 **INV.B3** Seong Soo Choi  
Fabrication of Plasmonic Nanopore on Pyramid

12:30 - 19:30 **LUNCH AND OUTING**

19:30 - 21:30 **DINNER**

*Salon C*

*Nano Applications & Fabrication*

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Chairs: Joerg Lindner & Efim Oks

09:10 - 09:40 **INV.C1** Del McDaniel  
Investigation of structural and optical properties of nanosystems in Si-based materials

09:40 - 10:00 **OR.C1** Qingfen Guan  
Microstructure of Silicon induced by High Current Pulsed Electron Beam Irradiation

- 10:00 - 10:20 **OR.C2**        Om Prakash Sinha  
Aligned GaAs nanostructures: A Temperature and Fluence dependent studies
- 10:20 - 10:40 **OR.C3**        Gennady Remnev  
Formation of nanoscale carbon structures in the surface layer of metals under the impact of high power ion beam
- 10:40 - 11:00 **OR.C4**        ChienHsu Chen  
Structure and Magnetic Properties of GaMnAs Prepared by Ion Beam Induced Epitaxial Crystallization Annealing
- 11:00 - 11:30 **COFFEE BREAK**
- 11:30 - 11:50 **OR.C5**        Alma Dauletbekova  
Nanostructural Modification of LiF Crystals Induced by Fast Ions
- 11:50 - 12:10 **OR.C6**        Liutauras Marcinauskas  
Modification of amorphous carbon films by picosecond laser pulses
- 12:30 - 19:30 **LUNCH AND OUTING**
- 19:30 - 21:30 **DINNER**

*Friday, September 19*

*Salon B*

**Chairs: Luc Pichon & Alain Claverie**

- 09:00 - 09:20 **OR.B1**        Nand Lal Singh  
Swift heavy ions irradiation effects on magnetic, dielectric, structural and thermal properties of Polystyrene (PS)/ Nickel nanocomposites
- 09:20 - 09:40 **OR.B2**        Manoj Kumar Jaiswal  
Studies of Swift Heavy Ion induced modification in Fe doped SnO<sub>2</sub> Thin Films
- 09:40 - 10:00 **OR.B3**        Serap Celen  
Pulsed Laser-Induced Lotus Leafs From the Viewpoint of “Coalescence of Sensors Hypothesis
- 10:30 - 11:00 **COFFEE BREAK**
- 11:00 - 11:30 **CLOSING REMARKS**
- 11:30 - 13:00 **LUNCH**