

Sunday, 17 November 2019

17:00 - Registration

18:00 Mixer (- 21:00)

Monday, 18 November 2019

09:00 **Opening** (Multipurpose Hall)

Chair: J. Matsuo

09:10 18-PL-1 **Leonard C. Feldman**, *Rutgers University, USA* (Plenary)
Nano-Scale Materials Modification and Materials Analysis

09:55 18-I-1 **Rainer D. Beck**, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*
(Invited)
Quantum State-Resolved Studies of Methane/Surface Scattering by
Vibrational Spectroscopies

10:25 **Coffee Break** (Small Hall)

Chair: L. Breuer

10:45 18-I-2 **Norito Ishikawa**, *Japan Atomic Energy Agency, Japan* (Invited)
Nanohillocks Created in Ceramics Irradiated with Swift Heavy Ions

11:15 18-I-3 **Ricardo M. Papaléo**, *Pontifical Catholic University of Rio Grande do Sul, Brazil* (Invited)
Fast Ion Bombardment of Ultrathin Polymer Films: Damage Efficiency
under Spatial Confinement

11:45 18-O-1 **Kaoru Nakajima**, *Kyoto University, Japan*
Sputtering of Biomolecular Thin Films Irradiated with MeV C₆₀ Ions

12:05 18-O-2 **Mikolaj Gołuński**, *Jagiellonian University, Poland*
Molecular Dynamics of Organic Monolayer on Free-Standing Graphene
Bombarded with keV C₆₀ Clusters in Transmission Direction

12:25 **Lunch** (Small Hall)

Chair: R. Wilhelm

13:45 18-PL-2 **Yutaka Kamada**, *National Institutes for Quantum and Radiological Science and Technology, Japan* (Plenary)
Construction Status and Research Regimes of Large Superconducting
Tokamak JT-60SA for Fusion Energy Development

14:30 18-O-3 **Andreas Kirschner**, *Forschungszentrum Jülich GmbH, Germany*
Erosion Data Needs and Application for Plasma-Wall-Interaction

Modelling in Fusion Research

- 14:50 18-O-4 Friedrich Aumayr, TU Wien, Austria**
Erosion of Realistic Fusion Relevant Materials? Influence of Surface Roughness and Morphology on the Sputtering Yield
- 15:10 Coffee Break** (Small Hall)
- Chair: F. Aumyar**
- 15:35 18-I-4 Daniel Primetzhofer, Uppsala University, Sweden (Invited)**
Electronic Stopping of keV Ions in Single-Crystalline Self-Supporting Targets
- 16:05 18-O-5 Janine Schwestka, TU Wien, Austria**
Low-Energy Electron Splash from Graphene Driven by Charge Exchange of Highly Charged Ions
- 16:25 18-O-6 Sascha Creutzburg, Helmholtz-Zentrum Dresden-Rossendorf, Germany**
Transmission of Highly Charged Xenon Ions Through a Monolayer of Molybdenum Disulfide
- 16:45 Coffee Break** (Small Hall)
- Chair: N. Ishikawa**
- 17:00 18-I-5 Feng Chen, Shandong University, China (Invited)**
Ion Beam Modification of 2D Materials for Photonic Applications
- 17:30 18-O-7 Wararu Kada, Gunma University, Japan**
Fluorescent Defect Formation in Single Crystalline Diamond by Focused Proton Irradiation
- 17:50 18-O-8 Chun-Shang Wong, Sandia National Laboratories, USA**
Characterization of W(111)+H Adsorption System using Multi-Angle Ion Scattering and Direct Recoil Maps
- 18:10 18-O-9 Ryu Murase, Kyoto University, Japan**
Incident Molecular Axis Dependence of Secondary Ion Emission from Phenylalanine Target by Fast C_2^+ Impacts

18:30 18-O-10 Kousuke Moritani, *University of Hyogo, Japan*

Collision Induced Protonation of 1,4-Didodecylbenzene by Energetic
Water Cluster Impact

(18:50 Dinner)

Tuesday, 19 November 2019

Chair: L. Feldman

09:00 19-PL-3 **Richard A. Wilhelm**, *TU Wien, Austria* (Plenary)

Ion Beam Spectroscopy with 2D Materials

09:45 19-O-1 **Barbara Bruckner**, *Uppsala University, Sweden*

On the Influence of Surface Oxygen on Energy Spectra Obtained with keV Ions

10:05 19-O-2 **Pedro Luis Grande**, *Universidade Federal do Rio Grande do Sul, Brazil*

The Time Dependent Potential (TD POT) Model for Charge-State Dependent Stopping of Slow Highly Charged Ions

10:25 **Coffee Break** (Small Hall)

Chair: K. Kimura

10:45 19-I-1 **William J. Weber**, *University of Tennessee, USA* (Invited)

Inelastic Interactions of Ions with Perovskites

11:15 19-O-3 **Shigeo Tomita**, *University of Tsukuba, Japan*

Characteristics of Kinetic Energy Sensitive Detection of keV Particles using Superconducting Tunnel Junction

11:35 19-O-4 **Svenja Lohmann**, *Uppsala University, Sweden*

Studying Ion-Solid Interactions with Pulsed Ion Beams in a 3D-Transmission Approach

11:55 **Group Photo**

12:05 **Lunch (Small Outing)**

Chair: J. Juaristi

15:15 19-I-2 **Ricardo Diez Muiño**, *Donostia International Physics Center, Spain* (Invited)

Electronic Friction in Dynamical Processes at Surfaces

15:45 19-O-5 **Peter Bauer**, *Johannes Kepler University, Austria*

Electronic Stopping: Limits of the Free Electron Gas Model

16:05 19-O-6 Lukas Deuchler, *Christian-Albrechts-Universität zu Kiel, Germany*
TDDFT Kohn-Sham Spectra During Resonant Neutralization of
Hyperthermal H⁺ Incident on Al(111)

16:25 19-O-7 Alex M. Imai, *Kyoto University, Japan*
Charge-State Evolution for C- and W-Ions Through C-Foil Penetration

16:45 Coffee Break (Small Hall)

Chair: S. Facsko

17:00 19-I-3 Lin Chen, *Lanzhou University, China* (Invited)
Charge Transfer of Low-energy Ions Scattering on LiF(100), HOPG and
Metal Surfaces

17:30 19-I-4 Toma Susi, *University of Vienna, Austria* (Invited)
Quantifying Transmission Electron Microscopy Irradiation Effects
using Two-Dimensional Materials

18:00 19-O-8 Joseba Iñaki Juaristi, *Donostia International Physics Center, Spain*
Ab Initio Molecular Dynamics Simulations of the Alignment Resolved O₂
Scattering from Highly Oriented Pyrolytic Graphite

18:20 19-O-9 Hisayoshi Yurimoto, *Hokkaido University, Japan*
Aberration-Corrected Focused Ion Beam for Time-of-Flight Secondary
Neutral Mass Spectrometry

(18:40 Dinner)

Wednesday, 20 November 2019

Chair: W. Weber

- 09:00 20-PL-4 **Yoshio Hishikawa**, *Medipolis Proton Therapy and Research Center, Japan* (Plenary)
Proton Therapy at a Resort: Medipolis Proton Therapy and Research Center
- 09:45 20-I-1 **Hidetsugu Tsuchida**, *Kyoto University, Japan* (Invited)
Fast Ion Interactions with Liquid Jet Targets under Vacuum using the Capillary Microbeam Method
- 10:15 20-O-1 **Markus Wilde**, *The University of Tokyo, Japan*
Simultaneous ^1H and ^2D Quantification in Surface Layers with ^{15}N Nuclear Reaction Analysis

10:35 **Coffee Break** (Small Hall)

Chair: C. Sosolik

- 10:55 20-I-3 **Akane Kitamura**, *Japan Atomic Energy Agency, Japan* (invited)
Fabrication of Microstructure on Fluoropolymers by Ion Beam Irradiation
- 11:25 20-O-9 **Michael Probst**, *University of Innsbruck, Austria*
DFT FUNCTIONALS FOR PLASMA-WALL INTERACTIONS:
A DATA-DRIVEN APPROACH FOR MOLECULES CONTAINING
BE, W AND H
- 11:45 20-O-2 **Denise Erb**, *Helmholtz-Zentrum Dresden-Rossendorf, Germany*
In-Situ GISAXS for Morphological Characterization of Ion-Induced Nanopatterning on the Crystalline Ge(001) Surface
- 12:05 20-O-3 **Hiroshi Amekura**, *National Institute for Materials Science, Japan*
Matrix-Material Dependence on the Elongation of Embedded Gold Nanoparticles Induced by 4 MeV C_{60} Ion Irradiation

12:25 **Lunch** (Small Hall)

Chair: K. Nakajima

- 13:45 20-I-4 **Lars Breuer**, *Universität Duisburg-Essen, Germany* (Invited)
Molecular Secondary Ion Mass Spectrometry by Laser Post-Ionization

14:15 20-O-4 Michal Kański, Jagiellonian University, Poland
Computer Simulations of Irganox 1010 Sputtered by Large Water Clusters

14:35 20-O-5 Eliezer Kolodney, Technion-Israel Institute of Technology, Israel
Emission of Velocity Correlated Clusters in Fullerene-Solid Single Collision and Diagnostics of the Impact Energized Subsurface Nanovolume

14:55 20-O-6 Yasuhito Gotoh, Kyoto University, Japan
Irradiation Effects of High Energy Proton Beam to Phenylalanine Thin Films

15:15 Coffee Break (Small Hall)

Chair: C. Linsmeier

15:35 20-I-5 Gregor Hlawacek, Helmholtz-Zentrum Dresden-Rossendorf, Germany
(Invited)
Focused Ion Beam Materials Modification with Noble Gas Ions

16:05 20-O-7 Paul S. Szabo, TU Wien, Austria
Solar Wind Sputtering of Planetary Mineral Analogues

16:25 20-O-8 Takuya Majima, Kyoto University, Japan
Secondary Ion Emission from Ethanol Droplet Surfaces by MeV-Energy Heavy Ion Impact

16:45 Coffee Break (Small Hall)

17:00 Poster Introduction Session

Chair: Peter Bauer

20-P1 Mitsuo Tosaki, Kyoto University, Japan
2-D Diffraction Patterns of Single-Crystal Si Wafer Isotropically Irradiated with Monochromatic X-Rays

20-P2 Mitsunori Kurahashi, National Institute for Materials Science, Japan
Alignment Resolved O₂ Chemisorption on Ag(110)

20-P3 Masahide Fujimoto, Tokyo Gakugei University, Japan
Quantification of Hydrogen in the Black TiO₂ by Nuclear Reaction Analysis

- 20-P4 Kohtaku Suzuki, *The Wakasa Wan Energy Research Center, Japan***
Hydrogen Analysis of Ceramics by using In-Air ERDA
- 20-P5 Alexander Breuers, *Universität Duisburg-Essen, Germany***
An Experimental Approach to Generate Ultra-Short Ion Pulses
- 20-P6 Yanran Liu, *Shandong University, China***
Enhancement of Out-of-Plane Charge Transport in a Vertically Stacked Two-Dimensional Heterostructure using Point Defects
- 20-P7 Yue Liu, *Shandong University, China***
Enhanced Raman Scattering of CuPc Films on Imperfect WSe₂ Monolayer Correlated to Exciton and Charge-Transfer Resonances
- 20-P8 Masahito Tagawa, *Kobe University, Japan***
Importance of Atom-Surface Scattering on the Design Criteria of Future Air Breathing Ion Engine
- 20-P9 Keisuke Yasuda, *Kyoto Prefectural University, Japan***
Evaluation of Sensitivity for Oxygen by TOF-ERDA
- 20-P10 Yuka Hikima, *Toho University, Japan***
Fine Structure Evaluation by Pattern Recognition for Ion Microbeam Extracted from Tapered Glass Capillary Optics
- 20-P11 Pawel Kucharczyk, *Universität Duisburg-Essen, Germany***
Generation of Ultrashort Ion Pulses in the keV Range: Numerical Simulations
- 20-P12 Kenji Umezawa, *Osaka Prefecture University, Japan***
Surface Atomic Structure using Low Energy Atom Scattering Spectroscopy: BaF₂(111)
- 20-P13 Taku T. Suzuki, *National Institute for Materials Science, Japan***
Pulsed Jet Technique for Surface Analysis of a Gas Sensor at Near-Atmospheric Pressure
- 20-P14 Kei Mitsuhashi, *Ritsumeikan University, Japan***
Measurement of Scattering Spectrum for Medium Energy Ne⁺ Incidence in the Geometry of ERDA

- 20-P15 Yuuko Fukazawa, Osaka-Kyoiku University, Japan**
Dependence of Intensity Oscillations of Proton Beam Scattered from a KBr ESD-Surface on Energy and Current Density of External Electrons
- 20-P16 Yui Fukunaga, Nara Women's University, Japan**
Charge State Dependence of Incident Ions for Scattering Pattern by Graphene Sheet
- 20-P17 Yoshiki Murao, Kochi University of Technology, Japan**
Surface Morphology of Si Irradiated with C₆₀ Cluster Ion Beam
- 20-P18 Momoe Otsuka, Nara Women's University, Japan**
Comparison of Experimental and Simulated Rainbow Scattering Patterns of Silicon Ions by Graphene Sheet
- 20-P19 Hideyuki Ohashi, Tokyo University of Science, Japan**
Interaction Between H₂, O₂ Molecules and WO₃-Based Nanosheet and Application to H₂ Gas Sensor
- 20-P20 Minoru Nakamura, Tokyo University of Science, Japan**
Surface Modification of ZnO by Ion Implantation of Bi, Eu, and Sn Followed by Annealing for Enhancing Gas Sensing Properties
- 20-P21 Tomoaki Nishimura, Hosei University, Japan**
Effect of Mg Ion Implantation to GaN Substrate under Channeling Condition
- 20-P22 Barbara Bruckner, Uppsala University, Sweden**
Electronic Stopping of Light keV Ions in Au and W Foils - Transmission vs. Backscattering
- 20-P23 Toshiaki Kaneko, Okayama University of Science, Japan**
Electron Excitation Processes in Collision of MeV/atom Carbon Cluster Ions with Rare Gases
- 20-P24 Hiroshi Amekura, National Institute for Materials Science, Japan**
Is a Non-Amorphizable Crystal Better for Optical Applications than an Amorphizable Crystal under Swift Heavy Ion Irradiation?

- 20-P25 Toshio Seki, *Kyoto University, Japan***
Ambient Secondary Ion Mass Analysis of Electrolyte of Lithium Ion Battery with MeV-Energy Heavy Ion
- 20-P26 Shin-ichiro Sato, *National Institutes for Quantum and Radiological Science and Technology, Japan***
Photoluminescence Properties of Implanted Praseodymium into Gallium Nitride at Elevated Temperature
- 20-P27 Atsushi Kinomura, *Kyoto University, Japan***
Characterization of Diamond-Like Carbon Films by Slow-Positron and MeV Ion Beams to Investigate the Origin of Water Wettability
- 20-P28 Taiki Matsuda, *Kyoto University, Japan***
Etching by Massive Cluster Ions from Electrospray Ion Source
- 20-P29 Masaki Tanaka, *National Institute of Technology, Ube College, Japan***
Oxidation of Potassium Adsorbed 4H-SiC(0001) Reconstructed Surface Studied by Metastable-Atom Induced Electron Spectroscopy
- 20-P30 Manabu Saito, *Kyoto University, Japan***
Observation of Recurrent Fluorescence from Excited Naphthalenen Ions
- 20-P31 Takuto Watanabe, *National Institute of Technology, Ube College, Japan***
Carbon Nanotube Growth on Fe Pre-Adsorbed 6H-SiC(000-1) Surface by Surface Decomposition Method
- 20-P32 Nobuyuki Nakamura, *University of Electro-Communications, Japan***
Interactions of Slow Highly Charged Bi⁹⁺ Ions with HOPG Surface
- 20-P33 Kumiko Yokota, *Kobe University, Japan***
Hyperthermal Collision-Induced Erosion of Spacecraft Polymeric Materials in Low Earth Orbit

18:00 Poster Session with Snacks & Beverages (Small Hall)

Thursday, 21 November 2019

Chair: L. Henning

09:00 21-PL-5 Stefan Facsko, *Helmholtz-Zentrum Dresden-Rossendorf, Germany*

(Plenary)

Emergence of Nanoscale Patterns under Ion Induced Non-Equilibrium Conditions

09:45 21-O-1 Ronnie Hoekstra, *University of Groningen, Netherlands*

The Absence of the Single-Scattering Peak in keV Interactions of Sn Ions on Transition Metals, Mo and Ru

10:05 21-O-2 Yu Lei, *Chinese Academy of Sciences, China*

K-Shell X-Ray Production in Silicon ($Z_2 = 14$) by ($1 \leq Z_1 \leq 53$) Slow Ions

10:25 Coffee Break (Small Hall)

Chair: D. Primetzhofer

10:45 21-I-1 Cristina Díaz, *Universidad Autónoma de Madrid, Spain* (Invited)

Quantum State-Resolved Studies of H₂ Diffraction from Ionic Surfaces under Fast Grazing Incidence Conditions

11:15 21-I-2 Hocine Khemliche, *Université Paris-Sud, France* (Invited)

Organization Dynamics at an Organic-Inorganic Interface Revealed in Real-Time by Grazing Incidence Fast Atom Diffraction

11:45 21-O-3 Stefan Krischok, *Technische Universität Ilmenau, Germany*

Reconstruction of Metastable Induced Electron Spectra of Molecules on Solid Surfaces

12:05 Outing

18:00 Conference Dinner at Yuushien

Friday, 22 November 2019

Chair: G. Andersson

- 09:00 22-PL-6 **John A. Kilner**, *Imperial College, UK* (Plenary)
The Surface of Complex Oxides; Ion Beam Based Analysis of Energy Materials
- 09:45 22-I-1 **Shigeo Matsuyama**, *Tohoku University, Japan* (Invited)
Development of 3D Imaging Systems using Ion Microbeam
- 10:15 22-O-1 **Satoshi Shigematsu**, *SUMCO Corporation, Japan*
Influence of Oxygen on Copper Gettering in Hydrocarbon Molecular Ion Implanted Region using Atom Probe Tomography
- 10:35 **Coffee Break**

Chair: R. Hoekstra

- 10:45 22-I-2 **Kazumasa Narumi**, *National Institutes for Quantum and Radiological Science and Technology, Japan* (Invited)
Development of a Highly-Intense Negative C₆₀ Ion Source for a Tandem Accelerator and Its Applications
- 11:15 22-O-2 **Patrick Roy Johnson**, *Clemson University, USA*
Low and Hyperthermal Energy Ion Scattering from Stepped Surfaces
- 11:35 22-O-3 **Bun Tsuchiya**, *Meijo University, Japan*
Dynamic Behavior of Lithium Ions in All-Solid-State Batteries with Charging and Discharging using Ion Beam Analysis
- 11:55 22-O-4 **Hans Rudolf Koslowski**, *Forschungszentrum Jülich GmbH, Germany*
LEIS Study of Cr Segregation and Preferential Sputtering of WCrY
- 12:15 **Closing**
- 12:20 **Lunch** (Restaurant)