September 23rd (MON)

10:00 - 10:30	**Session 1 : Opening Session**

Session 2 : Plenary Session

10:30 - 11:10	PL1	**Japanese Equipment Manufacturers' Contribution to Ion Implantation for Semiconductor Device Fabrication** Nobuo Nagai (Nissin Ion Equipment Co., Ltd., Japan)
11:10 - 11:50	PL2	**Overview on Power Devices with Special Regard to Ion Implantation** Werner Schustereder (Infineon Technologies Austria AG, Austria)

12:00 - 13:00	**Luncheon Seminar -TPSCo**

Session 3 : Device Applications

13:30 - 14:00	INV1	**Reducing Transistor External Resistance (Invited)** Oleg Gluschenkov (IBM, USA)
14:00 - 14:30	INV2	**Nanosheets and CFETs Enabled by Epi Doping (Invited)** Chee-Wee Liu (National Taiwan University, Taiwan)
14:30 - 15:00	INV3	**Stress Engineering TCAD for Advanced Logic Architectures (Invited)** Geert Eneman (imec, Belgium)
15:00 - 15:20	O1	**Oxidation of Si/SiGe Fin Superlattices and Application to Bulk Acoustic** Kevin Jones (University of Florida, USA)
15:20 - 15:50		**Coffee Break**

Session 4 : Doping Equipments (1)

15:50 - 16:20	INV4	**Implant Application to Meet Advanced Power Device Requirement (Invited)** Wei Zou (David) (Applied Materials, USA)
16:20 - 16:40	O2	**IMPHEAT-II:In-situ XRD System, Enhancement of Implantation Angle Accuracy through Per-Wafer Measurement of Off-Axis Angle for Channeling Implantation** Yuya Hirai (Nissin Ion Equipment Co., Ltd., Japan)
16:40 - 17:00	O3	**Challenges in High Temperature Handling and Process of SiC Substrate and Key Innovations to Improve Performance and Enable Higher Yields and Transition to Larger Substrate Size** Pratim Palit (Applied Materials, USA)
17:00 - 17:20	O4	**A Sophisticated Model for the Space Charge Effect** Mitsuaki Kabasawa (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)
17:20 - 17:40	O5	**Radiation Characterization and Mitigation of High Energy H^+ Beams** Peter DeRosa (Axcelis Technologies, USA)
17:40 - 18:00	O6	**Integration of Thermal Pyrolytic Graphite (TPG®) into Heaters for Improved Thermal Uniformity** Wei Fan (Momentive Technologies, USA)

Poster Session

18:00 - 20:30

P1 **High-Energy Channeling Implantation in SiC Substrates with Precise Angle Control of SS-UHE**
Akichika Ono (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

P2 **Investigation of Modification Process of SiN_x Film by a Gas Cluster Ion Beam Irradiation**
Masaya Takeuchi (University of Hyogo, Japan)

P3 **Comparison of Arsenic and Antimony Dopant Distribution Profiles of Very High Energy Implantations**
Serguei Kondratenko (Axcelis Technologies, USA)

P4 **Tellurium Implanted Si for Infrared Optoelectronics**
Lars Rebohle (Helmholtz-Zentrum Dresden-Rossendorf & Helmholtz Innovation BlitzLab, Germany)

P5 **Process Methodology for Flash Yield Improvement with Customized Wafer Dose Patterning**
Sylvain Joblot (STMicroelectronics, France)

P6 **Off-Axis Electron Holography for the Probing of Doped Layers in Semiconductor Devices**
Samuel Grenadier (Tower Semiconductor, USA)

P7 **Characterization of Aluminum and Nitrogen Implants into Silicon Carbide Using Fourier Transform Infrared Spectroscopy**
Jeremy Turcaud (Coherent Corp., USA)

P8 **Energetic and Surface Metals Characterization of Purion XEmax with and without Boost™ Technology Using VPD ICP-MS**
Olivia Campbell (Axcelis Technologies, USA)

P9 **Process-Induced Stress Characterization in SiC MOSFETs by Raman Spectroscopy**
Tomoyuki Uchida (Toray Research Center Inc., Japan)

P10 **High Re-Activation and Precise Diffision Control of Epitaxial Si:P Layers Using Flash Lamp Annealing**
Yuma Ueno (SCREEN Semiconductor Solutions Co., Ltd., Japan)

P11 **Plasma Enhanced Annealing Process for Ion Implanted Dopant Activation**
Amitabh Jain (Microsol Technologies Inc., USA)

P12 **Au-Free Non-Alloy Ohmic Contact Formation on Si implanted n^+ GaN activated by UV Laser Annealing**
Lu Lu (SCREEN-Laser Systems & Solutions of Europe (LASSE), France)

P13 **Ion Doping System iG8 for Generation 8 Flat-Panel Display Industry**
Kazuki Kawase (Nissin Ion Equipment Co., Ltd., Japan)

P14 **Applied Materials VIISta™ Trident™ XE Ion Implanter**
Eric Hermanson (Applied Materials, USA)

P15 **Angle Control on Ribbon Beams on Applied Materials Trident™ Ion Implanters**
Antonella Cucchetti (Applied Materials, USA)

P16 **Observation of Angle Fluctuation Utilizing Plane Channel**
Takuya Sakaguchi (Sumitomo Heavy Industires Ion Technology Co., Ltd., Japan)

P17 **Dose Matching at High Tilt Angle by Off-Axis Implantation**
Sho Kawatsu (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

P18 **Adverse Effect of Energetic Dopant Cross-Contamination on Sheet Resistance**
Shoma Handa (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

Poster Session

18:00 - 20:30

P19 **Challenges of High Dose Ion Implantations in Photo-Resist Covered Wafers for Power Device Processing**
Matthias Schmeide (Infineon Technologies Dresden GmbH, Germany)

P20 **Horizontal Uniformity Improvements by Using Beam Corrected Profiles on the VIISta 900/3D**
Matthias Schmeide (Infineon Technologies Dresden GmbH, Germany)

P21 **Low Metals Ion Source**
Vladimir Romanov (Axcelis Technologies, USA)

P22 **Optimization of Ion Source Structure for Enhancing Beam Current of Multiply Charged Ions**
Kuwahara Daisuke (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

P23 **Dual Cathode Ion Source for Axcelis' High Energy Implanters**
Wilhelm Platow (Axcelis Technologies, USA)

P24 **Effect of Low Z Gas Mixing for Producing Multicharged Ions on an Electron Cyclotron Resonance Ion Source**
Yushi Fujimura (The University of Osaka, Japan)

P25 **Development of an Ion Implantation System for Isotopically Pure Ion Deposition**
Josh Bird (University of Surrey, England)

P26 **New Operation Method for Ion Source Parameters to Improve Single Ionization Efficiency**
Hiroaki Kai (Nissin Ion Equipment Co., Ltd., Japan)

P27 **Attempt to Generate Copper Ions Using the Vaporizer Method**
Ninomiya Shiro (Sumitomo Heavy Industries Ion Technology Co.,Ltd., Japan)

P28 **Production Experience Using Indium(I) Iodide as a Source Material for Vaporization Operation in a Medium Current Implanter**
Ronald Johnson (Microchip Technology Inc., USA)

P29 **Results of an Evaluation of Isotopically Enriched Boron Trifluoride ION-X® on a Medium Current Implanter**
Ronald Johnson (Microchip Technology Inc., USA)

P30 **Improving Beam Current and Performance in Boron Ion Implantation via Boron Trifluoride (BF_3) and Diboron Tetrafluoride (B_2F_4) Mixture**
Ying Tang (Entegris Inc., USA)

P31 **Assessment of Different Methods for Hydrogen Delivery to Improve Ion Implant Tool Productivity**
Joseph Despres (Entegris, USA)

P32 **Xe Sub-Atmospheric Pressure Storage and Delivery Cylinder System**
Paul T. Murphy (TAKACHIHO CHEMICAL INDUSTRIAL CO., LTD., Japan)

P33 **Space Charge Neutralization System for Low-Energy High-Current Implanter**
Taido Kurauchi (Nissin Ion Equipment Co., Ltd., Japan)

P34 **Effect of Gas Introduction for Beam Neutralization on Beam Transport for Different Ion Species**
Yusuke Kuwata (Nissin Ion Equipment Co., Ltd, Japan)

P35 **Measurement of Phase-Space Distributions with Varied Parameters of an Indirectly Heated Cathode Ion Source**
Yugo Saito (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

Poster Session

18:00 - 20:30

P36 **Development of Automatic Wafer Transfer Adapters for Thin and Small Diameter Wafers of SiC and GaN**
Yoshitake Kazuya (Sense Corporation, Japan)

P37 **Modification of the End Station of a Varian 350 D Implanter for Greater Flexibility**
Volker Haeublein (Fraunhofer IISB, Germany)

P38 **Wear-Resistant Surface Coatings for Long ESC Life and Stable Performance**
Robert Fryer (Axcelis Technologies, Inc., USA)

P39 **Wafer Cooling Optimization in Ion Implant Process through Advanced Electrostatic Chuck Design**
Jakub Rybczynski (Entegris, Inc., USA)

P40 **Polymeric Wafer Contact Surface Integrity and Uniformity of Electrostatic Chuck: Characterization and Potential Impact on Ion Implant Process**
Yuxuan Liu (Entegris, Inc., USA)

P41 **Self-Contained Predictive Diagnostic Sensors for Implanter Subsystems**
Scott Galica (Axcelis Technologies, USA)

September 24th (TUE)

Session 5 : Doping Technologies and Processes (1)

9:30 - 10:00

INV5 **Toward Eliminating SiC Bipolar Degradation by Stacking Fault Knockdown by High Energy Ion Implantation (SF-KHII) Method (Invited)**
Shunta Harada (Naogya University, Japan)

10:00 -10:20

O7 **Utilizing PLAD (Plasma Doping) for Next Generation Super-Junction Power Devices**
Vikram Bhosle (Applied Materials, USA)

10:20 - 10:50 **Coffee Break**

Session 6 : Doping Technologies and Processes (2)

10:50 - 11:20

INV6 **Advanced Processes and Applications of Thin Layer Transfer via Light Ions Implantation (Invited)**
Frédéric Mazen (CEA-Leti, France)

11:20 - 11:40

O8 **PMOS R_c Reduction Using B_2H_6 Plasma Doping Process and Advanced Anneals for Current and Next Gen DRAM Devices**
Vikram Bhosle (Applied Materials, USA)

11:40 - 12:00

O9 **Process Challenges of the STRASS Technique to Increase the Electron Mobility in Advanced FDSOI nMOSFETs**
Frederic Milesi (CEA-Leti & Université Grenoble Alpes, France)

12:00 - 12:20

O10 **Effects of Ar-Ion Implantation on Single and Dual-Gate PNBT SOI-FETs**
Ryotaro Ito (Kanazawa Institute of Technology, Japan)

12:30 - 13:30 **Luncheon Seminar - AMAT**

14:00 - **Excursion**

September 25th (WED)

Session 7 : Doping Technologies and Processes (3)

9:30 - 10:00	INV7	**New Challenges and Opportunities in WBG Materials with Ion Implantation and Annealing Co-optimization (Invited)** Fulvio Mazzamuto (Axcelis Technologies, Inc., USA)
10:00 - 10:20	O11	**Study of Excess Donor-Like Defects Introduced by Si-Ion Implantation and Subsequent Annealing in N-Type Homoepitaxial GaN Layers** Hiroko Iguchi (Toyota Central R&D Labs., Inc., Japan)
10:20 - 10:40	O12	**Mg Ion Implantation in GaN for Localized p-GaN Layer Fabrication and Advanced Characterization Methods for Defects and Activation Study** Frank Torregrosa (IBS, France)
10:40 - 11:10		**Coffee Break**

Session 8 : Doping Technologies and Processes (4)

11:10 - 11:40	INV8	**Creation of Multiple Nitrogen-Vacancy Spin Cubits in Diamond by Molecular Ion Implantation (Invited)** Takeshi Ohshima (QST Takasaki, Japan)
11:40 - 12:00	O13	**Noncontact and Nondestructive Measurements of Electrical Properties for Mg Ion-Implanted Layers on GaN Single Crystals Using THz Time-Domain Spectroscopic Ellipsometry** Dingding Wang (Ritsumeikan University, Japan)
12:00 - 12:20	O14	**Versatile Monitoring of Ion Implantation Processes in Si and SiC Wafers Using the PMR-C Technique** Laszlo Balogh (Semilab Co Ltd, Hungary)

12:30 - 13:30	**Special Luncheon Lecture - History of Semiconductor Devices and Their Future** Hiroshi Iwai (International College of Semiconductor Technology & National Yang Ming Chiao Tung University, Taiwan)

Session 9 : Annealing Technologies and Processes (1)

14:00 - 14:30	INV9	**Thermal Processing in Semiconductor Implant Annealing: A Historical and Technological Evolution (Invited)** Silke Hamm (Mattson Technology, Germany)
14:30 - 14:50	O15	**Pulsed Laser Annealing of Deposited Amorphous Carbon Films** Kevin Jones (University of Florida, USA)
14:50 - 15:10	O16	**Solid-Phase Epitaxial Regrowth of Si:P by Nanosecond Laser Annealing : A Novel Approach** Sebastien Kerdiles (Université Grenoble Alpes, France)
15:10 - 15:30	O17	**Recrystallization Kinetics of Fully Amorphized C_3H_5-Molecular-Ion-Implanted Silicon Substrate Surface** Kobayashi Koji (SUMCO CORPORATION & Okayama Prefectural University, Japan)
15:30 - 16:00		**Coffee Break**

Session 10 : Doping Equipments (2)

16:00 - 16:20 **O18** **Performance of an Aluminum Sputtering Source for High Current Doping in Power Devices**
Michael Ameen (Axcelis Technologies, USA)

16:20 - 16:40 **O19** **IMPHEAT-II A Novel Ion Source with Extended Lifetime and Wide Beam Current Dynamic Range for SiC Power Device Mass Production**
Yuta Iwanami (Nissin Ion Equipment Co, Ltd., Japan)

16:40 - 17:00 **O20** **Novel Vaporization Method for Gallium Ion Generation**
Ninomiya Shiro (Sumitomo Heavy Industries Ion Technology Co.,Ltd., Japan)

17:00 - 17:20 **O21** **High Current Metal Ion Source for Material Modification in the Semiconductor Manufacturing Processes**
Takeshi Matsumoto (Nissin Ion Equipment Co, Ltd., Japan)

17:20 - 17:40 **O22** **Plasma and Beam Modeling in Low-Temperature Plasma Ion Sources**
Seth Veitzer (TECH-X CORPORATION, USA)

17:40 - 18:00 **O23** **The Importance of Global Magnetic Topology in Ion Source Design**
Thomas Horsky (Plansee USA, USA)

September 26th (THUR)

Session 11 : Metrologies and Material Science

9:30 -9:50 **O24** **Using Plan-View Cathodoluminescence to Estimate Damage Depth in Ion-Implanted β-Ga_2O_3**
Ryuichi Sugie (Toray research center Inc., Japan)

9:50 - 10:10 **O25** **RBS-Based Channeling Proton Implantation in 4H-SiC: A Combined SIMS/DLTS Depth Profiling Study**
Orazio Samperi (University of Catania, Italy)

10:10 - 10:30 **O26** **Etching Monitoring of Advanced Forksheet Devices Using AKONIS SIMS Tool**
Makishi Ishikawa (CAMECA Japan, Japan)

10:30- 10:50 **O27** **Differential Hall Analysis of the Carrier Profile in Germanium Due to the Doping Effect of As-Implanted Boron**
Ruey Dar Chang (Chang Gung University, Taiwan)

10:50 - 11:20 **Coffee Break**

Session 12 : Doping Technologies and Processes (5)

11:20 - 11:50 **INV10** **Proximity Gettering Design of Silicon Wafers Using CH_2P Molecular Ion Implantation Technique for High-Sensitivity CMOS Image Sensors (Invited)**
Takeshi Kadono (SUMCO CORPORATION, Japan)

11:50 - 12:10 **O28** **Characterization of Low Energy Molecular Phosphorus Implant under Low Thermal Budget Anneal**
Tae Hoon Huh (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)

12:10 - 12:30 **O29** **Fe Gettering Behavior in Proximity Gettering Silicon Epitaxial Wafer Using SiH_x and C_2H_y Mixture Molecular Ion Implantation**
Ryo Hirose (SUMCO CORPORATION, Japan)

12:40 - 13:40	**Luncheon Seminar**

Session 13 : Annealing Technologies and Processes (2)

14:00 - 14:30	INV11	**Flash Lamp Annealing for Semiconductors and Related Materials (Invited)** Lars Rebohle (Helmholtz-Zentrum Dresden-Rossendorf & Helmholtz Innovation BlitzLab, Germany)
14:30 - 14:50	O30	**Understanding Nanostructures Formation on Si Surfaces at the Melting Threshold by Laser Annealing** Mathieu Opprecht (Université Grenoble Alpes & CEA-Leti, France)
14:50 - 15:10	O31	**Improving the Thermal Stability of Ni(GeSn) Alloys Using Pre-Amorphization by Implantation and Nanosecond Laser Annealing** Philippe Rodriguez (CEA-Leti, France)
15:10 - 15:30	O32	**Influence of Carbon Capping Material and Thickness during High Temperature Annealing on Surface, Defects and Dopant Profile in SiC** Jeremy Turcaud (COHERENT CORP, USA)
15:30 - 16:00		**Coffee Break**

Session 14 : Doping Equipments (3)

16:00 - 16:20	O33	**Validation of Three-Dimensional Simulation of Beam Transport Using Linear Accelerator Based on Measured Phase-Space Distributions** Yuma Hirai (Sumitomo Heavy Industries Ion Technology Co., Ltd., Japan)
16:20 - 16:40	O34	**Molecular Ion Beam Current Enhancement by Noble Gas Mixed Discharge** Naoki Miyamoto (Nissin Ion Equipment Co., Ltd., Japan)
16:40 - 17:00	O35	**A Two Wafer Experimental Design for Determining Angular Alignment of Linear Scan Batch Implanters** Jeremy Turcaud (COHERENT CORP, USA)
17:00 - 17:20	O36	**Machine Learning Based Beam Shape Controlling System on NISSIN Medium Current Ion Implanter** Shinya Takemura (Nissin Ion Equipment Co., Ltd., Japan)

17:30 - 18:30	**Session 15 : Closing Session**