

**ISPlasma2012 PROGRAM**  
**4th International Symposium on Advanced Plasma Science and its Applications for Nitrides and Nanomaterials**

MAR 4 (Sun)		MAR 5 (Mon)					
		(9:00-) Registration					
		Opening Chair: H. Masuda (Nagoya Inst. of Tech., Japan) <Room S>		(9:30-9:45) Opening <Guest Address> N. Kimura (Director for Regional R&D Promotion, Ministry of Education, Culture, Sports, Science and Technology, Japan) <Organizer Address> S. Kato (Tokai Region Knowledge Cluster Headquarters, Aichi Science & Technology Foundation, Japan) <ISPlasma2012 Organizing Committee Chair Address> M. Hori (Nagoya Univ., Japan)			
				(9:45-9:55) Opening Talk Y. Ohtsuka (Tokai Region Knowledge Cluster Headquarters, Aichi Science & Technology Foundation, Japan)			
				(9:55-10:25) Knowledge Cluster Lecture 5a-S01C Masaru Hori (Nagoya Univ., Japan)			
		(10:25-10:40) Break					
		Plenary/Keynote Lecture Chair: H. Amano (Nagoya Univ., Japan) <Room S>		(10:40-11:20) Plenary Lecture 5a-S02PL Atsuo Iiyoshi (Chubu Univ., Japan) "How to Bring the Power of the Sun down to the Earth ~Fusion Plasma and Solar Energy Research~"			
				(11:20-11:55) Keynote Lecture 5a-S03K Y. Nanishi (Ritsumeikan Univ., Japan/Seoul National Univ., Korea) "Importance of Advanced Plasma for Frontier Nitride Semiconductor Technologies"			
				(11:55-12:30) Keynote Lecture 5a-S04K P. Kamat (Univ. of Notre Dame, USA) "Light Energy Conversion with Nanostructure Assemblies"			
(12:30-) Registration		(12:30-13:15) Lunch					
Tutorial Plasma Science 1 Chair: M. Aramaki (Nagoya Univ., Japan) <Room B>		(13:00-13:45) A. Kono (Nagoya Univ., Japan) "Optical Diagnostics and Monitoring of Processing Plasmas"		(13:15-14:45) Poster Session 1			
Tutorial Plasma Science 2 Chair: M. Aramaki (Nagoya Univ., Japan) <Room B>		(13:45-14:30) U. Czarnetzki (Ruhr-Univ. Bochum, Germany) "Radio-Frequency Plasmas"		Plasma Science 1 Plasma Sources and Diagnostics I Chair: K. Nakamura (Chubu Univ., Japan) <Room A>		Nitride Semiconductors 1 Growth of Nitrides Chair: Y. Nanishi (Ritsumeikan Univ., Japan/Seoul National Univ., Korea) <Room B>	
		(14:30-14:40) Break		(14:45-15:15) Invited Lecture 5p-A011A R. P. Brinkmann (Ruhr-Univ. Bochum, Germany) "Active plasma resonance spectroscopy – electromagnetic vs. electrostatic concepts"		(14:45-15:15) Invited Lecture 5p-B011B T. Hashimoto (Sixpoint Materials, Inc., USA) "Improved crystal quality of bulk GaN grown by the ammonothermal method"	
				(15:15-15:35) 5p-A020A Y. Liang (Chubu Univ., Japan) "Curling probe monitoring of wall condition in plasma processing"		(15:15-15:35) 5p-B020B N. Okada (Yamaguchi Univ., Japan) "Optical properties of multiple quantum wells on GaN layers composed of (10-11) and m-facets structure"	
Tutorial Nitride Semiconductors 1 Chair: H. Amano (Nagoya Univ., Japan) <Room B>		(14:40-15:25) H. Amano (Nagoya Univ., Japan) "Nitride-Based Visible LEDs"		(15:35-15:55) 5p-A030A I. Ganachev (Shibaura Mechatronics Corp., Japan) "Power dependence of electron density profiles in surface-wave plasma studied by self-consistent numerical simulation with local plasma kinetics"		(15:35-15:55) 5p-B030B S. Park (Seoul National Univ., Korea) "Effects of high temperature GaN nucleation layers grown with different carrier gases on a-plane GaN by metal organic chemical vapor deposition"	
Tutorial Nitride Semiconductors 2 Chair: H. Amano (Nagoya Univ., Japan) <Room B>		(15:25-16:10) A. Khan (Univ. of South Carolina, USA) "III-Nitride Technology, its requirements and commercialization"		(15:55-16:15) 5p-A040A A. Fukushima (Nagoya Univ., Japan) "Relationship between silicon thin film property and flux ratio of H radical to silicon growth precursor in SiH <sub>4</sub> /H <sub>2</sub> plasma CVD"		(15:55-16:15) 5p-B040B Y. Ryu (Kyushu Univ., Japan) "Relationship between etch pits and threading dislocations in AlN grown on a sapphire substrate"	
(16:10-16:20) Break		(16:15-16:35) Break		(16:15-16:35) Break		(16:15-16:35) Break	
Tutorial Nanomaterials 1 Chair: M. Hiramatsu (Meijo Univ., Japan) <Room B>		(16:20-17:05) J. G. Han (Sungkyunkwan Univ., Korea) "Fundamental and advanced plasma processes for thin film design and synthesis"		(16:35-17:05) Invited Lecture 5p-A051A Vinu L. Venkatraman (EPFL, Switzerland) "Chip-scale rubidium dielectric barrier discharge lamp for miniature atomic clocks and magnetometers"		Nitride Semiconductors 2 Optical Device and Characterization Chair: T. Hashimoto (SixPoint Materials, Inc., USA) <Room B>	
Tutorial Nanomaterials 2 Chair: M. Hiramatsu (Meijo Univ., Japan) <Room B>		(17:05-17:50) M. Hiramatsu (Meijo Univ., Japan) "Carbon Nanostructures: plasma synthesis and characterization"		(17:05-17:25) 5p-A060A F. Tochikubo (Tokyo Metropolitan Univ., Japan) "Electrolysis with atmospheric pressure glow discharge as a plasma electrode"		(16:55-17:15) 5p-B050B L. Lu (Nagoya Inst. of Tech., Japan) "Significant variation of Electroluminescence emission with different barriers of Al <sub>x</sub> Ga <sub>1-x</sub> N multiple-quantum-well in deep ultraviolet light-emitting diodes"	
				(17:25-17:45) 5p-A070A M. Blajan (Shizuoka Univ., Japan) "Diagnostics of microplasma spatial and temporal distribution by emission spectroscopy"		(17:15-17:35) 5p-B070B F. Fukuyo (Mie Univ., Japan) "Growth of AlGaIn MQWs as a Target for Deep-UV-Light Sources"	
(18:00-19:30) Welcome Party (Student Cafeteria III, Chubu University)							

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<b>MAR 6 (Tue)</b>				
(9:10-) Registration				
Plasma Science 3 Deposition and Modification of Thin Film Chair: M. Goeckner (Univ. of Texas at Dallas, USA) <Room A>	(9:30-10:00) Invited Lecture 6a-A011A A. Ito (National Inst. for Fusion Science, Japan) "Formation and Classification of Amorphous Carbon by Molecular Dynamics Simulation"  (10:00-10:20) 6a-A020A S. Chen (Nagoya Univ., Japan) "The role of hydrogen radical on plasma damaged gallium nitride"  (10:20-10:40) 6a-A030A C. Lin (National Dong Hwa Univ., Taiwan) "ZrO2 Resistive Switching Memory Fabricated on PES Flexible Substrate"	Nitride Semiconductors 3 Electron Device I Chair: K.Chen (The Hong Kong Univ. of Science and Tech., China) <Room B>	(9:30-10:05) Keynote Lecture 6a-B01KB T. Palacios (Massachusetts Inst. of Tech., USA) "GaN Transistors: Transforming Electronics from THz to KV"  (10:05-10:25) 6a-B020B T. Kubo (Nagoya Inst. of Tech., Japan) "Characterization of aluminum oxide deposited on GaN using ozone-based atomic layer deposition"  (10:25-10:45) 6a-B030B U. Honda (Aichi Inst. of Tech. Japan) "Comparison of deep levels in n-GaN grown by MOCVD on sapphire substrates with LT-AlN and GaN buffer layers"	Nanomaterials 3 Energy Generation/Storage Devices Chair: N. Zettsu (Nagoya Univ., Japan) <Room C>
(10:40-11:00) Break		(10:45-11:00) Break		(10:40-11:00) Break
Plasma Science 4 Etching Process Chair: A. Ito (National Inst. for Fusion Science, Japan) <Room A>	(11:00-11:30) Invited Lecture 6a-A041A R. Bruce (IBM T. J. Watson Research Center, USA) "Plasma-Polymer Interactions For Nanoscale Patterning Of Materials"  (11:30-12:00) Invited Lecture 6a-A051A M. Goeckner (Univ. of Texas at Dallas, USA) "Plasma chemistry and film growth in a complex organic system"  (12:00-12:20) 6a-A060A E. Kunnen (imec, Belgium) "Influence and evolution of 193i resist composition during VUV exposure"	Nitride Semiconductors 4 Device Processing Chair: M. Yamaguchi (Nagoya Univ., Japan) <Room B>	(11:00-11:30) Invited Lecture 6a-B041B K. Chen (The Hong Kong Univ. of Science and Tech., China) "Fluorine Plasma Ion Implantation: a GaN Normally-off HEMT Technology"  (11:30-11:50) 6a-B050B M. Niibe (Univ. of Hyogo, Japan) "Damage Analysis of n-GaN Crystals Etched with He and N2 Plasma"  (11:50-12:10) 6a-B060B K. Hagiwara (Aichi Inst. of Tech., Japan) "Carbon related local vibration mode in a (1-101)AlGaIn grown on a (111)Si substrate"	Nanomaterials 4 Surface Modification/ Surface Functionalization Chair: M. Shima (Gifu Univ., Japan) <Room C>
(11:00-11:30) Invited Lecture 6a-C041C P. Mayrhofer (Montanuniversitaet Leoben, Austria) "Computational Design and Experimental Study of Transition-Metal-Aluminum-Nitride Thin Films"		(11:30-11:50) 6a-C050C H. Tamagawa (Gifu Univ., Japan) "Bending controllability of Nafion-based IPMC coated with MnO2-coated CMC"		(11:50-12:10) 6a-C060C N. Zettsu (Nagoya Univ., Japan) "PS@Au Plasmonic Nanoshells with Conical Shape for Highly-sensitive NIR-light responsive LSPR-sensor"
(12:10-13:00) Lunch				
(13:00-14:30) Poster Session 2				
Industry-Academia-Government Collaboration 1 Research Hub Establishment toward Sustainable Development Chair: M. Takahashi (Chubu Univ., Japan) <Room S>	(14:30-14:55) Keynote Lecture 6p-S01KE T. Kojonen (VTT Technical Research Centre of Finland, Finland) "Instruments for creating an innovation hot spot"  (14:55-15:20) Keynote Lecture 6p-S02KE S. Ohmori (YRP International Alliance Inst., Japan) "R&D Promotions at Yokosuka Research Park"  (15:20-15:45) Keynote Lecture 6p-S03KE Y. Tai (Industrial Technology Research Institute, Taiwan) "How does ITRI do for Formation of Industrial-Academia-Government Collaboration A case of TAS (Taiwan Aerospace Supply chain Alliance) Formation"  (15:45-16:10) Keynote Lecture 6p-S04KE T. Degawa (TECHNO INTEGRATION Co. Ltd, Japan) "The trend of development and start up sites in the world and Japan —The issues, competitiveness and prospect of innovatio in the context of MOT—"  (16:10-16:35) Keynote Lecture 6p-S05KE W. Izumiya (Sangyo Times, Inc., Japan) "It should be driven forward to establish the domestic R&D Hubs —Tokai Region as a Potential Location—"			
(16:35-16:50) Break				
Industry-Academia-Government Collaboration 2 Research Hub Establishment toward Sustainable Development Chair: M. Takahashi (Chubu Univ., Japan) <Room S>	(16:50-18:20) Panel Discussion Establishment of Global Research Hub toward Sustainable Development =MODERATOR= N. Odake (Nagoya Inst. of Tech., Japan) =PANELIST= T. Degawa (TECHNO INTEGRATION Co. Ltd, Japan) W. Izumiya (Sangyo Times, Inc., Japan) T. Kojonen (VTT Technical Research Centre of Finland, Finland) S. Ohmori (YRP International Alliance Inst., Japan) Y. Tai (Industrial Technology Research Institute, Taiwan) M. Hori (Nagoya Univ., Japan)			
(18:30-20:00) Banquet (Student Cafeteria I, Chubu University)				

Simultaneous Interpretation  
 Registration fee: FREE

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<b>MAR 7 (Wed)</b>					
(9:10-) Registration					
Plasma Science 5 Emerging Plasma Technology I Chair: T. Kaneko (Tohoku Univ., Japan) <Room A>	(9:30-10:00) Invited Lecture 7a-A011A P. Favia (Univ. of Bari, Italy) "Plasma processing of Materials for Life Sciences"	Nitride Semiconductors 5 Nano Structure Chair: A. Wakahara (Toyohashi Univ. of Tech., Japan) <Room B>	(9:30-10:00) Invited Lecture 7a-B011B K. Kishino (Sophia Univ., Japan) "InGaN-based Nanocolumn Emitters"	Nanomaterials 5 Functional NanoMaterials Chair: E. Miura-Fujiwara (Univ. of Hyogo, Japan) <Room C>	
	(10:00-10:20) 7a-A020A M. Shiratani (Kyushu Univ., Japan) "A-Si:H Schottky Cells with Quite Low Light Induced Degradation Fabricated by Multi-hollow Discharge Plasma CVD"		(10:00-10:20) 7a-B020B J. Birch (Linköping Univ., Sweden) "Tailoring of AlInN Nanohelices by Controlled Curved-lattice Epitaxial Growth"		(10:00-10:20) 7a-C011C H. Yamaguchi Greenslet (Univ. of Florida, USA) "New Magnetic Abrasives: Development and Precision Applications"
	(10:20-10:40) 7a-A030A Y. Setsuhara (Osaka Univ., Japan) "ICP-Assisted Sputtering with Inner-Type Low-Inductance Antenna for Low-Damage Reactive Deposition of Functional Films"		(10:20-10:40) 7a-B030B P. Shields (Univ. of Bath, UK) "Fabrication and properties of etched GaN nanorods"		(10:20-10:40) 7a-C030C M. Shima (Gifu Univ., Japan) "CoPt Alloy Nanomagnets Crystallized on Carbon Microcoils"
(10:40-11:00) Break		(10:40-11:00) Break		(10:40-11:00) Break	
Plasma Science 6 Emerging Plasma Technology II Chair: P. Favia (Univ. of Bari, Italy) <Room A>	(11:00-11:30) Invited Lecture 7a-A041A T. Kaneko (Tohoku Univ., Japan) "Biomedical applications of DNA-nanocarbon conjugates synthesized by gas-liquid interfacial plasmas"	Nitride Semiconductors 6 Electron Device II Chair: T. Hashizume (Hokkaido Univ., Japan) <Room B>	(11:00-11:30) Invited Lecture 7a-B041B J. Suda (Kyoto Univ., Japan) "Group-III nitride/silicon carbide heterostructures -- MBE growth and device applications"	Nanomaterials 6 Nanoparticles/Nanowires/Nanorods Chair: K. Makiyama (Nagoya Univ., Japan) <Room C>	
	(11:30-11:50) 7a-A050A H. Hashizume (Meijo Univ., Japan) "Effect of atomic oxygen on inactivation of spores of P. digitatum by low-temperature atmospheric-pressure plasma"		(11:30-11:50) 7a-B050B J. Jesudass (Nagoya Inst. of Tech., Japan) "Investigation of trap states in in-situ MOCVD grown AlN/AlGaIn/GaN MIS-HEMTs grown on Sapphire substrates"		(11:00-11:30) Invited Lecture 7a-C041C X. Li (Peking Univ., China) "Synthesis of nanostructured materials by hot and cold plasmas"
	(11:50-12:10) 7a-A060A O. Li (Nagoya Univ., Japan) "By-Products Analysis for Degradation of Cellulose by Solution Plasma"		(11:50-12:10) 7a-B060B K. Takeshita (Tokyo Metropolitan Univ., Japan) "Charge-State Dependent Annealing of Plasma-Induced Defects in n-GaN"		(11:30-11:50) 7a-C050C C. Hsiao (Linköping Univ., Sweden) "Core-Shell AlInN Nanorod Arrays Grown by Magnetron Sputter Epitaxy"
(11:50-12:10) 7a-C060C T. Suzuki (Nagoya Univ., Japan) "Field Emission Properties of 10-nm Organic Nanopillars Fabricated by H <sub>2</sub> /N <sub>2</sub> Mixture Gas Plasma Etching"					
(12:10-13:00) Lunch					
(13:00-14:30) Poster Session 3					
Interdisciplinary 1 Advanced Nitride Devices Chair: A. Khan (Univ. of South Carolina, USA) <Room S>	(14:30-15:05) Keynote Lecture 7p-S01KB B. Daudin (CEA-Grenoble, France) "GaN nanowires, GaN/AlGaIn and InGaIn/GaN nanowire heterostructures: growth, structural and optical properties"				
	(15:05-15:35) Invited Lecture 7p-S021B T. Hashizume (Hokkaido Univ., Japan) "GaN-based MOS structures processed with plasma-assisted dry etching"				
	(15:35-16:05) Invited Lecture 7p-S031B Y. Saito, A. Yoshioka (Toshiba Corporation Semiconductor & Storage Products Company, Japan) "GaN-HEMTs for Power Electronic Applications"				
	(16:05-16:25) 7p-S040B Q. Wang (The Univ. of Tokushima, Japan) "Influence of Dry Recess Process on Enhancement-mode GaN MOSFET"				
(16:25-16:45) Break					
Interdisciplinary 2 Plasma Science and Nitride Semiconductors Chair: M. Yamaguchi (Nagoya Univ., Japan) <Room S>	(16:45-18:05) Panel Discussion Application of Advanced Plasma Technology for Nitride Semiconductors III -Importance and problem of plasma processing in nitride semiconductor devices- =MODERATOR= H. Amano (Nagoya Univ., Japan) =PANELIST= T. Hashizume (Hokkaido Univ., Japan) T. Kachi (Toyota Central R&D Labs., Inc., Japan) A. Khan (Univ. of South Carolina, USA) L. Selvaraj (Nagoya Inst. of Tech., Japan) Y. Nanishi (Ritsumeikan Univ., Japan/Seoul National Univ., Korea) Y. Saito (Toshiba Corp. Semiconductor & Storage Products Company, Japan) J. Suda (Kyoto Univ., Japan)				

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<b>MAR 8 (Thu)</b>	
(9:10-) Registration	
Interdisciplinary 3 Plasma Assisted Growth Chair: B. Daudin (CEA-Grenoble, France) <Room S>	(9:30-10:05) Keynote Lecture 8a-S01KD J. Speck (Univ. of California Santa Barbara, USA) "Progress in the MBE Growth of GaN – Materials and Devices"
	(10:05-10:25) 8a-S02OD K. Wang (Ritsumeikan Univ., Japan) "Free holes in Mg doped InN confirmed by thermopower experiments"
	(10:25-10:45) 8a-S03OD T. Ohachi (Doshisha Univ., Japan ) "Self-ionization of nitrogen atoms from negatively biased electrode for monitoring nitrogen atom flux to use PA-MBE"
(10:45-11:00) Break	
Interdisciplinary 4 Advanced Carbon Materials Chair: M. Hiramatsu (Meijo Univ., Japan) <Room S>	(11:00-11:35) Keynote Lecture 8a-S04KD M. Meyyappan (NASA Ames Research Center, USA) "Plasma Nanotechnology: Past, Present, and the Future"
	(11:35-12:05) Invited Lecture 8a-S05ID M. Hasegawa (AIST, Japan) "Low-temperature and large-area graphene synthesis by using microwave plasma CVD"
	(12:05-12:25) 8a-S06OD T. Hagino (Nagoya Univ., Japan) "Effect of electrode materials on Synthesis of nano-graphene by alcohol in-liquid plasma"
(12:25-13:30) Lunch	
Late News Chair: M. Sekine (Nagoya Univ., Japan) <Room S>	(13:30-14:00) 8p-S01OLNA C. Koshimizu (Tokyo Electron Yamanishi Ltd., Japan) "Measurement of heat fluxes to silicon wafer in plasma etching using low-coherence interferometry"
	8p-S02OLNB A. Jesudas (Nanyang Technological Univ., Singapore) "Trapping Analysis by Pulsed Current-Voltage Characteristics for AlGaIn/GaN HEMTs on 4-inch Si (111)"
	8p-S03OLNC J. Yang (Chang Gung Univ., Taiwan) "Preparation and characterization of nano Pt-modified graphene fuel cell catalyst for methanol oxidation in alkaline solutions"
Green Innovation 1 Chair: M. Meyyappan(NASA Ames Research Center, USA) <Room S>	(14:00-14:35) Keynote Lecture 8p-S01KD R. Nemanich (Arizona State Univ., USA) "Energy Conversion based on Thermionic and Photo-Electron Emission using Low Work Function Doped Diamond Films"
	(14:35-15:05) Invited Lecture 8p-S02ID A. Yoshikawa (Chiba Univ., Japan) "Proposal of SMART III-Nitride Tandem Solar Cells with Using InN/GaN Magic Number Digital Alloys "
	(15:05-15:35) Invited Lecture 8p-S03ID V. Svrcek (AIST, Japan) "Microplasma Induced Surface Engineering of Silicon Nanocrystals in Liquid Medium"
	(15:35-16:05) Invited Lecture 8p-S04ID T. Nozaki (Tokyo Inst. of Tech., Japan) "Room Temperature Methane Conversion for Green Technology: Direct Synthesis of Methane to Methanol"
(16:05-16:25) Break	
Green Innovation 2 Chair: T. Inomata (Nagoya Inst. of Tech., Japan) <Room S>	(16:25-17:45) Panel Discussion Advanced Plasma Nanotechnology towards Green Innovation =MODERATOR= T. Nozaki (Tokyo Inst. of Tech., Japan) =PANELIST= M. Kambara (The Univ. of Tokyo, Japan) M. Meyyappan (NASA Ames Research Center, USA) R. Nemanich (Arizona State Univ., USA) V. Svrcek (AIST, Japan)
(17:45-18:05) Award	
(18:05-18:15) Closing	