

Fourth International Symposium on Atomically Controlled Fabrication Technology

October 31-November 2, 2011

Osaka University Nakanoshima Center, Osaka, Japan

Sunday, 30 October 2011

18:00 PM **Welcome Party**

Monday, 31 October 2011

9:30 AM	Opening Remark	K. Yamauchi	<i>Osaka University</i>
Session1: "Advanced Optics and Photonics"			
9:40 AM	1.1 <i>Invited</i> - Nanofocus Beams for Coherent Imaging: 10 nm Cross-Section by a Combined Mirror-Waveguide System	T. Salditt ¹ , S.P. Krüger ¹ , S. Kalbfleisch ¹ , M. Bartels ¹ , R. Wilke ¹ , M. Priebe ¹ , M. Osterhoff ¹ , C. Olendrowitz ¹ , K. Giewekemeyer ¹ and M. Sprung ²	¹ <i>Universität Göttingen</i> ² <i>DESY</i>
10:20 AM	1.2 <i>Invited</i> - X-ray Imaging Observations of the Sun	T. Sakao ¹ , N. Narukage ¹ , S. Imada ¹ , M. Shimojo ² , Y. Suematsu ² and S. Tsuneta ²	¹ <i>ISAS/JAXA</i> ² <i>NAOJ</i>
10:50 AM	1.3 Development of Nanoprecision Optical Devices and Systems for Hard X-ray Microscopes and Space Telescopes	K. Yamauchi ^{1,2,3}	^{1,2} <i>Osaka University</i> ³ <i>JST-CREST</i>
11:15 AM	1.4 Special Photonic Materials Inspired by the Morpho-butterfly's Mystery - Analysis, Design, Fabrication and Applications -	A. Saito ^{1,2} , M. Yonezawa ¹ , T. Shibuya ¹ , M. Akai-Kasaya ¹ and Y. Kuwahara ^{1,2}	¹ <i>Osaka University</i> ² <i>RIKEN Spring-8</i>
11:40 AM	Lunch		
Session2: "Surface and Interface Nanoscience"			
13:10 PM	2.1 <i>Invited</i> - Prediction of Electron Mobilities in Organic Semiconducting Materials Using DFT Based Calculations	H. Oberhofer ^{1,2} and J. Blumberger ³	¹ <i>University of Cambridge</i> ² <i>Technical University Munich</i> ³ <i>University College London</i>
13:50 PM	2.2 <i>Invited</i> - First-Principles Study on Semiconductor Electrode/Liquid Interfaces for Photocatalysis and Dye-Sensitised Solar Cell	Y. Tateyama ^{1,2} , M. Sumita ¹ and K. Sodeyama ^{1,2}	¹ <i>MANA/NIMS</i> ² <i>JST-CREST</i>
14:20 PM	2.3 Theoretical Investigation of Interface Dipoles at Organic/Metal Interfaces	Y. Morikawa ^{1,2} , S. Yanagisawa ³ , I. Hamada ⁴ and T. Saigo ¹	^{1,2} <i>Osaka University</i> ³ <i>University of the Ryukyus</i> ⁴ <i>Tohoku University</i>
14:45 PM	2.4 Storing Hydrogen in Graphite, Revisited	W. A. Diño, H. Nakanishi and H. Kasai	<i>Osaka University</i>
15:10 PM	Coffee Break		
Student Session 1			
15:30 PM	S1-1 Formation of SiO _x N _y Films for Passivation of Si Surfaces by Atmospheric-Pressure Plasma Oxidation	ZT. Zhuo, K. Goto, Y. Sannomiya, Y. Kanetani, T. Yamada, H. Ohmi, H. Kakiuchi and K. Yasutake	<i>Osaka University</i>
15:45 PM	S1-2 Fabrication of Atomically Controlled Flat GaN (0001) Surfaces Using Catalyst-Referred Etching in Water	S. Sadakuni ¹ , J. Murata ¹ , T. Okamoto ¹ , Y. Sano ¹ , K. Yagi ² , K. Tachibana ¹ , H. Asano ¹ and K. Yamauchi ¹	^{1,3} <i>Osaka University</i> ² <i>Ebara Corp.</i>
16:00 PM	S1-3 Development of Multiply-arranged Elliptical Neutron Focusing Supermirror Device - Fabrication Process of High-Precision Thin Elliptical Supermirror -	M. Nagano ¹ , F. Yamaga ¹ , D. Yamazaki ² , R. Maruyama ² , K. Soyama ² and K. Yamamura ¹	¹ <i>Osaka University</i> ² <i>JAEA</i>
16:15 PM	S1-4 Improvement of the Removal Rate in Catalyst-referred Etching of 4H-SiC Using Catalytic Platinum and Hydrofluoric Acid	T. Okamoto ¹ , Y. Sano ¹ , K. Tachibana ¹ , K. Arima ¹ , K. Inagaki ¹ , K. Yagi ² , S. Sadakuni ¹ , A. Isohashi ¹ , Y. Morikawa ¹ and K. Yamauchi ^{1,3}	^{1,3} <i>Osaka University</i> ² <i>Ebara Corp.</i>
16:30 PM	S1-5 A First Principles Study of Ortho-Para H ₂ Conversion on the Ag(111) Surfaces with Coadsorbed O ₂ Molecules	Y. Kunisada, H. Nakanishi, W. A. Diño and H. Kasai	<i>Osaka University</i>
16:45 PM	S1-6 First-Principles Study on Interface Structure at GeO ₂ /Ge Interface	S. Saito and T. Ono	<i>Osaka University</i>
17:00 PM	S1-7 First Principles Calculation of The Adsorption of Water on Li-Montmorillonite	T. Wungu ¹ , F. Rusydi ¹ , H. Dipojono ² and H. Kasai ¹	¹ <i>Osaka University</i> ² <i>ITB</i>
17:15 PM	S1-8 A DFT Study of OOH Dissociation on Platinum Alloy Catalysts	W. T. Cahyanto ^{1,2} , M. C. S. Escano ¹ , R. L. Arevalo ^{1,3} and H. Kasai ¹	¹ <i>Osaka University</i> ² <i>UNSOED</i> ³ <i>Philippine Normal University</i>

Excursion

Tuesday, 1 November 2011

Session 3: "Sustainable Energy Materials and Devices"			
9:30 AM	3.1 <i>Invited</i> - Atomically-Controlled Technologies as Key Enablers for Today's and Tomorrow's Crystalline Si Solar Cells	F. Dross	<i>IMEC</i>
10:15 AM	3.2 <i>Invited</i> - Contribution of Atomic Layer Epitaxy of Group III Nitrides to Future Reduction of Fossil Fuel Consumption	H. Amano	<i>Nagoya University</i>
10:45 AM	3.3 Atmospheric-Pressure Plasma Processes for Efficient Formation of Functional Thin Films at Low-Temperatures	K. Yasutake ^{1,3} , H. Ohmi ^{1,3} , T. Yamada ^{1,3} and H. Kakiuchi ^{1,3}	^{1,2} <i>Osaka University</i> ³ <i>JST-CREST</i>

11:10 AM	3.4 First-Principles Analysis on Si(001) Etching with Hydrogen Radicals	K. Inagaki ^{1,2} , K. Hirose ¹ , Y. Morikawa ¹ and K. Yasutaka ^{1,2}	¹ Osaka University ² JST-CREST
11:35 AM	Lunch		
13:00 PM	Poster Session		
	Session 4: "New Functional Devices and Postscaling Technology"		
15:30 PM	4.1 <i>Invited</i> - Monolithic Active Silicon Photonics	J. Liu ¹ , L. C. Kimerling ² and J. Michel ²	¹ Dartmouth College ² MIT
16:10 PM	4.2 <i>Invited</i> - Double-Gate CMOS Device Technology	K. Endo	AIST
16:40 PM	4.3 Fabrication of High-quality GOI and SGOI Structures by Rapid Melt Growth Method	H. Watanabe, C. Yoshimoto, T. Hashimoto, S. Ogiwara, Y. Suzuki, T. Hosoi and T. Shimura	Osaka University
17:05 PM	4.4 <i>Invited</i> - Computational Simulation of Electron and Phonon Transport in Nanoscale Si Structures	Y. Kamakura ^{1,4} , H. Minari ^{1,4} , T. Zushi ² , T. Watanabe ^{2,4} , G. Mil'nikov ^{1,4} , K. Kukita ¹ , S. Uno ^{3,4} and N. Mori ^{1,4}	¹ Osaka University ² Waseda University ³ Ritsumeikan University ⁴ JST-CREST
18:00 PM	Banquet		

Wednesday, 2 November 2011

	Session 5: "Innovative Technologies for Post-silicon materials and Devices"		
9:30 AM	5.1 <i>Invited</i> - Singlet Fission, Long-range Triplet Exciton Diffusion and Surface Nature of Photoconductivity in Highly Ordered Organic Semiconductors	V. Podzorov	Rutgers University
10:10 AM	5.2 <i>Invited</i> - Organic Single-Crystal Light-Emitting Transistors toward Organic Laser Devices	T. Takenobu	Waseda University
10:40 AM	5.3 Optical and Transport Properties in Molecular Nanosystems Observed by STM-based Techniques	Y. Kuwahara ^{1,2} , A. Saito ^{1,2} and M. Akai-Kasaya ¹	¹ Osaka University ² RIKEN SPring-8
11:05 AM	5.4 Patternable Solution-Crystallized Organic Transistors with High Charge Carrier Mobility	T. Uemura ¹ , K. Nakayama ¹ , Y. Hirose ¹ , J. Soeda ² , M. Uno ^{1,3} , Y. Nakazawa ² , and J. Takeya ¹	^{1,2} Osaka University ³ TRI
11:30 AM	Lunch		
	Student Session 2		
13:00 PM	S2-1 Electron Diffraction Analysis of Molybdenum Oxide Crystal Encapsulated inside Individual Carbon Nanotube	R. Sagawa ¹ , W. Togashi ¹ , T. Akita ² and Y. Takai ¹	¹ Osaka University ² AIST
13:15 PM	S2-2 Nanoscale Heating of Laser-irradiated Single Gold Nanoparticles	M. Honda, Y. Saito, N. I. Smith, K. Fujita, and S. Kawata	Osaka University
13:30 PM	S2-3 Development of a Plasmonic Biosensing System Using Au Nano-particle Pairs	H. Morimura, S. Tanaka, H. Ishitobi and Y. Inouye	Osaka University
13:45 PM	S2-4 Plasmonic Property of High-density Gold Nanoparticle Monolayer Arranged Using Ferritin Protein-base Encapsulation/transport System	T. Hashimoto ¹ , Z. Bin ^{2,3} , M. Fukuta ^{1,3} , N. Zettsu ^{1,3} , K. Gamo ¹ , Y. Fukunishi ¹ , I. Yamashita ^{2,3} , Y. Uraoka ^{2,3} and H. Watanabe ^{1,3}	¹ Osaka University ² NAIST ³ JST-CREST
14:00 PM	S2-5 Luminescence from a Single Molecule and Molecular Assemblies Detected by Scanning Tunneling Microscopy	A. Fujiki, K. Harada, Y. Miyake, M. Akai-Kasaya, A.Saito and Y. Kuwahara	Osaka University
14:15 PM	S2-6 Lateral Manipulation of Co Atoms on Oxidized Cu(110) Surface with Low Temperature Atomic Force Microscopy	Y. Kinoshita, Y. Naitoh, Y. J. Li and Y. Sugawara	Osaka University
14:30 PM	S2-7 Simultaneous Measurement of Electronic Structure and Force Fields on Cu (110)-O by LT-AFM/STM	Z. M. Ma, Y. Naitoh, Y. J. Li and Y. Sugawara	Osaka University
14:45 PM	S2-8 The Comparison of AFM and STM Topography of TiO ₂ (110) Surface	L. Kou, T. Kamijo, Y. Naitoh, Y. J. Li and Y. Sugawara	Osaka University
15:00 PM	Award Ceremony		
15:10 PM	Closing Remark		