

Wednesday, June 30, 2010

Conference Room 202(2F)

Get Together Party (17:30-19:30)

Thursday, July 1, 2010

Convention Hall 200(2F)

Chair Persons H. Hiroshima (AIST) and Y. Hirai (Osaka Pref. Univ.)

- 1A-0** **Opening Remark**
9:00 M. Komuro (NEDO) and Y. Hirai (Osaka Pref. Univ.)
- 1A-1** **Enhancement of Conversion Efficiency of Solar Cells Using Nano-Sized Anti-Reflection Patterns (Invited)**
9:05 K.-S. Han, S.-H. Hong, K.-Y. Yang, J.-H. Shin and H. Lee
Korea Univ., Korea
- 1A-2** **Fabrication of sub-20nm Half-Pitch Pattern by Nano-Imprinting**
9:30 N. Sato, T. Oomatsu, S. Wakamatsu, K. Nishimaki, T. Usa, K. Kodama and K. Usuki
Fujifilm, Japan
- 1A-3** **Applicability of UV Nanoimprint Using Pentafluoropropane to Tens of Nanometer Patterning**
9:50 H. Hiroshima 1,2, Q. Wang 1,2 and S.-W. Youn 1,2
1 AIST and 2 JST-CREST, Japan
- 1A-4** **A Meshfree Approach for Large Deformation Analysis in Thermal Nanoimprint**
10:10 Y. Onishi and K. Amaya
Tokyo Inst. of Technol., Japan
- 1A-5** **Molecular Size Effects on Polymer Filling Process in Nanoimprint Lithography studied with Molecular Simulation**
10:30 A. Taga 1,2, M. Yasuda 1,2, A. Horiba 1,2, H. Kawata 1,2 and Y. Hirai 1,2
1 Osaka Pref. Univ., and 2 JST CREST, Japan
- 1A-6** **High Brightness LED Process Using Resin Mold in NIL Process (Invited)**
11:05 H. Nishihara
Toshiba Machine, Japan
- 1A-7** **Nanoimprint Lithography-Based Printable Photonics Technology for Photonics Device Fabrication and Application**
11:30 T. Endo 1, H. Tamura 2, N. Okuda 2, Y. Yanagida 1, S. Tanaka 2 and T. Hatsuzawa 1
1 Tokyo Inst. of Technol. and 2 SCIVAX, Japan
- 1A-8** **Resistive Switching Memory by the Ultra-Violet Nanoimprint Lithography Process**
11:50 K.-D. Kim 1, D.K. Yun 1, S. Kim 2, D.-G. Choi 1, J.-H. Lee 1, J.-H. Choi 1, Y.-K. Choi 2, J.-H. Jeong 1 and E.-S. Lee 1
1 KIMM and 2 KAIST, Korea

Coffee Break (10:50-11:05)

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Lunch (12:10-13:10)

Convention Hall 200(2F)

Chair Persons M. Nakagawa (Tohoku Univ.) and J. Ahopelto (VTT)

- 1A-9** **Roll-to-Roll Nanoimprinting for Optical Applications (Invited)**
13:10 J. Ahopelto 1, T. Mäkelä 1, T. Haatainen 1, K. Rinko 2, D. Mendels 3, H. Schiff 4, C. Sotomayor Torres 5 and A. Kristensen 6
1 VTT Micro and Nanoelectronics, Finland, 2 Oy Modines, Finland, 3 Congnoscens, France, 4 Paul Scherrer Inst., Switzerland, 5 Catalan Inst. of Nanotechnol., Spain and Technical Univ. of Denmark, Denmark
- 1A-10** **Seamless Roller Molds with 3D Micro-Structures for Continuous Roller-Imprinting**
13:35 Y.-C. Lee, H.-W. Chen and S.-R. Huang
National Cheng Kung Univ., Taiwan
- 1A-11** **A Reel-to-Reel Thermal Imprint System for Fiber Substrate**
13:55 A. Ohtomo 1,3, H. Mekaru 1,2, H. Takagi 1,2, M.Kokubo 1,3 and H. Goto 1,3
1 Macro BEANS, 2 AIST and 3 Toshiba Machine, Japan
- 1A-12** **Fabrication of High-Reliability Ni-Based Nanoimprinting Mold**
14:15 E. Nagasawa 1, F. Kitaoka 1, C.-P. Lin 2, M. Saito 2 and T. Homma 2
1 LEAP and 2 Waseda Univ., Japan
- 1A-13** **Direct Fabrication of SiO₂ Molds Using Nanoimprint Lithography**
14:35 M.S.M. Saifullah, S.H. Lim, H. Hussain and H.Y. Low
Agency for Sci. Technol. and Res., Singapore
- 1A-14** **Organic Spin on Glass Replica Mold Fabricated by Room Temperature Nanoimprinting**
14:55 M. Okada 1,3,4, M. Maeda 2, S. Shimatani 2, S. Otaka 2 and S. Matsui 1,3
1 Univ. of Hyogo, 2 Tokyo Ohka Kogyo, 3 JST-CREST and 4 JSPS, Japan
- 1A-15** **Fabrication of Novel High Aspect Ratio Pillars Using Fine Flexible Mold by UV-NIL**
15:15 T. Nishino 1, J. Sakamoto 1, H. Kawata1, K. Mizutani 2 and Y. Hirai 1
1 Osaka Pref. Univ. and 2 Kinki Univ., Japan

1P: POSTER SESSION (15:40-17:10)

- 1P-1 Fabrication of High-Resolution Nanoimprint Mold by Electron Beam Lithography Using Calix Arene**
S. Omoto 1,2, M. Okada 1,2,3, Y. Kang 1,2, K. Kanda 1,2, Y. Haruyama 1,2, S. Tono 4, and S. Matsui 1,2
1 Univ. of Hyogo, 2 JST-CREST, 3 JSPS and TOKUYAMA, Japan
- 1P-2 Direct Metal Contact Printing Lithography for Patterning Sub-Micrometer Surface Structures on Sapphire Substrate Used in LED**
Y.-C. Lee and Y.-T. Hsieh
National Cheng Kung Univ., Taiwan
- 1P-3 Nanoimprint of Pt-based Metallic Glass with dies of Periodic Structure of 25 nm in Pitch Fabricated by FIB-CVD & RIE**
Y. Fukuda, Y. Saotome and A. Inoue
Tohoku Univ., Japan
- 1P-4 Hot Press on Plastic Optical Fibers Using Plane Mold**
H. Mearu 1,2, A. Ohtomo 1 and H. Takagi 1,2
1 Macro BEANS and 2 AIST, Japan
- 1P-5 Development of Ultrasonic Vibration Nanoimprint System**
A. Sawada, K. Ootsuka, H. Mearu and M. Takahashi
AIST, Japan
- 1P-6 Metal Liftoff Process Using Solvent Soluble Resist by UV-NIL**
T. Nishino 1, H. Miyake 2, T. Yukawa 2, J. Sakamoto 1, R. Suzuki 1, H. Kawata 1 and Y. Hirai 1
1 Osaka Pref. Univ. and 2 Daisel Chemical, Japan
- 1P-7 UV Nanoimprinting of UV-Curable Resins Containing ZrO₂ Nanoparticles**
S. Kudo, O. Sugihara and M. Nakagawa
Tohoku Univ., Japan
- 1P-8 A Method of Concurrent Imprinting and Selective Metal Patterning on Polymeric Substrate**
R.T.T. Khoo, J.B.K. Law and H.Y. Low
Agency for Sci., Technol. and Res., Singapore
- 1P-9 Fabrication and Characterization of SiO_x Moth-Eye Structure by Room-Temperature Nanoimprint with Liquid-Phase HSQ and PDMS Replica Mold**
Y. Kang 1,2, M. Okada 1,2,3, K. Kanda 1,2, Y. Haruyama 1,2 and S. Matsui 1,2
1 Univ. of Hyogo, 2 JST-CREST and 3 JSPS, Japan
- 1P-10 Fabrication of Anti-reflective Film Using Polymer Beads**
C.-C. Cheng, C.-P. Huang, H.-W. Hung, H.-H. Lin and J.-H. Tsai
ITRI, Taiwan
- 1P-11 Nanostructured Array of SERS Substrate for Label-free Bio-Molecular Detection by Nanoimprint Process**
T.-L. Chang, T.-H. Chou, D.-Z. Lin, K.-Y. Cheng and C.-W. Hsieh
ITRI, Taiwan
- 1P-12 Ar Plasma Treatment to Si Mold for Demolding Force Reduction**
Y. Watanabe 1, K. Kubo 1, H. Kawata 1,2, M. Yasuda 1,2 and Y. Hirai 1,2
1 Osaka Pref. Univ. and 2 CREST-JST, Japan
- 1P-13 Durability of Self-Assemble Monolayers Against Heat in Nanoimprinting**
Y. Nakai 1,2, S. Omoto 1,2, Y. Kang 1,2, M. Okada 1,2,3, K. Kanda 1,2, Y. Haruyama 1,2 and S. Matsui 1,2
1 Univ. of Hyogo, 2 JST-CREST and 3 JSPS, Japan
- 1P-14 Examination of Pentafluoropropane Gas Effect for UV Nanoimprint Resin in Macro-Scale Area**
M. Chinen 1,3, M. Okada 1,3,4, Y. Haruyama 1,3, K. Kanda 1,3, H. Hiroshima 2, 3 and S. Matsui 1,3
1 Univ. of Hyogo, 2 AIST, 3 JST-CREST and 4 JSPS, Japan
- 1P-15 Mechanical Measurement System for Detecting Adhesion Forces Generated between UV-Cured Resin and Modified Silica Surfaces**
M. Nakagawa 1,2, A. Kohno 1 and S. Matsui 2,3
1 Tohoku Univ., 2 JST-CREST and 3 Univ. of Hyogo, Japan
- 1P-16 UV Nanoimprinting on Calixarene Derivative**
M. Chinen 1,4, M. Okada 1,4,5, M. Iyo 2, S. Tachibana 3, Y. Haruyama 1,4, K. Kanda 1,4 and S. Matsui 1,4
1 Univ. of Hyogo, 2 Shin Nakamura Chemical, 3 Sugai Chemical, 4 JST-CREST and 5 JSPS, Japan
- 1P-17 Calculation of Resonant Frequency for Bowtie Nanoantennae**
C.-C. Cheng, Y.-N. Pao, H.-C. Hsu and J.-H. Tsai
ITRI, Taiwan
- 1P-18 Emission Enhancement Effect in Nanosilver Colloid-Filled Photonic Crystal Array**
J.H. Choi, S.J. Park, S.W. Lee, D.G. Choi, K.D. Kim and J.H. Jeong
KIMM, Korea
- 1P-19 Improvement of Light Extraction Efficiency of Organic Light Emitting Diodes Using Subwavelength Grating Fabricated by Self-Assembled Nano-Particles in Combination with Nanoimprint**
T. Nakanishi, T. Hiraoka, A. Fujimoto, S. Mataka, H. Sano, S. Okutani, H. Kubota and K. Asakawa
Toshiba, Japan

1P-20 Silicon Master Template Fabrication for Patterned Media
M. Fukuda, K. Ito, M. Ishikawa, N. Kuwahara, T. Chiba and M. Hoga
DNP, Japan

1P-21 Fabrication of TiO₂ Nano-Patterns on GaN-based Light-Emitting Diodes to Improve Light Extraction
J.-Y. Cho, K.-J. Byeon, H. Park and H. Lee
Korea Univ., Korea

1P-22 Fabrication of Polyimide Patterns Using Nano-Imprint Lithography
K.-I. Kim, K.-S Han and H. Lee
Korea Univ., Korea

BANQUET (18:00-20:00) Okura Frontier Hotel Tsukuba,3F (Room Jupiter)

Friday, July 2, 2010

Convention Hall 200(2F)

Chair Persons J. Nishii (Hokkaido Univ.) and A. Miyauchi (Hitachi)

2A-1 **Nanoimprint of Gratings on a Bulk Metallic Glass (Invited)**
9:00 J.P. Chu
National Taiwan Univ. of Sci. and Technol., Taiwan

2A-2 **Glass-imprinting for Optical Device Fabrication (Invited)**
9:25 J. Nishii
Hokkaido Univ., Japan

2A-3 **Analysis of Fast Hot Embossing Process for Micro and Nano Structure Fabrication**
9:50 F.-Y. Chang, C.-S. Chang, Y.-F. Lee and C.-Y. Cheng
National Taiwan Univ. of Sci. and Technol., Taiwan

2A-4 **Air Bubble Trapping in UV Nanoimprint Lithography Using Capacity-Equalized Mold**
10:10 Q. Wang 1,2, H. Hiroshima 1,2 and S.-W. Youn 1,2
1 AIST and 2 JST-CREST, Japan

Coffee Break (10:30-10:45)

Conference Room 202(2F)

Convention Hall 200(2F)

2A-5 **Evaluation of Curing Characteristics in UV-NIL Resist**
10:45 R. Suzuki 1,2 and Y. Hirai 1,2
1 Osaka Pref. Univ. and 2 CREST-JST, Japan

2A-6 **Evaluation of Radical- and Cationic- UV-Curable Resins for Studying UV-Nanoimprint**
11:05 Y. Sawada 1,5, M. Okada 1,5,6, H. Miyake 2, T. Ohsaki 3, Y. Hirai 4,5, Y. Haruyama 1,5, K. Kanda 1,5 and S. Matsui 1,5
1 Univ. of Hyogo, 2 Daicel Chemical, 3 Toyo Gosei, 4 Osaka Pref. Univ., 5 JST-CREST and 6 JSPS, Japan

2A-7 **Nano-scale Rheology of Photo-curable Resist for Nanoimprint**
11:25 R. Washiya 1, M. Hino 2, M. Mizukami 2, K. Kurihara 2 and A. Miyauchi 1
1 Hitachi and 2 Tohoku Univ., Japan

2A-8 **Facile Molding of Poly(styrene) Thin Film Using Plasticizer Visualized by Fluorescent Microscopy**
11:45 S. Kubo, Y. Sato and M. Nakagawa
Tohoku Univ., Japan

Conference Room 201 and 202(2F)

Lunch (12:05-13:10)

Convention Hall 200(2F)

Chair Persons K. Asakawa (Toshiba) and Y. Uozu (Mitsubishi Rayon)

2A-9 **Nanoimprinting for Chemical Synthesis (Invited)**
13:10 H.Y. Low
Inst. of Material Res. and Eng., Singapore

2A-10 **UV-Assisted Thermal Imprint Lithography for Micro-Scale Dual-Damascene Process**
13:35 S.-W. Youn, S.-C. Park, H. Takagi, H. Hiroshima, M. Takahashi, R. Maeda
AIST, Japan

2A-11 **Fabrication of Hydrophobic Nanostructures and its Application on Transferring Pattern with no Residual Layers**
13:55 Y.-H. Huang, J.-T. Wu, K.-H. Lin and S.-Y. Yang
National Taiwan Univ., Taiwan

2A-12 **Biosensing Using a Plasmonic Substrate Fabricated by UV Nanoimprint Lithography**
14:15 Y. Yokota 1,2, K. Tawa 1, J. Nishii 3 and T. Nakaoki 2
1 AIST, 2 Ryukoku Univ. and 3 Hokkaido Univ., Japan

Conference Room 202(2F)

Coffee Break (14:35-14:50)

Convention Hall 200(2F)

2A-13 **Moth-Eye Antireflection Surface Using Anodic Porous Alumina- Continuous Roll Imprinting - (Invited)**
14:35 E. Okamoto 1, K. Kojima 1, Y. Uozu 1, M. Ito 1 and T. Fujiwara 1, T. Yanagishita 2,3,4, K. Nishio 3,4 and H. Masuda 3,4
1 Mitsubishi Rayon, 2 JST-PRESTO, 3 KAST and 4 Tokyo Metropolitan Univ., Japan

2A-14 **Nanoimprint Fabricated Simultaneous Sub-Wavelength Anti-Reflection Combined Transparent Conduction Oxide Hybrid Films**
15:00 K.-Y. Cheng, T.-H. Chou, C.-W. Hsieh and T.-L. Chang
ITRI, Taiwan

2A-15 **Bilayer Resist Method Using Si Containing Photoresist in UV Nanoimprint Lithography**
15:20 D. Yamashita 1,2, M. Okada 1,2,3, Y. Kang 1,2, Y. Haruyama 1,2, K. Kanda 1,2 and S. Matsui 1, 2
1 Univ. of Hyogo, 2 JST-CREST and 3 JSPS, Japan

15:40 **Closing Remark**
S. Matsui (Univ. of Hyogo)