

ICPST-40 (Makuhari Messe, June 27-30, 2023) PROGRAM

All listed times are JST (UTC +9, PDT +16)

JUNE 27, 2023, Registration (15:00-17:00)
Welcome Reception at Room304 (17:00-19:00)

JUNE 28, 2023 Registration(9:00-17:00)

301	302	303	304
<p>A0: Session Chairpersons : Takeo Watanabe (Univ. of Hyogo) and Tomoki Nagai (JSR)</p> <p>A0 09:30-09:35 Opening</p> <p>A0 09:35-09:45 Overview</p> <p>A0-1 09:45-10:35 Semiconductor Industry Exceeds \$1 Trillion as Third Super Cycle Arrives (Plenary) Tetsuya Wadaki(Mitsubishi UFJ Morgan Stanley Securities, Japan)</p> <p>10:35-10:40 break time</p>			
<p>A5-1: Session Chairpersons : Takeo Watanabe (Univ. of Hyogo) and Taku Hirayama (HOYA)</p> <p>A5-1-1 10:40-11:25 The next step in Moore's Law: High NA EUV towards customer introduction (including the story of the naked mole rat) (Keynote) Jan van Schoot(ASML Netherlands B.V., The Netherlands)</p> <p>11:25-11:30 break time</p> <p>A5-1-2 11:30-12:00 Scaling EUV to high and hyper NA: characterization and metrology needs and innovations (Invited) Patrick Naulleau 1,2(1 EUV Tech and 2 Lawrence Berkeley Natl. Lab., USA))</p> <p>A5-1-3 12:00-12:30 Process Technologies Aiming for High Resolution High NA EUV Resist Patterning (Invited) Seiji Nagahara(Tokyo Electron, Japan)</p>		<p>B1: Session Chairpersons: 荒木 齊 (東レ)、平野孝(住友ベークライト)</p> <p>B1-1 10:40-11:00 酸化チタンの存在下で側鎖にカル ボキシル基を有するポリアミド酸を 合成することによるポリイミド-酸 化チタン複合材料の作製 森川 敦司(茨城大学)</p> <p>B1-2 11:00-11:20 高解像度かつ低応力な感光性ポリ イミド樹脂 酒井 智基, 奥田 裕美子, 加藤 圭悟, 松村 和行, 荒木 齊(東レ)</p> <p>B1-3 11:20-11:40 2-アミノ-4, 6-ジクロロ-1, 3, 5-トリア ジンと芳香族ジアミンからなる分岐 制御されたポリグアナミンの合成と 特性 芝崎 祐二, 小泉孝徳, 大石好行 (岩手大学)</p> <p>B1-4 11:40-12:00 末端にエチニル基を有する熱硬化 性ポリカーボネートの合成と性質 芝崎 祐二, 白田智也, 大石好行 (岩手大学)</p> <p>B1-5 12:00-12:20 液晶性ポリイミドのデータ駆動型分 子設計および合成 前田 颯 1, 丸井 莉花 1, 吉田 絵里菜 1, 難波江 裕太 1, 劉 芽 久哉 2, 森川 淳子 1, ウ ステフ アン 3, 野口 瑠 3,4, 林 慶浩 3, 吉田 亮 3, 早川 晃鏡 1(1 東京 工業大学, 2 産総研, 3 統計数理 研究所, 4 東京薬科大学)</p>	<p>A12-1: Session Chairperson : Kazuhiro Marumoto (Univ. of Tsukuba)</p> <p>A12-1-1 10:40-11:10 Photo-induced charge carrier dynamics of Tin based perovskite nanocrystals (Invited) Yasuhiro Tachibana 1,2, Mohamed Abodya Maged 1 and Keishiro Goshima 1(1 RMIT Univ. and 2 Osaka Univ., Japan)</p> <p>A12-1-2 11:10-11:40 Surface/interface structures of perovskite films studied by electron spectroscopies (Invited) Hiroyuki Yoshida 1 and Abduheber Mirzehmeh 2(1 Chiba Univ. and 2 AIST, Japan)</p> <p>A12-1-3 11:40-12:00 Synthesis and Characterisation of CePbCl₃ Perovskite Nanocrystal Keishiro Goshima 1,2, Mohamed Abodya 2, Tokuhisa Kawanami 3, Ryota Sato 3, Masaki Saruyama 3, Toshiharu Teranishi 3 and Yasuhiro Tachibana 2,4(1 Aichi Inst. of Technol., 2 RMIT Univ., 3 Kyoto Univ. and 4 Osaka Univ., Japan)</p> <p>A12-1-4 12:00-12:20 Molecular Orientations of Hole- Collecting Monolayers for High- Efficiency Perovskite Solar Cells Aruto Akatsuka 1, Minh Anh Truong 2, Atsushi Wakamiya 2 and Gaurav Kapil 3, Shuzi Hayase 3 and Hiroyuki Yoshida 1(1 Chiba Univ., 2 Kyoto Univ. and 3 Univ. of Electro Communications, Japan)</p>
	<p>A13-1: Session Chairpersons : Hiroyuki Mayama (Asahikawa Medical Univ.) and Atsushi Sekiguchi (Litho Tech Japan)</p> <p>A13-1-1 13:30-14:00 Anti-fouling Surface Prepared by Polyelectrolyte-grafted Nano- particles and Photo Crosslinking (Keynote) Motoyasu Kobayashi(Kogakuin Univ., Japan)</p>		<p>A12-2: Session Chairperson : Itaru Osaka (Hiroshima Univ.)</p> <p>A12-2-1 13:30-14:00 Molecular Design for Spontaneous Orientation Polarization in Organic Semiconductor Films (Invited) Keisuke Tajima 1, Wei-Chih Wang 1,2, Kyohei Nakano 1, Daisuke Hashizume 1 and Chain-Shu Hsu 2(1 RIKEN, Japan and 2 Natl. Yang Ming Chiao Tung Univ., Taiwan)</p>
<p>A5-2: Session Chairpersons : Danilo De Simone (IMEC) and Shinji Yamakawa (Univ. of Hyogo)</p>			

301	302	303	304
<p>A5-2-1 14:00-14:30 Plasma Dynamics and Future of LPP-EUV Source for Semiconductor Manufacturing (<i>Invited</i>) <u>Hakaru Mizoguchi</u> 1, Toshihiro Oga 1, Kentaro Tomita 2, Atsushi Sunahara 3, Daisuke Nakamura 4, Yukihiko Yamagata 4 and Katsunobu Nishihara 5(1 Gigaphoton, 2 Hokkaido Univ., Japan, 3 Purdue Univ., USA, 4 Kyusyu Univ., Japan and 5 Osaka Univ., Japan)</p>	<p>A13-1-2 14:00-14:25 Gut symbiotic microorganisms determine how insect pests live (<i>Invited</i>) <u>Yoshitomo Kikuchi</u>(AIST, Japan)</p>		<p>A12-2-2 14:00-14:30 Explaining FF of OSCs with respect to the small energetic offset (<i>Invited</i>) <u>Safa Shoae</u>(Univ. of Potsdam, Germany)</p>
<p>A5-2-2 14:30-15:00 A Holistic Approach to Understanding the Ultrafast Molecular Dynamics of Resist During EUV Exposure: An Introduction to imec's AttoLab for Ultrafast Kinetics and Sub-20 nm Pitch Lithography (<i>Invited</i>) <u>John S Petersen</u> 1, Kevin M. Dorney, Fabian Holzmeier 1, Esben W. Larsen 1, Thomas Nuytten 1, Dhirendra P. Singh 1, Laura Galleni 1,2, Faegheh S. Sajjadian 1,2, Thierry Conard 3, Ivan Pollentier 1, Michiel van Setten 1, Pieter Vanelderden 1, Clayton Bargsten 3, Seth L. Cousin 3, Daisy Raymondson 3, Eric Rinard 3, Rod Ward 3, Henry Kapteyn 4,5, Stefan Böttcher 6, Oleksiy Dyachenko 6, Raimund Kremzow 6, Marko Wietstruk 6, Geoffrey Pourtois 1 and Paul van der Heide 1(1 imec, 2 KU Leuven, Belgium 3 KM Labs, USA, 4 Univ. of Colorado Boulder, 5 NIST, USA, 6 SPECS, Germany)</p>	<p>13-1-3 14:25-14:50 Magnetic-Pneumatic Hybrid Soft Actuator (<i>Invited</i>) <u>Kosei Ito</u> and Fujio Tsumori(Kyushu Univ., Japan)</p>		<p>A12-2-3 14:30-14:50 (<i>Online</i>) Photovoltaic properties and phase-separated structures of polymer solar cells <u>Jihun Jeon</u>, Kiyotaka Doi, Hyung Do Kim, Hiroki Ogawa and Mikihiro Takenaka and Hideo Ohkita(Kyoto Univ., Japan)</p>
<p>A5-2-3 15:00-15:30 Electron generation in tin-oxo cage Extreme Ultraviolet photoresists (<i>Invited</i>) <u>Fred Brouwer</u> 1,2, Najmeh Sadegh 2, Quentin Evrard 1,2, Angelo Giglia 3, Nicola Mahne 3 and Stefano Nannarone 3(1 Univ. of Amsterdam, 2 Advanced Res. Center for Nanolithography, The Netherlands and 3 IOM-CNR Trieste, Italy)</p>	<p>13-1-4 14:50-15:10 Amylopectin-based eco-friendly photoresist material in water-developable lithography processes for surface micropatterns on polymer substrates <u>Yuna Hachikubo</u> 1, Sayaka Miura 1, Rio Yamagishi 1, Mano Ando 1, Makoto Kobayashi 2, Takayuki Ota 2, Toru Amano 2 and Satoshi Takei 1(1 Toyama Pref. Univ. and 2 Gunei Chemical Industry, Japan)</p>		<p>A12-2-4 14:50-15:10 Comparison of charge generation/collection in planar and bulk heterojunction organic solar cells Kyohei Nakano, Yumiko Kaji and <u>Keisuke Tajima</u>(RIKEN, Japan)</p>
<p>A5-2-4 15:30-15:50 New Design Approach of EUV Chemically Amplified Resist for Tighter Pitch Patterning <u>Choong Bong (CB) Lee</u>, Emad Aqad, Jong Park, Yinjie Cen, Li Cui, Suzanne M Coley, Benjamin D Naab, Conner Hoelzel, Rochelle Rena and Kenneth Hernandez(DuPont E&I Semiconductor Technol. Lithography, USA)</p>	<p>15:10-15:30 break time</p>		<p>15:10-15:20 break time</p>
<p>15:50-16:00 break time</p>	<p>A13-2: Session Chairpersons : Takayuki Murosaki (Asahikawa Medical Univ.) and Hiroyuki Mayama (Asahikawa Medical Univ.)</p>		<p>A12-3: Session Chairperson : Yasuhiro Tachibana (RMIT Univ.)</p> <p>A12-3-1 15:20-15:50 (<i>Online</i>) Effects of perovskite QDs on the photoexcited carrier dynamics and photovoltaic properties of perovskite solar cells (<i>Invited</i>) <u>Qing Shen</u>, Ryota Osanai, Hua Li, Chao Ding and Shuzi Hayase(Univ. of Electro-Communications, Japan)</p>
<p>A-5-3: Session Chairpersons : Fred Brouwer (Univ. of Amsterdam) and Taku Hirayama (HOYA)</p> <p>A5-3-1 16:00-16:30 Photoresist Design to Address Stochastics Issues in EUV Resists (<i>Invited</i>) <u>Christopher Ober</u>, Florian Kaefer, Jingyuan Deng and Chenyun Yuan(Cornell Univ., USA)</p>	<p>A13-2-1 15:30-15:50 Nanoimprinting of biomimetic nano line structures with high fluorine concentrations in photo curable material achieved with gas permeable template <u>Rio Yamagishi</u> 1, Sayaka Miura 1, Naoto Sugino 2, Yuna Hachikubo 1, Mano Ando 1 Yoshiyuki Yokoyama 3 and Satoshi Takei 1(1 Toyama Pref. Univ. 2 Sanko Goseii and 3 Toyama Industrial Technol. Res. and Develop.Center, Japan)</p> <p>A13-2-2 15:50-16:10 Fabrication of Biomimetic Nanostructure substrates by Injection Molding <u>Sayaka Miura</u> 1, Rio Yamagishi 1, Naoto Sugino 2, Yoshiyuki Yokoyama 3, Riku Miyazaki, Kaori Yasuda and Satoshi Takei 1(1 Toyama Pref. Univ. 2 Sanko Goseii and 3 Toyama Industrial Technol. Res. and Develop. Center, Japan)</p>	<p>A6-1: Session Chairperson : Jun Taniguchi (Tokyo Univ. of Sci.)</p> <p>A6-1-1 16:00-16:30 Optical metasurfaces for advanced imaging applications (<i>Invited</i>) <u>Masashi Miyata</u>(NTT Device Technol. Labs., Japan)</p>	<p>A12-3-2 15:50-16:20 Analysis of charge states and device degradation mechanisms in Sn-based perovskite solar cells by electron spin resonance (<i>Invited</i>) <u>Kazuhiro Marumoto</u>(Univ. of Tsukuba)</p>

301	302	303	304
	A13-2-3 16:10-16:30 Soft motion of dielectric driven balloon actuator <u>Yoshinobu Nishira</u> and Fujio Tsumori(Kyushu Univ., Japan)		A12-3-3 16:20-16:40 (Online) Photocurrent Enhancement in PbS Quantum Dot Solar Cells with Quantum Dot Hole Transport Layer Passivated by Short Organic Ligands <u>Yuyao Wei</u> , Chao Ding, Guozheng Shi, Shuzi Hayase and Qing Shen(Univ. of Electro-communications, Japan)
	A13-3: Session Chairpersons : Hiroyuki Mayama (Asahikawa Medical Univ.) and Motoyasu Kobayashi (Kogakuin Univ.)		
A5-3-2 16:30-16:50 Characterization of Photoacid Generator Bound Resist with X-Ray Absorption Spectroscopy at NewSUBARU <u>Shinji Yamakawa</u> , Tetsuo Harada, Koji Nakanishi and Takeo Watanabe(Univ. of Hyogo, Japan)	A13-3-1 16:30-16:50 Developing an endoscope lens with super water repellent antifouling function using biomimetics materials <u>Atsushi Sekiguchi 1,2</u> , Hiroko Minami 1, Masaaki Yasuda 2 and Yoshihiko Hirai 2(1 Litho Tech Japan, 2 Osaka Metropolitan Univ., Japan)	A6-1-2 16:30-16:50 Application of Machine Learning to Nanoimprinting Processes and Materials Design <u>Yoshihiko Hirai</u> , Yusei Kunitou and Masaaki Yasuda(Osaka Metropolitan Univ., Japan)	A12-3-4 16:40-17:00 Compositional dependence of charge carrier dynamics in multi-cation/halide wide bandgap perovskites <u>Ryosuke Nishikubo</u> , Yeon Park and Akinori Saeki(Osaka Univ., Japan)
A5-3-3 16:50-17:10 Understanding the dissolution behaviors of small molecules in EUV photoresist thin films <u>Giyoung Song</u> , Aram Jeon, Beom-Seok Kim, Chang Heon Lee and Songse Yi(Samsung Electronics, Korea)	A13-3-2 16:50-17:10 The settlement behaviors of sessile organisms on the surfaces with patterned functional groups <u>Takayuki Murosaki 1</u> , Junpei Watanabe 2, Yuji Hirai 2 and Yasuyuki Nogata 3(1Asahikawa Medical Univ., 2 Chitose Inst. of Sci. and Technol. and 3 Central Res. Inst. of Electric Power Industry, Japan)	16:50-17:00 break time	
		A6-2: Session Chairperson : Yoshihiko Hirai (Osaka Metropolitan Univ.)	
		A6-2-1 17:00-17:20 Filling behavior observation of UV-curable resin using bridge structure mold. <u>Yusuke Murakami</u> , Yusuke Nagai and Jun Taniguchi(Tokyo Univ. of Sci., Japan)	17:00-17:10 break time
A5-3-4 17:10-17:40 The EUV materials at the angstrom era of Moore's law (Invited) <u>Danilo De Simone</u> (IMEC, Belgium)	Cancel A13-3-3 17:10-17:30 TBA <u>Hiroyuki Mayama</u> (Asahikawa Medical Univ., Japan)		A12-4: Session Chairperson : Hideo Ohkita (Kyoto Univ.)
		A6-2-2 17:20-17:40 Transfer durability of re-release coated replica mold on ultraviolet nanoimprint lithography <u>Tomohito Wakasa</u> and Jun Taniguchi(Tokyo Univ. of Sci., Japan)	A12-4-1 17:10-17:40 Low cost high efficiency nonfused ring acceptors for organic solar cells (Invited) <u>Zhishan Bo</u> (Beijin Normal Univ., China)
A5-3-5 17:40-18:00 Spatial Distribution Analysis of Polymers in Resist Thin Film by Reflection-mode Resonant Soft X-ray Scattering <u>Atsunori Nakamoto</u> , Shinji Yamakawa, Tetsuo Harada and Takeo Watanabe(Univ. of Hyogo, Japan)		A6-2-3 17:40-18:00 Fabrication of moth-eye structure film with two types of resin separated by micron-order regions Kazuki Fujiwara and Jun Taniguchi(Tokyo Univ. of Sci., Japan)	A12-4-2 17:40-18:10 Stable photo-active layer of organic solar cell prepared by sequential deposition (Invited) <u>Kyungkon Kim</u> (Ewha Womans Univ., Korea)
			A12-4-3 18:10-18:30 A Dithienonaphthobisthiadiazole-Based π -Conjugated Polymer Enabling Low Voltage Loss and High Photocurrent in Nonfullerene Organic Photovoltaics <u>Tsubasa Mikie 1</u> , Shota Suruga 1, Yuuki Sato 2, Takumi Ishikawa 2, Hyung Do Kim 2 and Hideo Ohkita 2 Itaru Osaka 1 (1 Hiroshima Univ. and 2 Kyoto Univ., Japan)
			A12-4-4 18:30-18:50 Detrimental effects of "universal" singlet photo crosslinkers in organic photovoltaics <u>Ryo Suzuki 1,2</u> , Yuto Ochiai 1, Kyohei Nakano 1, Makoto Miyasaka 1,2 and Keisuke Tajima 1(1 RIKEN and 2 Tokyo Denki Univ., Japan)
19:00-20:30 Panel discussion: Advanced NIL application ~ AR/MR glass, Meta lens, Meta surface~			
Organizer: Jun Taniguchi (Tokyo Univ. of Sci., Japan) Yoshihiko Hirai (Osaka Metropolitan Univ., Japan)			
Panelist: Masashi Miyata (NTT Device Technol. Lab., Japan) Michael Mühlberger (PROFACTOR, Austria) (Online)			
Nanoimprint is superior in resolution and cost-effective nano fabrication technology, however it has advantage in material diversity and structural varieties. Here, we plan to discuss the current status of advance NIL application such as augmented reality and virtual reality, which have recently become hot topics.			

JUNE 29, 2023 Registration(9:00-17:00)

301	302	303	304
	<p>A10-1: Session Chairpersons : Sanjay Malik (FujiFilm Electronic Materials) and Yasuharu Murakami (Resonac Co. Ltd.)</p> <p>A10-1-1 09:00-09:30 Recent Trend of Advanced LSI Packaging: Introduction for application of polymers (Invited) Takumi Ueno(Shinshu Univ., Japan)</p> <p>A10-1-2 09:30-10:00 (Online) Trends on Large Area Advanced Packaging (Invited) Tanja Braun(Fraunhofer IZM, Germany)</p> <p>A10-1-3 10:00-10:30 Effects of High Energy Electron Beam Irradiation on Chemical Bonding at Polymer-Metal Interface (Invited) Yugo Kubo(Sumitomo Electric Industries, Japan)</p>		
<p>A5-4: Session Chairpersons: Hiroto Kudo (Kansai Univ.) and Taku Hirayama (HOYA)</p>	<p>A10-2-1 10:40-11:10 Design of Thermosets: New Materials and Process Innovations for the Circular Economy (Invited) Robert D. Allen(Natl. Renewable Energy Lab., USA)</p>		
<p>A5-4-1 10:30-10:50 Theory of Photodecomposable Base in Chemically Amplified Resist Mark Neisser(Tsinghua Univ., China)</p>	<p>10:30-10:40 break time</p> <p>A10-2: Session Chairpersons : Tanja Braun (Fraunhofer IZM) and Yugo Kubo (Sumitomo Electric Industries)</p>		
<p>A5-4-2 10:50-11:10 Spatial distributin imaging of Resist thin film with Micrometer resolution using Reflection Type Soft X-ray Projection Microscope Shuheji Iguchi 1, Tetsuo Harada 1, Shinji Yamakawa 1, Takeo Watanabe 1 and Takeharu Motokawa 2(1 Univ. of Hyogo, and 2 KIOXIA, Japan)</p>	<p>A10-2-2 11:10-11:30 Development of Photoimageable Dielectric Materials for Advanced Semiconductor Packageing Yasuharu Murakami(Resonac, Japan)</p>		
<p>A5-4-3 11:10-11:30 Present status of EUV interference lithography at NewSUBARU Rikuya Imai, Shinji Yamakawa, Tetsuo Harada and Takeo Watanabe(Univ. of Hyogo, Japan)</p>	<p>A10-2-3 11:30-11:50 Reliability study for photosensitive RDL material Ryota Shiraiishi, Yasunori Takahashi and Ritsuya Kawasaki(Sumitomo Bakelite, Japan)</p>		
<p>A5-4-4 11:30-11:50 Fundamental evaluation of KrF resist changing formulation by EB and EUV exposure Yosuke Ohta 1, Atsushi Sekiguchi 1, Takeo Watanabe 2, Tetsuo Harada 2, Shinji Yamakawa 2, Hiroki Yamamoto 3(1 Litho Tech Japan, 2 Univ. of Hyogo and 3 Natl. Inst. for Quantum Sci. and Technol., Japan)</p>			
	<p>A10-3: Session Chairpersons : Robert D. Allen (Natl. Renewable Energy Lab.) and Takumi Ueno (Shinshu Univ.)</p>		
	<p>A10-3-1 13:10-13:35 Material Design Strategies for Improved Packaging Reliability (Invited) Sanjay Malik, Binod De, Stephanie Dillocker, Raj Sakamuri, William Reinert and Al Naiini(FUJIFILM ELECTRONIC MATERIALS USA, USA)</p> <p>A10-3-2 13:35-13:55 Hybrid Bonding Technology Utilizing Molding Compound and Photo Imageable Dielectric Systems Yuki Imazu and Kazuyuki Mitsukura(Resonac, Japan)</p>	<p>B2-1: Session Chairpersons : 井上泰志(千葉工業大学), 近藤伸一(岐阜薬科大学)</p> <p>B2-1-1 13:30-13:55 ポリスチレン表面処理のための楕型電極を用いた大気圧ヘリウムプラズマの電気的及び光学的特性 今中海舟 1, 真鍋義人 2, 松山嗣史 1, 辻幸一 1, 白藤立 1,2, 呉準席 1,2(1 大阪公立大学, 2 大阪市立大学)</p>	<p>B3-1: Session Chairperson: 部家彰(兵庫県立大学)</p> <p>B3-1-1 13:30-13:50 化学増幅型 3 成分ノボラックレジストにおける溶解抑制剤の保護率とレジスト特性との関係 高嶋克彰, 堀邊英夫(大阪公立大学)</p>
			<p>B3-1-2 13:50-14:10 酸素マイクロバブル水による芳香族分解の解明 水谷 匡希, 堀邊英夫(大阪公立大学)</p>

301	302	303	304
A5-5: Session Chairpersons: Christopher Ober (MSE, Cornell Univ.) and Hiroto Kudo (Kansai Univ.)	A10-3-3 13:55-14:15 Material lineup for Advanced Packaging and Next Generation MEMS Yasushi Kuroiwa(Tokyo Ohka Kogyo, Japan)	B2-1-2 13:55-14:20 圧力勾配スパッタリング法を用いたAIN膜成長における発光分光特性 米澤健 1, 2, 太田裕己 2, 吳準席 3, 古閑一憲 4, 白谷正治 4, 中谷達行 1(1 岡山理科大学, 2 ケニックス(株), 3 大阪公立大学, 4 九州大学)	14:10-14:20 break time
A5-5-1 14:10-14:40 Understanding and controlling resist chemical stochastics (Invited) Greg Denbeaux, Eshan Dilina Thilakarathna, Ashley Aldrin, Ankit Choudhary and Robert L. Brainard(College of Nanoscale Sci. and Eng., USA)	A10-3-4 14:15-14:35 High Performance Maskless Exposure Lithography enables Next Generation Advanced Packaging and MEMS Development Ksenija Varga 1, Bernd Dielacher 1, Thomas Uhrmann 1, Roman Holly 1, Tobias Zenger 1 and iHirokazu Kurotaki 2(1 EV Group E. Thallner, Germany and 2 EV Group Japan, Japan)	B2-1-3 14:20-14:45 Ultra Hydrophilic Diamond-like Carbon Coating on an Inner Surface of Small-diameter Long-sized Tube with Amino Group by AC High-Voltage Plasma Discharge Yuichi Imai 1,2, Hiroyuki Fukue 2, Tatsuyuki Nakatani 2, Shinsuke Kunitsugu 3, Noriaki Kuwada 4, Yasuhiro Fujii 2, Daiki Ousaka 2, Susumu Oozawa 2, Tomio Uchi 1(1 STRAWB, 2 Okayama Univ. of Sci., 3 Industrial Technol. Center of Okayama Pref., 4 Kawasaki Medical School, Japan)	B3-2: Session Chairperson: 神村共住(大阪工業大学)
A5-5-2 14:40-15:10 Measurements of acid diffusion speed and range in chemically amplified photoresists (Invited) Greg Denbeaux, Ruiwen Ai and Robert L. Brainard(College of Nanoscale Sci. and Eng., USA)	A10-3-5 14:35-14:55 (Online) Mechanical strength evaluation of Ni-W micro-gears fabricated by LIGA process Kanta Yamamoto, Masatoshi Takahashi, Kozo Tamada, Kana Okamoto, Sho Amano, Akinobu Yamaguchi, Yuichi Utsumi and Toru Yamasaki(Univ. of Hyogo, Japan)	14:45-14:55 break time	B3-2-1 14:20-14:40 高温マイクロバブルによる半導体ウエハの洗浄 (招待) 高橋 正好 1, 堀邊英夫 2, 宮崎伸介 3(1 東北大学, 2 大阪公立大学, 3 ダン・タクマ)
A5-5-3 15:10-15:40 Unlocking EUV yield beyond photoresist optimization (Invited) Nelson Felix(IBM, USA)	A10-4-1 15:10-15:40 Soft Micro/Nanostructured Materials for Flexible Sensors and Devices (Invited) Hyunhyub Ko(Ulsan Natl. Institute of Science and Technology (UNIST), Korea)	B2-2: Session Chairpersons: 吳準席(大阪公立大学), 中谷達行(岡山理科大学)	B3-2-2 14:40-15:00 (Online) 光ファイバースコープによる二流体ジェット噴射面に形成される液膜流れの膜厚分布の測定 渡部 真将 1, 水嶋祐基 1, 高橋広毅 2, 濱田聡美 2, 今井正芳 2, 真田俊之 1(1 静岡大学, 2 荏原製作所)
15:40-15:50 break time	A10-4-2 15:40-16:10 Artificial Visual Systems Enabled by Nanoscale Semiconductor Heterostructures (Invited) Johnny Ho(City Univ. of Hong Kong, Hong Kong)	B2-2-1 14:55-15:20 PECVD 法により堆積した SiO:CH 微粒子膜のはっ水特性に対する酸素導入量の影響 大野 真陽瑠 1, 中泉 有稀 1, 井上 泰志 1, 高井 治 2(1 千葉工業大学, 2 関東学院大学)	15:00-15:10 break time
A5-6: Session Chairpersons: John S Petersen (IMEC) and Takeo Watanabe (Univ. of Hyogo)	A10-4-3 16:10-16:30 (Online) Stretchable tactile pressure sensor for e-skin Yanpeng Li, Yan Xuan and Kuniharu Takei(Osaka Metropolitan Univ., Japan)	B2-2-2 15:20-15:45 格子点化合物の差異による高分子ナノフィルムの物性変化 近藤 伸一 1, 吉村和真 1, 土井直樹 1, 笹井泰志 2, 山内行玄 3, 葛谷昌之 1(1 岐阜薬科大学, 2 岐阜医療科学大学, 3 松山大学)	B3-3: Session Chairperson: 高橋正好(東北大学)
A5-6-1 15:50-16:10 EUV lithography patterning targeting low-dose and high-resolution using Multi-Trigger Resist Alex Robinson 1, Carmen Popescu 1, Greg O'Callaghan 1, Alex McClelland 1, Catherine Storey 1, John Roth 2 and Ed Jackson 2(1 Univ. of Birmingham and 2 Nano-C, UK)	A10-4-4 16:10-16:30 Design of High-Sensitive EUV resist materials based on polyacetals Hiroyuki Maekawa 1, Hiroto Kudo 1, Hiroki Yamamoto 2, Yutaro Iwashige 3, Kazumasa Okamoto 3 and Takahiro Kozawa 3(1 Kansai Univ., 2 Natl. Inst. for Quantum and Radiological Sci. and Technol. and 3 Osaka Univ., Japan)	Cancel B2-2-3—15:45-16:10 プラズマ技法を利用した NSAIDs の高分子プロドラッグ製剤の設計について 山内 行玄 1, 土井 直樹 2, 近藤 伸一 2, 笹井 泰志 3, 葛谷 昌之 4(1 松山大学, 2 岐阜薬科大学, 3 岐阜医療科学大学, 4 中部学院大学)	B3-3-1 15:10-15:30 レーザー照射とオゾン水処理を用いたレジスト除去と評価 (招待) 神村共住 1, 安國良平 1, 小泉敦司 1, 中尾友哉 1, 水谷匡希 2, 吉村政志 3, 堀邊英夫 2(1 大阪工業大学, 2 大阪公立大学, 3 大阪大学)
A5-6-2 16:10-16:30 Design of High-Sensitive EUV resist materials based on polyacetals Hiroyuki Maekawa 1, Hiroto Kudo 1, Hiroki Yamamoto 2, Yutaro Iwashige 3, Kazumasa Okamoto 3 and Takahiro Kozawa 3(1 Kansai Univ., 2 Natl. Inst. for Quantum and Radiological Sci. and Technol. and 3 Osaka Univ., Japan)	A10-4-3 16:10-16:30 (Online) Stretchable tactile pressure sensor for e-skin Yanpeng Li, Yan Xuan and Kuniharu Takei(Osaka Metropolitan Univ., Japan)	B3-3-2 15:30-15:50 原子状水素によるフッ素系有機膜の表面改質 (招待) 部家彰, 大塚英雄, 住友弘二(兵庫県立大学)	B3-3-3 15:50-16:10 タングステンフィラメントで活性化させた H ₂ O ₂ 混合ガスによるポリスチレン系ポリマーの除去速度に対する PAC の影響 山本雅史 1, 秋田航希 1, 馬庭知宏 1, 浅川万知 1, 鹿間共一 1, 長岡史郎 1, 梅本宏信 2, 堀邊英夫 3(1 香川高等専門学校, 2 静岡大学, 3 大阪公立大学)

301	302	303	304
<p>A5-6-3 16:30-16:50 (Online) Evaluating the role of photoacid generator and quencher loadings on EUV film homogeneity using Nano-projectile SIMS <u>Michael J Eller</u> 1, Jander Cruz 1, Stanislav V. Verkhoturov 2 and Emile A. Schweikert 2(1 California State Univ. and 2 Texas A and M Univ., USA)</p>	<p>A10-4-4 16:30-16:50 (Online) Aggregation of Au colloids using surface acoustic waves <u>Shunya Saegusa</u> 1, Tsunemasa Saiki 2, Satoshi Amaya 3, Takao Fukuoka 4, Yukako Takizawa 2, Keisuke Yoshiki 1, Yuichi Utsumi 1, Akinobu Yamaguchi 1 and Kaito Fujitani 1(1 Univ. of Hyogo, 2 Hyogo Pref. Inst. of Industrial Technol., 3 Univ. of Tokyo and 4 Kyoto Univ., Japan)</p>		
<p>A5-6-4 16:50-17:10 EUV Polymeric Resist with Various Functional Units <u>Bilal Abbas Naqvi</u> 1,2, Yui Takata 1, Satoshi Enomoto 2, Danilo De Simone 2, Takahiro Kozawa 3, Stefan De Gendt 1,2(1 KU Leuven, 2 imec, Belgium, 3 Osaka Univ. and 4 Toyo Gosei, Japan)</p>			
<p>17:25-17:55 PST Award Ceremony</p>			
<p>18:00-20:00 BANQUET at Room103</p>			

JUNE 30, 2023 Registration(9:00-15:00)

301	302	303	304
A4: Session Chairpersons : Tomoki Nagai (JSR) and Takahiro Kozawa (Osaka Univ.)	A8-1: Session Chairpersons : Robert D. Allen (The Natl. Renewable Energy Laboratory) and Masaru Mukai (Yokohama Natl. Univ.)		
A4-1 09:00-09:30 Quantum Chemistry in Quantum Computing using Real Quantum Device; A Use Case for Photoresist Material Development (Keynote) <u>Tomoki Nagai</u> (JSR Corporation, Japan)	Cancel A8-1-1 09:00-09:30 Advancing Macromolecular Synthesis for 3D Printing (Invited) Valentin A. Bobrin, Xiaobing Shi, Zhiheng Zhang, Kenny Lee, Jin Zhang, Nathaniel Corrigan, and Cyrille Boyer(Univ. of New South Wales, Australia)		
A4-2 09:30-10:00 Relationship between defect risks and effective reaction radius for deprotection in chemically amplified resist process for extreme ultraviolet lithography (Invited) <u>Takahiro Kozawa</u> (Osaka Univ., Japan)	A8-1-2 09:30-10:00 (Online) Photoalignment patterning of liquid crystals by scanning wave photopolymerization (Invited) <u>Atsushi Shishido</u> (Tokyo Inst. of Technol., Japan)		
A4-3 10:00-10:30 (Online) Molecular Dynamics Simulations for Revealing Concerted Phenomena of Chemical Reactions and Mechanical Actions in Chemical Mechanical Polishing Processes (Invited) <u>Momiji Kubo</u> (Tohoku Univ., Japan)	A8-1-3 10:00-10:30 3D printing of flexible conductive polymer based on poly(ethylenedioxythiophene) (Invited) <u>Masaru Mukai</u> , Mai Takenouchi and Shoji Maruo(Yokohama Natl. Univ., Japan)		
A4-4 10:30-11:00 Molecular Dynamics Simulation of Pattern Formation for Negative-Type Resists in Electron Beam Lithography (Invited) Kaito Yamada, Yoshihiko Hirai and <u>Masaaki Yasuda</u> (Osaka Metropolitan Univ., Japan)	10:30-10:45 break time A8-2: Session Chairpersons : Cyrille-Boyer (The University of New South Wales) and Masaru Mukai (Yokohama Natl. Univ.)		
A4-5 11:00-11:30 Extremely Large-Scale Molecular Dynamic Simulations for Predicting Polymer Structure Formed at Atomistic and Mesoscopic Length Scales (Invited) <u>Kenji Yoshimoto</u> (Toray Industries, Japan)	A8-2-1 10:45-11:05 Development of Photo-curable Resin for 3D Printing Using Acrylic Monomers with Bisphenol Skeleton Kotaro Kobayashi 1, Daisuke Aoki 1, Tatsuo Taniguchi 1, <u>Takashi Karatsu 1</u> , Nobuaki Takane 2, Hiroaki Okamoto 2, Koichi Fujii 3, Yuki Yamauchi 3(1 Chiba Univ., 2 Okamoto chemical ind., 3 Tokyo Metrop. Ind. Tech. Res. Institute, Japan)		
	A8-2-2 11:05-11:25 (Online) Development of High Accurate Multi-Step Deep X-ray Exposure System Using Two-axial PZT Actuators Taki Watanabe, Sho Amano, Kaito Fujitani, Akinobu Yamaguchi and Yuichi Utsumi(Univ. of Hyogo, Japan)		
	A8-2-3 11:25-11:45 Characterization of Single-cell Encapsulation in Photo-curable Gel for Image Based Cell Screening <u>Venkatesh Kumar Panneer Selvam</u> , Tanmay Debnath, Shunya Okamoto, Takayuki Shibata and Moeto Nagai(Toyohashi Univ. of Technol., Japan)		
	A8-2-4 11:45-12:05 (Online) Study of Dihedral-Corner-Reflector-Array Fabrication Process Using Soft X-ray Deep X-ray Lithography Taki Watanabe 1, Sho Amano 1, Shinya Izawa 1, Satoshi Maekawa 2, Keisuke Yoshiki 3, Akinobu Yamaguchi 1 and Yuichi Utsumi 1(1 Univ. of Hyogo and 2 Parity Innovations and 3 Inst. for Res. Promotion and Collaboration, Japan)		

301	302	303	304
<p>A3-1: Session Chairpersons : Teruaki Hayakawa (Tokyo Inst. of Technol.) and Seiji Nagahara (Tokyo Electron)</p>			<p>B3-4: Session Chairperson : 松浦 幸仁 (奈良高専)</p>
<p>A3-1-1 13:00-13:40 Harnessing Directed Self-Assembly of Block Copolymers and Nanoscale Materials for Enhancing Device Performances (Keynote) <u>Yeon Sik Jung</u>(Korea Advanced Institute of Science & Technology (KAIST), Korea)</p>	<p>A11-1: Session Chairpersons : Haruyuki Okamura (Osaka Metropolitan Univ.) and Akinori Shibuya (Fujifilm)</p>	<p>A2-1: Session Chairpersons : Yukihiro Kanda and Shusuke Satoh</p>	<p>B3-4-1 13:00-13:20 アゾベンゼン系アモルファス分子材料を含む混合ガラス微粒子の光メカニカル転回運動 中野 英之, 濁川創(室蘭工業大学)</p>
<p>A3-1-2 13:40-14:10 (Online) Driving Innovation in Patterning with Directed Self Assembly (Keynote) <u>Florian Gstrein</u>(Intel, USA)</p>	<p>A11-1-1 13:30-13:50 (Online) Photo-rearrangement reaction of tribenzylthiocyanurate and refractive index modulation <u>Akira Takahashi</u>, Takeshi Maehara and Atsushi Kameyama(Kanagawa Univ., Japan)</p>	<p>A2-1-1 13:30-14:00 Liver sinusoidal wall coating polymer to promote the efficacy of gene therapy drugs (Invited) <u>Kensuke Osada</u>(Natl. Inst. for Quantum Sci. and Technol., Japan)</p>	<p>B3-4-2 13:20-13:40 (Online) 2-ヒドロキシビリジリル基を有するモノマーの合成と光接着材料への応用 古谷 昌大, 笛吹渉, 西端千遼(福井工業高等専門学校)</p>
			13:40-13:50 break time
	<p>A11-1-2 13:50-14:10 Networked Polyphthalaldehydes Linked with Oxime Ether and Urethane Units and Their Photo-induced Depolymerization <u>Kanji Suyama</u> 1, Hirokazu Hayashi 2 and Hideki Tachi 2(1 Osaka Metropolitan Univ. and 2 Osaka Res. Inst. of Industrial Sci. and Technol., Japan)</p>	<p>A2-1-2 14:00-14:30 Preparation of drug-loaded capsule-type artificial bone for treatment of bone defects (Invited) <u>Yuuhei Komatsu</u> and Akihiko Kikuchi(Tokyo Univ. of Sci., Japan)</p>	<p>B3-5: Session Chairperson : 中野 英之 (室蘭工大)</p>
<p>A3-1-3 14:10-14:40 Formation and scalability of hexagonal hole pattern by DSA (Invited) <u>Makoto Muramatsu</u> 1, Takanori Nishi 1, Kiyohito Ito 2, Yoshihito Takahashi 2, Yasunori Hatamura 2, Takahiro Kitano 3 and Tomohiro Iwaki 4(1 Tokyo Electron Kyushu, 2 Tokyo Electron Miyagi, 3 Tokyo Electron and 4 Micron Japan)</p>	<p>A11-1-3 14:10-14:30 Influence of polymer environments on the morphology of self-assembled aggregates <u>Mina Han</u>(Kongju Natl. Univ., Korea)</p>		<p>B3-5-1 13:50-14:10 Preparation of a polysilane-methacrylate tercopolymer <u>Yukihito Matsuura</u> 1, Chihiro Amasaki 1, Masanobu Ohkita 2, Tomoharu Tachikawa 2, (1 Natl. Inst. of Technol., Nara College and 2 Osaka Gas, Japan)</p>
	<p>A11-1-4 14:30-14:50 Photo-thermal Dual Cured Blends of TiO₂diarylfuorene Films with High Refractive Indices <u>Haruyuki Okamura</u> 1, Keiko Minokami 2, Hirotsugu Kuratani 2 and Shinsuke Miyachi 2(1 Osaka Metropolitan Univ. and 2 Osaka Gas Chemicals, Japan)</p>	<p>A2-1-3 14:30-14:50 Unpacking fullerene C 60 molecular cage for DNA targeted nanoparticles <u>Ali A Almagwashi</u> 1 and Aly N Fouda 1,2(1 King Abdulaziz Univ. and 2 Suez Canal Univ., Saudi Arabia)</p>	<p>B3-5-2 14:10-14:30 側鎖かご型シルセスキオキサン含有ネガ型フォトリソの合成と感光特性 斧田 遥夏 1, 高橋 明 1, 伊藤 信人 2 佐藤 和也 2, 亀山 敦 1 (1 神奈川大学, 2 太陽インキ製造)</p>
14:40-15:00 break time	14:50-15:00 break time		<p>B3-5-3 14:30-14:50 光インプリント技術を用いた生体吸収性材料の表面ナノパターンニング加工 <u>安藤 麻乃</u> 1, 山岸里緒 1, 三浦早耶香 1, 八窪優奈 1, 村下亜弥 1, 杉野直人 2, 亀田隆夫 2 横山義之 3, 安田佳織 3, 竹井敏 1 (1 富山県立大学, 2 三光合成, 3 富山県産業技術研究開発センター)</p>
<p>A3-2: Session Chairpersons : Teruaki Hayakawa (Tokyo Inst. of Technol.) and Seiji Nagahara (Tokyo Electron)</p>	<p>A11-2: Session Chairpersons : Haruyuki Okamura (Osaka Metropolitan Univ.) and Kanji Suyama (Osaka Metropolitan Univ.)</p>	<p>A2-1-4 14:50-15:20 Cell-transistors detecting disease-related membrane proteins (Invited) <u>Miyuki Tabata</u> and Yuji Miyahara(Tokyo Medical and Dental Univ., Japan)</p>	
<p>A3-2-1 15:00-15:30 Self-assembly of bio-sourced block copolymer systems: Ultra-nanostructured thin films (Invited) <u>Redouane Borsali</u> 1,2(Grenoble Alpes Univ. and CNRS, CERMAV, France)</p>	<p>A11-2-1 15:00-15:20 Manipulation of Polymer Solubility: Crosslinking, Thermal Activation and Variable-Temperature Bakes Jacob Sitterly, Justin Nhan and <u>Robert L Brainard</u>(SUNY Polytechnic Inst., USA)</p>	<p>A2-1-5 15:20-15:40 Non-enzymatic glucose detection based on gold nanoparticles coated polyaniline/polyvinyl acetate composite films by impedance spectroscopy <u>QI KANG</u>, Hiroaki Takehara and Takanori Ichiki(Univ. of Tokyo, Japan)</p>	
<p>A3-2-2 15:30-15:50 Structural control of higher-χ PS-b-PMMA derivatives by directed self-assembly in polymer thin films <u>Shinsuke Maekawa</u> 1, Takehiro Seshimo 2, Takahiro Dazai 2, Kazufumi Sato 2, Yuta Nabae 1 and Teruaki Hayakawa 1(1 Tokyo Institute of Technology and 2 Tokyo Ohka Kogyo, Japan)</p>	<p>A11-2-2 15:20-15:40 Switching the Solubility of Polymers Using Intermolecular Reactions and Diffusion of Small Molecules Jacob Sitterly, Justin Nhan, Moira C D Niluxshun, Bharti Sangwan, Stephen Smith, Douglas Macleod and <u>Robert L Brainard</u>(SUNY Polytechnic Inst., USA)</p>		
	<p>A11-2-3 15:40-16:00 Physical and chemical drying of coatings with NIR-Absorbers to replace oven technologies <u>Sascha Driesen</u>, Nicolai Meckbach and Bernd Strehmel(Niederrhein Univ. of Applied Sci., Germany)</p>	15:40-15:50 break time	

301	302	303	304
		A2-2: Session Chairpersons : Takanori Ichiki (Univ. of Tokyo) and Miyuki Tabata (Tokyo Medical and Dental Univ.)	
A3-2-3 15:50-16:20 Inorganic nanostructures from block copolymer templates by means of sequential infiltration synthesis: fundamental issues and perspectives (Invited) <u>Michele Perego</u> (CNR-IMM Unit of Agrate Brianza, Italy)	A11-2-4 16:00-16:20 Novel Photoinitiator System for Simultaneous Physical drying and Free Radical Polymerization of Water-Borne Dispersions with Near-Infrared Excitation <u>Lukas Appelhoff</u> 1, Nicolas Hornemann 2, Remco Fokink 3, Thomas Kodger 3 and Bernd Strehmel 1(1 Niederrhein Univ. of Applied Sci., 2 ACTEGA Terra, Germany and 3 Wageningen Univ. & Res., The Netherland)	A2-2-1 15:50-16:20 Electrophoretic adhesion of conductive polymers and hydrogels for fabrication of Photothermal actuator (Invited) <u>Taka-Aki Asoh</u> (Tokyo Univ. of Sci., Japan)	
16:20-16:40 break time	A11-2-5 16:20-16:40 The Design and Synthesis of New NIR active Sensitizers for Use in Photochemical Processes and Controlled Polymerizations <u>Nicolai Meckbach</u> , Sascha Driesen and Bernd Strehmel(Niederrhein Univ. of Applied Sci., Germany)	A2-2-2 16:20-16:40 Free-flow electrophoresis device for nanoparticle separation <u>Shusuke Sato</u> 1 and Takanori Ichiki 1,2(1 iCONM and 2 Univ. of Tokyo, Japan)	
A3-3: Session Chairpersons : Takehiro Seshimo (Tokyo Ohka Kogyo) and <u>Makoto Muramatsu</u> (Tokyo Electron)			
A3-3-1 16:40-17:10 Block copolymer nanopatterning for semiconductor and non- semiconductor applications (Invited) <u>Sang Ouk Kim</u> (KAIST, Korea)		A2-2-3 16:40-17:00 (Online) Vertical chemical unit operation using micro capillary bundle structure for immunoabsorbent assay <u>Mana Honkawa</u> , Isao Kawaji, Sho Amano, Akinobu Yamaguchi, Masahiro Takeo and Yuichi Utsumi(Univ. of Hyogo, Japan)	
A3-3-2 17:10-17:30 ABC/ACB Triblock Copolymers Composed of Polystyrene and Polymethacrylates by Living Anionic Polymerization and Side Chain Modification <u>Ryota Uehara</u> 1, Shinsuke Maekawa 1, Takehiro Seshimo 2, Takahiro Dazai 2, Kazufumi Sato 2, Yuta Nabae 1 and Teruaki Hayakawa 1(1 Tokyo Institute of Technology and 2 Tokyo Ohka Kogyo, Japan)		A2-2-4 17:00-17:20 Optical Oxygen Measurement using Microneedle of Bioabsorbable Polymer <u>Yukihiro Kanda</u> 1, Hiroaki Takehara 1,2 and Takanori Ichiki 1,2(1 Univ. of Tokyo and 2 iCONM, Japan)	
A3-3-3 17:30-17:50 PS-b-PMMA derivatives with precisely introduced hydroxy groups for neutral layers <u>Riku Mizusaki</u> 1, Shinsuke Maekawa 1, Takehiro Seshimo 2, Takahiro Dazai 2, Kazufumi Sato 2, Yuta Nabae 1 and Teruaki Hayakawa 1(1 Tokyo Institute of Technology and 2 Tokyo Ohka Kogyo, Japan)			
A3-3-4 17:50-18:20 (Online) Directed self-assembly for rectification of extreme ultraviolet lithography patterns: exploring the benefits and challenges (Invited) <u>Lander Verstraete</u> , Hyo Seon Suh, Julie Van Bel, Remi Vallat and Philippe Bezaud(imec, Belgium)			
18:20-18:30 Closing Remarks			