

Program

August 24th (Thurs.)

17:45-	Registration (except all students)
18:00-20:00	Welcome Reception (except all students)

August 25th (Fri.), Room A pp.1-22

Chair :Prof. Do-Kyun KWON

09:00-09:35	1. Plenary	The current status and prospects of metal Additive Manufacturing in Japan, <u>Hideki Kyogoku</u> , Kindai University, Japan
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Chair :Prof. Masaaki Nakai

09:35-10:00	2. Invited	Effect of Cr ₂ O ₃ and TiO ₂ on crystallization behavior in SiO ₂ -Al ₂ O ₃ -CaO-MgO glass-ceramic system, <u>Woo-Gwang JUNG</u> , School of Materials Science and Engineering, Kookmin University, Korea
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Chair :Prof. Yoichi KAMIHARA

10:15-10:40	3. Invited	Magnetic Energy Harvesting with Magnetostrictive/Piezoelectric Single Crystal Fiber Composite, <u>Dae-Yong JEONG</u> , Department of Materials Science and Engineering, Inha University, Korea
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10:40-11:05	4. Invited	Understanding Ion Transport in Epoxy-based Polymer Electrolytes, <u>U Hyeok CHOI</u> , Department of Polymer Engineering, Pukyong National University, Korea
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11:05-11:30	5. Invited	Novel Dielectric Composite Films Incorporated with Two-Dimensional Oxide Nanosheet Fillers, <u>Do-Kyun KWON</u> , Department of Materials Engineering, Korea Aerospace University, Korea
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Chair :Prof. Dae-Yong JEONG

11:30-11:55	6. Invited	Development of poly(vinyl alcohol) hybrid gel as artificial articular cartilage material, <u>Seido Yarimitsu</u> ¹ , Saori Sasaki ² , Teruo Murakami ³ , Atsushi Suzuki ⁴ , ¹ Faculty of System Design, Tokyo Metropolitan University, ² Institute for Materials Chemistry and Engineering, Kyushu University, ³ Faculty of Fukuoka Medical Technology, Teikyo University, ⁴ Graduate School of Environment and Information Sciences, Yokohama National University, Japan
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11:55-12:50 Lunch

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14:25-14:50	7. Invited	Adsorption of amino acids on atomically flat surface of oxides in water solution, <u>Hiroaki Nishikawa</u> ¹ , Ayaka Saito ² , ¹ Faculty of Biology-Oriented Science and Technology, Kindai University, ² Graduate School of Biology-Oriented Science and Technology, Kindai University, Japan
14:50-15:15	8. Invited	Ab initio calculations on the transport properties of ZrCuSiAs-type thermoelectric materials with lattice defects, Taku HIBINO, Tatsuki KATO, <u>Yoichi KAMIHARA</u> , Department of Applied Physics and Physico-informatics, Keio University, Japan
Chair :Prof. Kazunori Asano		
15:30-15:55	9. Invited	Development of metallic biomaterials with changeable elastic modulus using deformation-induced phase transformation, <u>Masaaki Nakai</u> ¹ , Mitsuo Niinomi ²⁻⁵ , ¹ Kindai University, ² Tohoku University, ³ Meijo University, ⁴ Osaka University, ⁵ Nagoya University, Japan
15:55-16:20	10. Invited	New finding of electronic structure-activity relationship in oxygen evolution catalysts, <u>Shigeto Hirai</u> ¹ , Shunsuke Yagi ² , Wei-Tin Chen ³ , Tomoya Ohno ¹ , Hisao Suzuki ⁴ , Takeshi Matsuda ¹ , ¹ Kitami Institute of Technology, ² Institute of Industrial Science, The University of Tokyo, ³ Center for Condensed Matter Sciences, National Taiwan University, ⁴ Research Institute of Electronics, Shizuoka University, Japan
16:20-16:45	11. Invited	ZnO Coated Ball Bearing for Improvement of Fuel Consumption Rate of Small Gas Turbine System, <u>Masahiro Tosa</u> , Michiko Sasaki, Masahiro Goto, Akira Kasahara, Hiroshi Suzuki and Hiroshi Honda, National Institute for Materials Science, Japan

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August 25th (Fri.), Room B

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Chair :Prof. Woo-Gwang JUNG

10:15-10:40	12. Invited	Electronic properties of charge transfer heterointerface between LaFeO ₃ and SrTiO ₃ , <u>Hiroaki Nishikawa</u> , Faculty of Biology-Oriented Science and Technology, Kindai University, Japan
10:40-11:05	13. Invited	Dimensional stability and diffusion kinetics of epoxy composites immersed in acidic solutions, <u>Masatoshi Kubouchi</u> (Jonathon D. Tanks), Yoshihiko Arao, Dept. of Chemical Science and Engineering, Tokyo Institute of Technology, Japan
11:05-11:30	14. Invited	Wear Behavior of Carbon Fiber-Reinforced Aluminum Alloy Composites under Dry Sliding Condition, <u>Kazunori Asano</u> and Muhammad Faiz Bin Zainuddin, Kindai University, Japan

Chair :Prof. Dongjin BYUN

11:30-11:55	15. Invited	Evaluation of the Physical Characteristics of Sulfamate Ni-Mn Plating, <u>Genki Kanamori</u> ^{1,2} , Keichiro Yasuda ² , Mitsuhiro Watanabe ¹ , Hideo Honma ¹ , Osamu Takai ¹ , ¹ Kanto-gakuin univ., Japan, ² OGIC Technologies Co., Ltd., Japan
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11:55-12:50 Lunch

14:25-14:50	16. Invited	Dynamic encapsulation of bowl-shaped π -conjugated molecules into single-walled carbon nanotubes, K. Mouri, Y. Joko, R. Sasaki, and <u>K. Shintani</u> , Department of Mechanical Engineering and Intelligent Systems, Graduate School of Informatics and Engineering, University of Electro-Communications, Japan
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14:50-15:15	17. Invited	Preparation of boron-doped diamond films on cemented tungsten carbide, Kunio Saito ^{1,2} , Atsuo Kawana ¹ , Asuka Suzuki ² , <u>Yukihiro Sakamoto</u> ³ , ¹ Japan Coating Center Co.,Ltd, Japan, ² Chiba Institute of Technology graduate school, Japan, ³ Chiba Institute of Technology, Japan
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Chair :Prof. Kei Oya		
15:30-15:55	18. Invited	Corrosion Behavior of Y_2SiO_5 Environmental Barrier Coatings by CMAS under High Temperature Exposure, <u>Byung-Koog Jang</u> ¹ , Shunkichi Ueno ² and Hyung-Tae Kim ³ , ¹ National Institute for Materials Science, Japan, ² College of Engineering, Nihon University, Japan, ³ Korea Institute of Ceramic Engineering and Technology, Korea
15:55-16:20	19. Invited	Self-Organized Nanoporous Niobium Oxide Electrodes for Fast Reversible Lithium Storage, <u>Jae-Hun KIM</u> , School of Advanced Materials Engineering, Kookmin University, Korea

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August 25th (Fri.) Poster session at Auditorium,

11:55-12:50 Lunch

12:50-14:20, 90 min. for discussion

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P1	Plasma surface modification of medical biomaterials, <u>Koki Niimura</u> , Hiroki Watanabe, Satoshi Koya, Masaaki Niwa, Mitsuya Motohashi, Department of Engineering, Tokyo Denki University, Japan
P2	Chemical stability of pullulan thin film employing methylene blue dye for active oxygen species, <u>Yenchit Saranya</u> , Yuta Tadokoro, Satoru Iwamori, Tokai University, Japan
P3	Active oxygen measurement in sterilization bag by using organic thin film employing methylene blue dye and electron spin resonance (ESR), <u>Yuta Tadokoro</u> , Yenchit Saranya, Satoru Iwamori, Tokai University, Japan
P4	Effect of Cr, Mo and Ti addition on microstructure and mechanical properties of Nb-Si based alloys, <u>Tsuyoshi Uemura</u> and Kazunori Asano, Graduate school of science and engineering, Kindai university, Japan
P5	Effect of different natural graphite on production graphene, <u>Fumiya MORI</u> , Masatoshi KUBOUCHI, Yoshihiko ARAO, School of Materials and Chemical Technology, Department of Chemicals Science and Engineering, Tokyo Institute of Technology, Japan
P6	Fabrication of Inconel 718 superalloy by Additive Manufacturing, <u>Yusuke Tachibana</u> ¹ , Toshi-Taka Ikeshoji ² , Kazuya Nakamura ³ , Makiko Yonehara ² , Hideki Kyogoku ² , ¹ Graduate School, Kindai University, Japan, ² Kindai University, ³ TRAFAM, Japan
P7	Influence of process parameters on densification of pure copper, <u>Ken Imai</u> ¹ , Toshi-Taka Ikeshoji ² , Kazuya Nakamura ³ , Yuji Sugitani ⁴ , Motonori Nishida ⁴ , Hideki Kyogoku ² , ¹ Graduate School, Kindai University, Japan, ² Kindai University, Japan, ³ TRAFAM, ⁴ Fukuda Metal Foil & Powder Co., Japan
P8	Bonding strength between metal and resin with anchor effect, <u>Masaru Takahashi</u> , MEC COMPANY LTD., Japan

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P9	Efficient and Simple Aqueous-Phase Exfoliation of Muscovite Nanosheets in The Presence of Polyvinylpyrrolidone, <u>Hyun Jeong Bae</u> , Yumin Goh, Hyun Seung Jo, Do-Kyun Kwon, Department of Materials Engineering, Korea Aerospace University, Korea
P10	Study on exfoliation mechanism of muscovite using Polyvinylidene fluoride having different molecular weight, <u>Yumin GOH</u> , Hyun Jeong BAE, Baek Hyun KIM, Do-kyun KWON, Department of Materials Engineering, Korea Aerospace University, Korea
P11	Electrochemical Reaction Mechanism of Zn-TiOx-C Nanocomposite Anode Materials for Li-ion Batteries, <u>Hyerang CHOI</u> , Jae-Hun KIM, School of Advanced Materials Engineering, Kookmin University, Korea
P12	Niobium Oxide Nanoparticles with Amorphous Carbon Shell for Hybrid Supercapacitor Electrodes, <u>Kyungbae KIM</u> , Jae-Hun KIM, School of Advanced Materials Engineering, Kookmin University, Korea
P13	Surface modification of poly(dimethylsiloxane) via active oxygen species and ultraviolet lights, <u>Takumi Suto</u> ¹ , Kazuki Hosoya ¹ , Ryo Wakayama ¹ , Kei Oya ^{1,2} , Satoru Iwamori ¹ , ¹ Tokai University, Japan, ² Seikei University, Japan
P14	Structure control titanium dioxide layer in dye-sensitized solar cells (DSC) fabricated using electrostatic ink jet technology, <u>Yuki Nakamura</u> ¹ , Koji Tomita ¹ , Shinjiro Umezu ² , Satoru Iwamori ¹ , ¹ Tokai University, Japan, ² Waseda University, Japan
P15	Transport properties of high sintered density layered oxychalcogenide, LaCuSeO, <u>Tatsuki Kato</u> ¹ , Chul-Ho Lee ² , Kunihiro Kihou ² , Yoichi Kamihara ¹ , ¹ Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology, Keio University, Japan, ² National Institute of Advanced Industrial Science and Technology, Japan
P16	Investigation for kesterite-stannite photovoltaics: Stability and band gaps of the Cu ₂ (Zn, Fe)SnS ₄ alloy, <u>Marie Hashimoto</u> , Masanori Matoba, Yoichi Kamihara, Manami Nakanishi, Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology, Keio University, Japan
P17	Theoretical research on dissociation of N ₂ for designing new ammonia catalysis supporting Ru, <u>Manami Nakanishi</u> , Masanori Matoba, Yoichi Kamihara, Department of Applied Physics and Physico-Informatics, Faculty of Science and Technology,

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	Keio University, Japan
P18	Friction Tester under Changing Normal Load at High Temperature, <u>Masahiro Tosa</u> , Michiko Sasaki, Masahiro Goto, Akira Kasahara, Hiroshi Suzuki, and Hiroshi Honda, National Institute for Materials Science, Japan
P19	Characteristics and cellular adhesiveness of polymer surface modified by active oxygen, <u>Kazuki Hosoya</u> ¹ , Kazunari Takahashi ¹ , Takumi Suto ¹ , Kei Oya ^{1,2} , and Satoru Iwamori ¹ , ¹ Tokai University, Japan, ² Seikei University, Japan
P20	Surface analysis of N ₂ plasma treated sapphire substrate for AlN buffer layer, <u>Woo Weop JEONG</u> , Dea-sik KIM, Seung Hee CHO, Cheol KIM, Hyun-A KO, Doo Won LEE, Dongjin BYUN, Department of Materials Science and Engineering, Korea University, Korea
P21	Effect of AlN Buffer Crystalline on Quality of GaN Films Grown on Sapphire Substrate, <u>Dae-sik KIM</u> , Woo Seop JEONG, Seunghee CHO, Cheol KIM, Hyun-a Ko, Doo Won LEE, Dongjin BYUN, Department of Materials Science and Engineering, Korea University, Korea
P22	Microstructure and Electrical Characteristics of Ferroelectric PZT Film Prepared By Aerosol-deposition, <u>Chun-Kil Park</u> , Jong-Jin Choi, Byung-Dong Hahn, Jungho Ryu, Dae-Yong Jeong, School of Materials Engineering, Inha University, Korea
P23	Improvement Glass Bonding Properties with Reactive Bonding Layer Fabricated by Aerosol Deposition, <u>Ji-Ho Lim</u> , Jin-Woo Kim, Sunghwan Cho, Hyung Sun Kim, Young-Min Kong and Dae-Yong Jeong, School of Materials Engineering, Inha University, Korea
P24	Establishment of process to separate epitaxial functional oxide thin films from substrates, Shinji Umatani ¹ , <u>Hiroaki Nishikawa</u> ² , ¹ Graduate School of Biology-Oriented Science and Technology, Kindai University, Japan, ² Faculty of Biology-Oriented Science and Technology, Kindai University, Japan
P25	Gas sensing characteristics of low melting point metal oxide nano-particle thin film by quartz crystal microbalance (QCM) method, <u>Masahiro Kinoshita</u> ¹ , Prabakaran Shankar ¹ , Sergei Kulinich ¹ , Kazutoshi Noda ² , Satoru Iwamori ¹ , ¹ Tokai University, Japan, ² AIST, Japan

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P26	Optical characteristics of sputtered PTFE thin film coated onto poly(dimethylsiloxane) substrate, <u>Ryo Wakayama</u> , Kittaphol Kittiboonlert, Yuta Simoyama, Kazuki Hosoya, Satoru Iwamori, Tokai University, Japan
P27	Temperature and substrate dependent conductivities of graphene using terahertz time-domain spectroscopy, <u>Shohei Ohashi</u> ¹ , Iwao Kawayama ¹ , Shohei Kameo ¹ , Filchito Renee Bagsican ¹ , Hironaru Murakami ¹ , J. Kono ² , Robert Vajtai ² , Pulickel M. Ajayan ² , Masayoshi Tonouchi ¹ , ¹ Institute of Laser Engineering, Osaka University, Japan, ² Rice University, USA

Program

August 26th (Sat.), Room A		pp. 93-102
Chair :Prof. Byung-Koog Jang		
09:00-09:35	20. Plenary	Synthesis, Electrochemical Properties of Mixed Sn-S Hybrid Nanocomposite as a Negative Electrode for Na-ion Battery, <u>Dokyoung KIM</u> , Department of Materials Science and Engineering, Korea Advanced Institute of Science and Technology (KAIST), Korea
Chair :Prof. U Hyeok CHOI		
09:35-10:00	21. Invited	Fabrication of MEMS Devices with Anodic Aluminum Oxide Film, Makoto Jinsenji ^{1,2} , <u>Chisa Fukuda</u> ¹ , Yoshiyuki Nishimura ¹ , Osamu Takai ² , Mark Bachman ³ , Hsiang Yu Chan ⁴ , G. P. Li ⁵ , ¹ OM Sangyo Co., Ltd., Japan, ² Graduate School of Engineering, and Material and Surface Engineering Research Institute, Kanto Gakuin University, Japan, ³ Integra Devices, LLC, USA, ⁴ Department of Electrical Engineering and Computer Science, University of California, Irvine, USA, ⁵ California Institute of Telecommunications and Information Technology, University of California, Irvine, USA
	22.	withdrawn
10:15-10:40	23. Invited	Polarization imaging of GaN using laser terahertz emission microscopy, <u>Iwao Kawayama</u> , Institute of Laser Engineering, Osaka University, Japan
Chair :Prof. Shigeto Hirai		
10:40-11:05	24. Invited	Formation of Air Void on Patterned Sapphire Substrate by Selective Photoresist Carbonization, <u>Dongjin BYUN</u> , Department of Materials Science and Engineering, Korea University, Korea
11:05-11:30	25. Invited	Strategies for Efficient Photoelectrochemical Water Splitting Using TiO ₂ Nanorod Arrays: A Case of Non-metal Doping and Earth-Abundant CZTS NPs Sensitization, <u>Jin-Hyeok KIM</u> , Department of Materials Science and Engineering, Chonnam National University, Korea
11:30-11:45	Awarding ceremony, Prof. Hiroaki Nishikawa	
11:45-11:50	Closing remark, Prof. Byung-Koog Jang	
11:50-13:00 Lunch		