2021/09/29 10:00

Sp26 2021/09/29 10:00 - 12:00 Rm1

3Rm101-05 Sp26. Surface modification & surface analysis (Organizer: N.Matsuda, N.Fukuda)

Chairperson:Naoki Matsuda(AIST), Nobuko Fukuda(AIST)

3Rm101-05-01 10:00 - 10:25 Invited

Sensor Arrays for Label-Free Detection of Nucleotide Biomarkers towards Healthcare and Environment Management

*Hiroshi Aoki[1]

1. National Institute of Advanced Industrial Science and Technology (AIST) (Japan)

3Rm101-05-02 10:25 - 10:50 Invited

Surface Functionalization of Carbon and Polymer Materials by Photochemical Modification and Nanocoating Technology

*Takako Nakamura[1]

1. National Institute of Advanced Industrial Science and Technology (Japan)

3Rm101-05-03 10:50 - 11:15 Invited

Controlling Nanostructure of Electrode Surface toward Efficient Enzymatic Bioelectrocatalysis

*Yasuhiro Mie[1]

1. AIST (Japan)

3Rm101-05-04 11:15 - 11:40 Invited

Prevention of Fungal Adhesion using Molecular Modified Surfaces

*Miki Nakano[1]

1. National Institute of Advanced Industrial Science and Technology (AIST) (Japan)

3Rm101-05-05 11:40 - 12:00

Au thin film prepared at room temperature on a polymer film from surfactant-free Au nano-particle dispersed aqueous solution for surface-enhanced Raman scattering spectroscopy

*Naoki MATSUDA[1], Hrotaka Okabe[1]

1. AIST (Japan)

Sp28 2021/09/29 10:00 – 12:00 Rm2

3Rm201-04 Sp28. Nano-interface controlled organic devices (Organizer: T.Manaka)

Chairperson:Takaaki Manaka(Tokyo Institute of Technology)

3Rm201-04-01 10:00 – 10:30 Invited

Triboelectric nanogenerator and self-powered systems

*Xiangyu Chen[1]

1. CAS Center for Excellence in Nanoscience, Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, 100083 Beijing, China. (China)

3Rm201-04-02 10:30 – 10:50

Investigation of Enhanced Surface Plasmon Resonance Excitation by Deposition of Graphene on Metallic Grating Surface

*Jungi Kwack[1], Ryousuke Ishikawa[2], Kazunari Shinbo[1], Keizo Kato[1], Akira Baba[1]

1. Niigata University (Japan), 2. Tokyo City university (Japan)

3Rm201-04-03 10:50 – 11:10

Effect of each layer in organic Bulk-Heterojunction solar cells due to plasma treatment

*Sachiko Jonai[1], Akira Baba[1]

1. Niigata univ. (Japan)

3Rm201-04-04 11:10 – 11:30

A non-enzymatic self-powered photoelectrochemical glucose sensing based on AuNPs/PEDOT nanocomposites

*sopit phetsang[1], Naoto Okuuchi[2], Chutiparn Lertvachirapaiboon[2], Kazunari Shinbo[2], Keizo Kato[2], Akira Baba[2]

1. Division of General Education, National Institute of Technology (KOSEN), Nagaoka College, 888 Nishikatakai-machi, Nagaoka-shi, Niigata, 940-8532 (Japan), 2. Graduate School of Science and Technology, Niigata University, 8050 Ikarashi-2-

11:30 – 12:00

Break

Sp24 2021/09/29 10:00 - 12:00 Rm3

3Rm301-03 Sp24. 3D printed electronics (1) (Organizer: D.S.Kim)

Chairperson:Dong Soo Kim(Hanbat National University)

3Rm301-03-01 10:00 - 10:30 Invited

Control of solution flow dynamics using microfluidic channel embedded printing technique for crystallization control of thin-films

*STEVE PARK[1]

1. KAIST (Korea)

3Rm301-03-02 10:30 - 11:00 Invited

High-Performance Nanogenerators Based on Flexible Composite Films for 3D Printed Electronics

*Su Yeon Lee[1]

1. Korea Research Institute of Chemical Technology (KRICT) (Korea)

11:00 - 11:15

Break

3Rm301-03-03 11:15 - 11:45 Invited

Eco-friendly Transparent Flexible Heater with Transfer Printed Metal Mesh Structures

*Yoonkap Kim[1], Han-Jung Kim[1]

1. Gumi Electronics & Information Technology Research Institute (GERI) (Korea)

11:45 - 12:00

Break

Oral2 2021/09/29 10:00 – 12:00 Rm4

3Rm401-08 Regular session – Organic devices and materials

Chairperson:Hideyuki Murata(Japan Advanced Institute of Science and Technology (JAIST)), Kei Noda(Keio University)

3Rm401-08-01 10:00 – 10:15

A versatile structure of light-emitting electrochemical cells for printed electronics

*Yuki Tanaka[1], Jiang Pu[1], Taishi Takenobu[1]

1. Nagoya University (Japan)

3Rm401-08-02 10:15 – 10:30

Predicting the effects of degradation on OLEDs efficiency and lifetime

*Arthur Vauzelle[1], Siebe van Mensfoort[1], Stefano Gottardi[1], Engin Torun[1], Christoph Hauenstein[1], Harm van Eersel[1]

1. Simbeyond B.V (Netherlands)

3Rm401-08-03 10:30 – 10:45

Mechanoluminescence visual inspection of micro-crack generation through fatigue process in flexible electronics film

*Nao Terasaki[1], Nao Ando[2], Kei Hyodo[2]

1. National Institute of Advanced Industrial Science and Technology (AIST), (Japan), 2. YUASA SYSTEM Co., Ltd (Japan)

3Rm401-08-04 10:45 – 11:00

Vertical-type Organic Phototransistors with Heterojunction Structure

*Ken-ichi Nakayama[1], Kohdai Takahashi[1], Mitsuharu Suzuki[1]

1. Osaka University (Japan)

3Rm401-08-05 11:00 – 11:15

Properties of ((CH3NH3)1-x Csx)3 Bi2 I9 (x=0–1) Hybrid-Perovskite Solar Cells (HPeSC's)

*Mohd Faizal Bin Achoi[1,2], Aiba Shunsuke[1], Kato Shinya[1], Kishi Naoki[1], Soga Tetsuo[1]

1. Department of Electrical and Mechanical Engineering, Nagoya Institute of Technology, Gokiso-cho, Showa-ku, Nagoya-shi, 466-8555 (Japan), 2. Faculty of Applied Sciences, Universiti Teknologi MARA, Cawangan Sabah, Kampus Kota Kinabalu,

3Rm401-08-06 11:15 - 11:30

Polyiodide-assisted fabrication of hybrid perovskites and hybrid halides from metal nanolayers on flexible substrates.

*Ivan Turkevych[1], Said Kazaoui[1], Kouji Suemori[1], Alexey Tarasov[2], Eugene Goodilin[2], Naoki Shirakawa[1], Nobuko Fukuda[1]

1. National Institute of Advanced Industrial Science and Technology (AIST) (Japan), 2. Lomonosov Moscow State University (Russia)

3Rm401-08-07 11:30 - 11:45

Fabrication of Two-dimensional Nanomaterial-based Sandwich Structured Electrodes for Supercapacitors

*Supakeit Chanarsa[1]

1. Chiang Mai University (Thailand)

3Rm401-08-08 11:45 - 12:00

Highly stretchable, printable and conductive silver nanowire inks

*Muhammed Kayaharman[1], Hubert Argasinski[1], Jon Atkinson[1], I A Goldthorpe[1]

1. University of Waterloo (Canada)

2021/09/29 14:00

Sp22 2021/09/29 14:00 - 16:00 Rm1

3Rm106-10 Sp22. Current status of printed electronics technology in Thailand (Organizer: A.Tuantranont, S.Ekgasit)

Chairperson:Sanong Ekgasit(Chulalongkorn University), Adisorn Tuantranont(National Science and Technology Development Agency)

3Rm106-10-01 14:00 - 14:30 Invited

Advanced Carbon Nanomaterials for Printed Sensor and Energy Applications

*Adisorn Tuantranont[1], Klodthida Yanukun[1], Chanpen Karuwan[1], Chakrit Sriprachuabwong[1]

1. Graphene and Printed Electronics Research Division, National Security and Dual-use Technology Center, National Science and Technology Development Agency (NSTDA) (Thailand)

3Rm106-10-02 14:30 - 15:00 Invited

Possible Stretchable Conductive Film based on Ag- and Au- PDMS composites

*Kanet Wongravee[1], Porapak Suriya[1], Siriwan Boonmiwiriya[1], Sanong Ekgasit[1,2]

1. Sensor Research Unit (SRU), Department of Chemistry, Faculty of Science, Chulalongkorn University, Bangkok, THAILAND (Thailand), 2. Research Network NANOTEC-CU on Advanced Structural and Functional Nanomaterials, Faculty of Science,

3Rm106-10-03 15:00 - 15:20

α-MnO₂ nanofibers/heteroatom-doped reduced graphene oxide as an electrode by printing method for quasi-solid-state supercapacitors using ionic liquid-based polymer electrolyte

*Chakrit Sriprachuabwong[1], Chatwarin Poochai[1], Adisorn Tuantranont[1]

1. Graphene and Printed Electronics for Dual-Use Applications Research Division (GPERD), Nation Security and Dual-Use Technology Center (NSD), National Science and Technology Development Agency (NSTDA) (Thailand)

3Rm106-10-04 15:20 - 15:40

Printed Graphene-based Electrochemical Genosensor for Rapid Mycobacterium Tuberculosis Detection

*Chanpen Karuwan[1], Jantana Kampeera, Wansika Kiatpathomchaib, Adisorn Tuantranont

1. National Science and Technology Development Agency (Thailand)

3Rm106-10-05 15:40 - 16:00

Performance and stability improvement of printed perovskite solar cells via additives fabricated under high relative humidity

*Jutarat Sudchanham[1], Nirachawadee Srisamran[1], Chakrit Sriprachuabwong[1], Adisorn Tuantranont[1]

1. National Science and Technology Development Agency (NSTDA) (Thailand)

Sp28 2021/09/29 14:00 - 16:00 Rm2

3Rm205-08 Sp28. Nano-interface controlled organic devices (Organizer: T.Manaka)

Chairperson:Akira Baba(Niigata University), Takaaki Manaka(Tokyo Institute of Technology)

3Rm205-08-01 14:00 - 14:30 Invited

Impact of Hydrogen Bonding Interactions on Mechanical and Electrical Performance of Diketopyrrolopyrrole-Based Conjugated polymers

*Minoru Ashizawa[1], Yu Zheng[2], Song Zhang[3], Jiheong Kang[2], Shayla Nikzad[2], Zhiao Yu[2], Yuto Ochiai[2], Hung -Chin Wu[2], Helen Tran[2], Jaewan Mun[2], Yu -Qing Zheng[2], Jeffrey B.-H. Tok[2], Xiandan Gu[3], Zhenan Bao[2]

1. Tokyo Institute of Technology (Japan), 2. Stanford University (United States of America), 3. The University of Southern Mississippi (United States of America)

3Rm205-08-02 14:30 - 15:00 Invited

Multiplex Electrochemical Biosensors as Diagnostic Devices for Detection of Diseases and Virus Infections

*Kontad Ounnunkad[1]

1. Chiang Mai University (Thailand)

3Rm205-08-03 15:00 - 15:20

Evaluation on Nonlinear Optical and Electrical Properties of Chiral Hybrid Organic-Inorganic Perovskites

*FENG WEI[1], Dai Taguchi[1], Takaaki Manaka[1]

1. Tokyo Institute of Technology (Japan)

3Rm205-08-04 15:20 - 15:40

Molecular dynamics simulation of fabrication processes of organic molecular thin films

Xiaoran Yang[1], Ichiro Yamane[1], Hirohiko Tanoguchi Tanoguchi[1], *Toshihiro Shimada[1]

1. Hokkaido University (Japan)

15:40 - 16:00

Break

Sp25 2021/09/29 14:00 - 16:00 Rm3

3Rm304-06 Sp25. 3D printed electronics (2) (Organizer: S.Park)

Chairperson:Steve Park(KAIST)

3Rm304-06-01 14:00 - 14:30 Invited

3D printed heater and curved humidity sensor using Reverse-offset printing process for 3D printed electronics

*Dong Soo Kim[1], Minhun Jung[2], Hyunah Lee[1]

1. Department of Creative Convergence, Hanbat National University (Korea), 2. Research Institute of Printed Electronics & 3D Printing, Hanbat National University (Korea)

3Rm304-06-02 14:30 - 15:00 Invited

3D printing of Conductive and Magnetic Components for 3D Printed Electronics

*Seung Kwon Seol[1]

1. Korea Electrotechnology Research Institute (Korea)

15:00 – 15:15

Break

3Rm304-06-03 15:15 – 15:45 Invited

Characteristics of Induction Heating-based 3D Printing Technique for Electronic Sensors

*Yong Suk Yang[1], Kyung Hyun Kim[1], Kyu Sung Lee[1], Lae Myung Lee[1]

1. Electronics and Telecommunications Research Institute (Korea)

15:45 – 16:00

Break

Sp27 2021/09/29 14:00 – 18:00 Rm4

3Rm409-16 Sp27. Sensing system & human augmentation (Organizer: N.Fukuda, N.Matsuda)

Chairperson:Nobuko Fukuda(AIST), Ken-ichi Nomura(AIST)

3Rm409-16-01 14:00 – 14:25 Invited

Human Augmentation Technology for Healthy and Safe Life

*Akihiko MURAI[1,2]

1. AIST (Japan), 2. JST (Japan)

3Rm409-16-02 14:25 – 14:50 Invited

Novel 3D Forming Method to Shape Electrical Circuits by Post-process without Corruption

*Shusuke Kanazawa[1], Sei Uemura[1], Hirobumi Ushijima[1]

1. National Institute of Advanced Industrial Science and Technology (Japan)

3Rm409-16-03 14:50 - 15:15 Invited

Stretchable Wearable Devices for Human Information Sensing

*Taiki Nobeshima[1]

1. National Institute of Advanced Industrial Science and Technology (Japan)

3Rm409-16-04 15:15 - 15:40 Invited

Soft sensing devices using silver plated short fibers

*Manabu Yoshida[1]

1. AIST (Japan)

15:40 - 15:55

Break

3Rm409-16-05 15:55 - 16:20 Invited

Effect of surface ligand on ionic transport in insulating nanoparticle-based humidity sensor

*Shinya Kano[1], Harutaka Mekaru[1]

1. AIST (Japan)

3Rm409-16-06 16:20 - 16:45 Invited

Reverse Offset Printed Micro-supercapacitors

*Yasuyuki Kusaka[1], Khiev Kimnannara[1], Masayoshi Koutake[1], Shinya Kano[1], Hiromitsu Furukawa[1], Nobuko Fukuda[1]

1. AIST (Japan)

3Rm409-16-07 16:45 - 17:10 Invited

Printed Strain Sensors for Applications in Monitoring of Civil Engineering Structures

*Daniel Zymelka[1], Takahiro Yamashita[1], Takeshi Kobayashi[1]

1. National Institute of Advanced Industrial Science and Technology (Japan)

3Rm409-16-08 17:10 - 17:35 Invited

Ferroelectric properies of PZT film impregated with expoxy resin produced by mega-press (MF) forming method

*Muneyasu Suzuki Suzuki[1], Shusuke Kanazawa[1], Takeshi Morita[2], Hirobumi Ushijima[1], Harutaka Mekaru[1]

1. AIST (Japan), 2. The Univ. of Tokyo (Japan)

17:35 - 18:00

Break

2021/09/29 16:00

Sp21 2021/09/29 16:00 - 18:00 Rm1

3Rm111-14 Sp21. Flexible hybrid electronics manufacturing (Organizer: B.K.Lok)

Chairperson:Boon Keng Lok(Singapore Institute of Manufacturing Technology (SIMTech))

3Rm111-14-01 16:00 - 16:30 Invited

Advances in Design and Manufacturability of Stretchable Electronics

*Kari Ronka[1]

1. VTT (Finland)

3Rm111-14-02 16:30 - 17:00 Invited

Wireless Flexible Hybrid Electronic (FHE) Systems for IoT Sensor Applications

*Clay Shepherd[1,2], Shizuo Tokito[1]

1. Yamagata University ROEL (Japan), 2. Advanced Display Consulting (United States of America)

3Rm111-14-03 17:00 - 17:30 Invited

Laser-induced carbon-based patterns for flexible electronic application

*Mun Ji Low[1], Chen Yang Nicholas Tham[1], Chin Huat Joel Lim[1]

1. Panasonic Factory Solutions Asia Pacific (Singapore)

3Rm111-14-04 17:30 - 18:00

Flexible Hybrid Electronics Manufacturing Process

*Joel Tan[1], SaiChoo Tan[3,4], KaiHwa Chew[3,4], YeowMeng Tan[2], Yusoff Ismail[2]

*1. Nanyang Technological Univ (Singapore), 2. SIMTECH, A*Star (Singapore), 3. Singapore Asahi Chemical & Solder Ind. Pte Ltd (Singapore), 4. Quantum Chemical Technologies (S) Pte Ltd (Singapore)*