

# Poster Session II

**S4-003** **Spray-Cast Multilayer of Large Area (1 cm<sup>2</sup>) Inverted Perovskite Solar Cell with PCBM Blending P(NDI2OD-T2) for Improving Film Morphology of Electron-Transporting Layer via Ultrasonic Spray Technique under Ambient Condition**

Li-Hui Chou, Cheng-Liang Liu

*National Central University, Taiwan*

**S4-005** **Novel Bipolar Polymeric Host for Solution-Processed Thermally Activated Delayed Fluorescence Organic Light Emitting Diodes**

Jinhyo Hwang, Jiwon Yoon, Chae Yeong Kim, Jihyun Kim, Min Ju Cho, Dong Hoon Choi

*Korea University, Korea*

**S4-006** **Novel Fully Conjugated Donor-Acceptor Block Copolymer for Single-Component Active Layer Polymer Solar Cell**

Hyung Jong Kim, Su Hong Park, Chang Geun Park, Na Yeon Kwon, Min Ju Cho, Dong Hoon Choi

*Korea University, Korea*

**S4-007** **TADF and AIE-Active Novel Molecular Triad for Efficient Solution-Processed Non-Doped OLEDs**

Hyung Jong Kim, Mallesham Godumala, Su Hong Park, Na Yeon Kwon, Ji Hye Lee, Min Ju Cho, Dong Hoon Choi

*Korea University, Korea*

**S4-009** **Biocompatible and Rapidly-Responsive Porphyrin-Based Photomemory**

Chia-Wei Ku, Jung-Yao Chen

*National Chung Cheng University, Taiwan*

**S4-010** **Tuning the Physical Property and Molecular Organization of Oligothiophene-Isoindigo Based Conjugated Polymers by Oligo(Ethylene Glycol) Side Chain**

Chien-An Chen, Shih-Chieh Wang, Shih-Huang Tung, Wei-Fang Su

*National Taiwan University, Taiwan*

**S4-011** **Polypyrrole Tube/Carbon Nanotube Composite Films as Freestanding Electrode for Supercapacitors**

J. P. Jyothibas, M. Z. Chen, R. H. Lee

*National Chung Hsing University, Taiwan*

**S4-012** **Star-Shaped Molecule for N-Type Additive of Bulk Heterojunction Perovskite Solar Cells**

Su-Yi Chen, Da-Wei Kuo, Rong-Ho Lee

*National Chung-Hsing University, Taiwan*

**S4-013** **Enhanced Photovoltaic Performance of Perovskite Solar Cells via Addition of Cellulose Derivatives in Photoactive Layer**

Chi-Shiuan Du, Hsiang-Yi Chu, Rong-Ho Lee

*National Chung Hsing University, Taiwan*

**S4-014** **Solution-Processed Phototransistors Based on Small Molecules Semiconductors/All-Inorganic Perovskite Quantum Dots Blends**

Shao-Huan Hong, Cheng-Liang Liu

*National Central University, Taiwan*

**S4-015** **Preparation and Application of Poly(Ionic Liquid) Electrolytes for Lithium Ion Batteries**

Yu-Chao Tseng, Shih-Hsien Hsiang, Sheng-Shu Hou, Jeng-Shiung Jan

*National Cheng Kung University, Taiwan*

**S4-022** **Self-Made Pt/Ti4O7 Catalyst, Membrane Electrode Layer For Membrane Layer and High Temperature PEMFC Single Cell Test**

Lin Sherry, Chang Ting Wei

*Yuan Ze University, Taiwan*

**S4-023** **Nanostructures of the Electrostatic Complexes of Poly(Amidoamine) G4 Dendrimer and Sodium Dodecyl Sulfate**

Yu-Fan Chang<sup>1</sup>, Yu-Hsiang Chen<sup>1,2</sup>, Chun-Yu Chen<sup>3</sup>, Chih Mei Young<sup>1</sup>, Hsin-Lung Chen<sup>1</sup>

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**S4-024** **Synthesis of Conjugated Poly(Arylene Vinylene) Polymers via Ring-Opening Metathesis Polymerization and Their Morphology Study**

Yen Jen Lin, Yunyung Lu, Shihting Chiu, Hsinyu Chiang, Masaki Horie

*National Tsing Hua University, Taiwan*

**S4-025** **Synthesis of Fluorescent Conjugated Polymer Nanodots for Biological Sensing**

Taek Seung Lee, Seonyoung Jo

*Chungnam National University, Korea*

**S4-026** **Effect of Controlling the Number of Fused Rings on Polymer Photocatalysts for Visible-Light-Driven Hydrogen Evolution**

Li-Yu Ting, Jayachandran Jayakumar, Chih-Li Chang, Wei-Cheng Lin, Mohamed Hammad Elsayed, Ho-Hsiu Chou

*National Tsing Hua University, Taiwan*

# Poster Session II

**S4-027 Design and Synthesis of Cycloplatinated Polymer Dots and Effects of Polymer Configuration for Photocatalytic Hydrogen Evolution**

Chih-Chia Chung, Wei-Cheng Lin, Chuan-Yu Jia, Ho-Hsiu Chou

*National Tsing Hua University, Taiwan*

**S4-028 Phosphine Oxide-Containing Polymers for Highly Efficient Visible-Light-Driven Photocatalytic Hydrogen Evolution**

Wen-Hsin Wang, Li-Yu Ting, Jayachandran Jayakumar, Mohamed Hammad Elsayed, Chih-Li Chang, Wei-Cheng Lin, Ho-Hsiu Chou

*National Tsing Hua University, Taiwan*

**S4-029 Exploring the Relationship between Molecular Modification and Photoelectric Properties of the Fullerene and Non-Fullerene Small Molecule Acceptor by Using Theoretical Calculations**

Po-Ya Chu, Xi Ping Xue, Ching-I Huang

*Nation Taiwan University, Taiwan*

**S4-030 AIE-Active Fluorescence Covalent Organic Framework for Electrochemical Supercapacitors and Light-Emitting Diodes**

Shun Wen Lee, Ahmed F. M. El-Mahdy, Shiao-Wei Kuo

*National Sun Yat-sen University, Taiwan*

**S4-031 Exploring Key Factors on the Power Conversion Efficiency and Optoelectronic Properties of Polymer Solar Cells by Optical Transfer Matrix and Kinetic Monte Carlo Model**

Pao-Ching Wang, Yi-Hung Yang, Meng-Hung Tsai, Ching-I Huang

*National Taiwan University, Taiwan*

**S4-032 Thickness Dependence of Fill Factors in Naphthobisthiadiazole Polymer-Based Solar Cells**

Tomohiro Fukuhara<sup>1</sup>, Masahiko Saito<sup>2</sup>, Yasunari Tamai<sup>1,3</sup>, Hyung Do Kim<sup>1</sup>, Itaru Osaka<sup>2</sup>, Hideo Ohkita<sup>1</sup>

<sup>1</sup>Kyoto University, Japan / <sup>2</sup>Hiroshima University, Japan

<sup>3</sup>Japan Science and Technology Agency, PRESTO, Japan

**S4-033 Highly Emission Carbazole-Based Covalent Organic Frameworks as Hydrogen Chloride Chemosensors and Electrochemical Supercapacitors**

Ming-Yi Lai, Ahmed F. M. EL-Mahdy, Shiao-Wei Kuo

*National Sun Yat-Sen University, Taiwan*

**S4-034 Photo-Cross-Linkable Hole-Transporting Layer Using Azide Based Linker for Solution-Processed OLEDs**

Jeong Yong Park, Jae-Ho Jang, Do-Hoon Hwang

*Pusan National University, Korea*

**S4-035 Synthesis and Characterization of Benzotriazole-Based Polymer Donor with Different Length of Linear Alkyl Spacer for Organic Solar Cells**

Suha Lee, Jong-Woon Ha, Do-Hoon Hwang

*Pusan National University, Korea*

**S4-036 Novel Photo-Induced Recovery of OFET Memories Based on Coplanar Donor-Acceptor Polymer Electret for Photo-Recorder Application**

Chia-Hui Chen<sup>1</sup>, Chun-Yao Ke<sup>1</sup>, Yang Wang<sup>2</sup>, Tsuyoshi Michinobu<sup>2</sup>, Yu-Cheng Chiu<sup>3</sup>, Guey-Sheng Liou<sup>1</sup>

<sup>1</sup>National Taiwan University, Taiwan / <sup>2</sup>Tokyo Institute of Technology, Japan / <sup>3</sup>National Taiwan University of Science and Technology, Taiwan

**S4-037 Ultrafast Dissipation of Photo-Excited Conjugated Polymer Strands and its Retardation by Mechanical Stretching**

Hsuan Lu<sup>1</sup>, Yen-Ting Liao<sup>1</sup>, Chien Chung Chen<sup>1</sup>, Yu Ming Chang<sup>2</sup>, Arnold Chang-Mou Yang<sup>1</sup>

<sup>1</sup>National Tsing Hua University, Taiwan / <sup>2</sup>National Taiwan University, Taiwan

**S4-038 Molecular Stretching on Photoluminescence Efficiency of Neat Conjugated Polymers of Varied Backbone Rigidity, Side-Chain Bulkiness, and Intermolecular Aggregation**

Hsuan Lu<sup>1</sup>, Bo-Rong Wu<sup>1</sup>, Chi-An Dai<sup>2</sup>, Arnold Chang-Mou Yang<sup>1</sup>

<sup>1</sup>National Tsing Hua University, Taiwan / <sup>2</sup>National Taiwan University, Taiwan

**S4-039 Influences of Mechanical Stresses on Photoluminescence Enhancements of Conjugated Polymer PFO Diluted in Inert Matrix**

Bo-Rong Wu, Hsuan Lu, Arnold C.-M. Yang

*National Tsing Hua University, Taiwan*

**S4-040 The Photoluminescence Properties of Conjugate Polymer PFO Thin Film via Solvent Annealing**

Shin-Hong Chen, Arnold. C.-M. Yang

*National Tsing Hua University, Taiwan*

# Poster Session II

**S4-042** Light-Direct Movements of Conjugated Polymer Molecules in Solvated Thin Films Revealing Conformation Alterations and Diffusivity Changes by Photoexcitation

Yen-Pu Yang, Arnold Chang-Mou Yang

*National Tsing Hua University, Taiwan*

**S4-043** Synthesis and Characterization of Ionic Conducting Copolymers with Different Functional Group Used as Binder for Cathode of Lithium Batteries

Zhen-En Yen, Chih-Hao Tsao, Ping-Lin Kuo

*National Cheng Kung University, Taiwan*

**S4-044** A Cross-Linked Gel Polymer Electrolytes for High Comprehensive Performances Lithium Ion Batteries Applications

Shun-Yuan Hsu, Chih-Hao Tsao, Ping-Lin Kuo

*National Cheng Kung University, Taiwan*

**S4-045** Alkylated Polyrotaxane for Lithium Ion Conducting Solid Polymer Electrolyte

Ssu-Ting Liao, Chi-Yang Chao

*National Taiwan University, Taiwan*

**S4-046** Poly(2-methyl-5-vinylpyrazine) as a Hydrogen Storage Material

Shuhei Furukawa, Kouki Oka, Hiroyuki Nishide, Kenichi Oyaizu

*Waseda University, Japan*

**S4-047** The Jeffamines as Efficient Cathode Interfacial Layers for Fullerene/Non-Fullerene Polymer Solar Cells

Bing-Huang Jiang<sup>1</sup>, Chih-Ping Chen<sup>2</sup>, Ru-Jong Jeng<sup>1</sup>

<sup>1</sup>National Taiwan University, Taiwan / <sup>2</sup>Ming Chi University of Technology, Taiwan

**S4-074** All-Inorganic CsPbI<sub>2</sub>Br Perovskite Solar Cell Deposited Through Ultrasonic Spray Coating Technique

Yu-Dien Yu, Cheng-Liang Liu

*National Central University, Taiwan*

**S4-075** Additive-Assisted of Methylammonium Acetate for Inverted CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> Perovskite Solar Cells through Ultrasonic Spray Coating Technique under Ambient Condition

Ting-Wei Chen, Cheng-Liang Liu

*National Central University, Taiwan*

**S5-001** Control Association Behavior of Magnetic Particles by Stimuli-Responsive Graft Polymer

Shinichiro Kano<sup>1</sup>, Daiki Nagata<sup>2</sup>, Guannan Shi<sup>2</sup>, Yasushi Takemura<sup>2</sup>, Shin-ichi Yusa<sup>1</sup>

<sup>1</sup>University of Hyogo, Japan / <sup>2</sup>Yokohama National University, Japan

**S5-003** Crystalline, Mechanical, and Electromagnetic Interference Shielding Properties of the High Density Polyethylene/Polyamide 6/Graphene Nanosheet Composites with Compatibilizers

Chien-Lin Huang, Hao-Ping Yang, Chi-Yuan Yen

*Feng Chia University, Taiwan*

**S5-004** Preparation of Surface-Modified CdSe Quantum Dot/Poly(N-Isopropylacrylamide) Nanogels and Their Thermal and Chemosensory Properties

Po-Chih Yang, Kai-Yu Huang, Ying-Hsuan Yao,

Chia-Fang Hsieh

*Yuan Ze University, Taiwan*

**S5-005** Studies of Isothermal Crystallization Behaviors in Ternary Biodegradable Polymer Composite Comprising Hexagonal Boron Nitride

Ting-Chia Hsu, Shiang-Yun Tseng, Sheng-Ping He, Li-Ting Lee

*Feng Chia University, Taiwan*

**S5-006** Crystallization Behaviors in Multinary Biodegradable Polymer Composite Comprising Green Nucleation Agent

Chiao-Ying Hsu, Sheng-Ping He, Hsiang-Yun Tseng, Li-Ting Lee

*Feng Chia University, Taiwan*

**S5-008** Block Copolymer as the Template for Spatially Addressable Perovskite-Based Photomemory

Yu-Hsiang Chang, Jung-Yao Chen

*National Chung Cheng University, Taiwan*

**S5-009** Synergistic in situ Hybrid Synthesis of Highly Crystalline P3HT/ZnO Nanowires at Elevated Pressures

Yu-Ping Lee<sup>1</sup>, Yung-Sheng Chang<sup>1</sup>, Chi-Ju Chiang<sup>1</sup>, Pin-Chia Jen<sup>1</sup>, Bo-Ting Chou<sup>1</sup>, Leeyih Wang<sup>1</sup>, Yao-Yi Cheng<sup>2</sup>, Yi-Huan Lee<sup>2</sup>, Yi-Fan Chen<sup>3</sup>, Chih-Chen Hsieh<sup>1</sup>, and Chi-An Dai<sup>1</sup>

<sup>1</sup>National Taiwan University, Taiwan / <sup>2</sup>National Taipei University, Taiwan / <sup>3</sup>National Central University, Taiwan

**S5-010** Characterization and Nanofiltration Performance of Amino-Functionalized Hollow Silica-Polyamide Composite Membranes

Shu-Hsien Huang<sup>1</sup>, Yu-Xiu Lin<sup>1</sup>, Kueir-Rarn Lee<sup>2</sup>, Juin-Yih Lai<sup>2,3</sup>

<sup>1</sup>National Ilan University, Taiwan / <sup>2</sup>Chung Yuan University, Taiwan / <sup>3</sup>National Taiwan University of Science and Technology, Taiwan

# Poster Session II

**S5-011 Improvement of Mechanical Properties of Epoxy-Based Structural Adhesives Using Surface Modified Nanosilica**

Heewoong Park<sup>1,2</sup>, Jung-hyun Lee<sup>2</sup>, Seunghan Shin<sup>1</sup>

<sup>1</sup>Korea Institute of Industrial Technology (KITECH), Korea / <sup>2</sup>Korea University, Korea

**S5-012 Silver Nanoparticle Decorated Dendritic/Linear Surfactants Acting as Graphene Oxide Dispersants for Surface Enhanced Raman Scattering Detection**

Kuan-Syun Wang<sup>1</sup>, Yu-Wei Cheng<sup>1,2</sup>, Ren-Yu Liao<sup>1</sup>, Chien-Hsin Wu<sup>1</sup>, Ting-Yu Liu<sup>2</sup>, Ru-Jong Jeng<sup>1</sup>

<sup>1</sup>National Taiwan University, Taiwan / <sup>2</sup>Ming Chi University of Technology, Taiwan

**S5-017 The Effect of Chitosan/Hyaluronic Acid Nanoparticles and Poly- $\gamma$ -Glutamic Acid Microneedles on Transcutaneous Immunization**

Zu-Yu Wan, Man-Chun Chuang, Mei-Chin Chen

National Cheng Kung University, Taiwan

**S5-018 Tuneable Interlayer Spacing of Composite Graphene Oxide-Framework Membrane for Separation and Purification**

Wei-Song Hung

National Taiwan University of Science and Technology, Taiwan

**S5-019 Application of Interfacially Polymerized Polysulfonamide-Silica Composite Membranes to Isopropanol Dehydration by Pervaporation**

Shu-Hsien Huang<sup>1,2</sup>, Hsuan-Chen Cheng<sup>1</sup>, Kueir-Rarn Lee<sup>2</sup>, Juin-Yih Lai<sup>2,3</sup>

<sup>1</sup>National Ilan University, Taiwan / <sup>2</sup>Chung Yuan University, Taiwan / <sup>3</sup>National Taiwan University of Science and Technology, Taiwan

**S5-020 Effects of Ionic Liquids on the Mechanical and Electric Properties of Fluorine Rubber/Silver-Coated Copper Composites**

Wen-Hsien Liu, I-Hung Huang, Shih-Huang Tung

National Taiwan University, Taiwan

**S5-021 Lower Critical Solution Temperature (LCST) Behavior of Poly(N-Isopropylacrylamide)-Graft-Clay Nanocomposites**

Ming S. Huang, Che Y. Chu

National Chung Hsing University, Taiwan

**S5-022 Order-Order Transition from Hexagonally Packed Cylinders to Squarely Packed Cylinders in Block Copolymer/Homopolymer/Nanoparticle Blends**

Bo-Siang Jhang, Che-Yi Chu

National Chung Hsing University, Taiwan

**S5-023 Preparation of Novel Functionalized Graphene Oxide/Polyimide Mixed Matrix Membrane for Carbon Dioxide Capture**

Jin-Yun Zhan<sup>1</sup>, Shih-Chieh Yeh<sup>2</sup>, Kueir-Rarn Lee<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Juin-Yih Lai<sup>1,3</sup>

<sup>1</sup>Chung Yuan University, Taiwan / <sup>2</sup>National Taiwan University, Taiwan / <sup>3</sup>National Taiwan University of Science and Technology, Taiwan

**S5-024 Graphene Oxide Quantum Dots Engineered Polyethersulfone Hollow Fiber Membrane for Oil/Water Separation**

Pin-Hsien Li<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>1,2</sup>

<sup>1</sup>Chung Yuan University, Taiwan / <sup>2</sup>National Taiwan University of Science and Technology, Taiwan

**S5-025 Visible-Light-Driven Organic/Inorganic Nanocomposite Photocatalyst Based on Mesoporous TiO<sub>2</sub> Nanofibers**

Seonyoung Jo, Taek Seung Lee

Chungnam National University, Korea

**S5-026 Preparation of Calcium Chloride/Sodium Alginate Membrane for Dehydration of Isopropanol-Water Mixtures**

Szu-Ying Ho<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>2</sup>

<sup>1</sup>Chung Yuan University, Taiwan / <sup>2</sup>National Taiwan University of Science and Technology, Taiwan

**S5-027 Mesoporous Poly(cynate ester) Based on Double-Decker-Shaped Polyhedral Silsesquioxanes (DDSQ) Framework with High Thermal Stability**

Wei-Cheng Chen, Mahmoud M. M. Ahmed, Shiao-Wei Kuo

National Sun Yat-sen University, Taiwan

**S5-028 Preparation of a Luminescent Molecular Imprinting Polymer Nanocomposite for Application in Biorecognition**

Yan-Tai Shih, Chia-Chun Li, Zheng-En Jiang, Tzong-Liu Wang

National University of Kaohsiung, Taiwan

**S5-029 Study of Polyvinylpyrrolidone Quantum Dot Addition on the Morphology of Polyethersulfone Nanofiltration Membrane**

Hong-Li Yang<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>1,2</sup>

<sup>1</sup>Chung Yuan University, Taiwan / <sup>2</sup>National Taiwan University of Science and Technology, Taiwan

# Poster Session II

**S5-030 Copper(II) Oxide Nanoparticles Incorporated Cellulose Acetate Membrane for Sweep Gas Membrane Distillation**

Yu-Yu Wu<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>1,2</sup>

<sup>1</sup>Chung Yuan Christian University, Taiwan / <sup>2</sup>National Taiwan University of Science and Technology, Taiwan

**S5-031 Synthesis of a Luminescent Molecular Imprinting Polymer Nanocomposite via In-Situ Approach for Biorecognition**

Jia-Xin Yu, Zheng-En Jiang, Chia-Chun Li, Tzong-Liu Wang

National University of Kaohsiung, Taiwan

**S5-032 Augmenting the Water Permselectivity of Polymeric Composite Membranes with Graphene Quantum Dots for Pervaporative Alcohol Dehydration**

Rumwald Leo Guillermo Lecaros<sup>1</sup>, Wei-Song Hung<sup>2</sup>, Hui-An Tsai<sup>1</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>1,2</sup>

<sup>1</sup>Chung Yuan Christian University, Taiwan / <sup>2</sup>National Taiwan University of Science and Technology, Taiwan

**S5-033 Stabilize the Interface in Solid-State Lithium Batteries by Introducing a Layer-by-Layer Polymer Electrolyte**

Chan-Hsu Chen, Chih-Hao Tsao, Ping-Lin Kuo

National Cheng Kung University, Taiwan

**S5-035 In-Situ Template Synthesis of Novel Optoelectronic Hybrid Materials**

Pin-Sheng Yeh, Ying-Tien Hsu, Wei-Yen Sun, Yi-Huan Lee

National Taipei University of Technology, Taiwan

**S5-036 Facile Preparation of Platinum Nanoparticles/Carbon Nanotubes Nanohybrid Films for Counter Electrodes in High Efficiency Dye-Sensitized Solar Cells**

Yu-Sheng Chen, Syuan-Yu Lin, Chih-Wei Chiu

National Taiwan University of Science and Technology, Taiwan

**S5-037 Preparation of Ag@Cu Bimetallic Nanoparticles/Graphene/Polymer Hybrid Elastomers with Highly Stretchable Conductors for Wearable Electronic Devices**

Chen Kuan-Yu, Chen-Yang Huang, Bo-Syuan Huang, Bo-Hong Zhou, Chih-Wei Chiu,

National Taiwan University of Science and Technology, Taiwan

**S5-038 Efficiency Enhancement of Perovskite Solar Cells through Polymer as Additive**

Yang-Yen Yu, Wei-Chen Chien, Kai-Yu Shih, Ching Tseng, Chih-Ping Chen

Ming Chi University of Technology, Taiwan

**S5-039 Improved High-Efficiency Organic Photovoltaics via Interface Modification Layers**

Yang-Yen Yu, Hsin-Te Liang, Jhong-Ci Wang, Ching Tseng, Chih-Ping Chen

Ming Chi University of Technology, Taiwan

**S5-040 Highly Sensitive Freestanding Ag/CdSe-CdS/PMMA Sensors for Volatile Organic Compounds Detection**

Chi-Hung Lin<sup>1</sup>, Ting-Han Lin<sup>1</sup>, Shun-Hsiang Chan<sup>1</sup>, Yin-Hsuan Chang<sup>1</sup>, Tz-Feng Lin<sup>2</sup>, Ziming Zhou<sup>3</sup>, Kai Wang<sup>3</sup>, Chao-Sung Lai<sup>1</sup>, Ming-Chung Wu<sup>1</sup>

<sup>1</sup>Chang Gung University, Taiwan / <sup>2</sup>Feng Chia University, Taiwan / <sup>3</sup>Southern University of Science and Technology, Taiwan

**S5-041 Flexible Electrothermal Film Heaters Based on Carbon Materials/PEDOT: PSS Composite**

Yu-Lun Hsieh, Qing-Feng Huang, Ching-Yi Chen

National Chung-Cheng University, Taiwan

**S6-001 Highly Conductive and 3D Printable Ionic Gels Based on Cellulose Nanocrystals and Deep Eutectic Solvents**

Chun-Wei Lai, Sheng-Sheng Yu

National Cheng Kung University, Taiwan

**S6-002 Mechanical Properties and Higher-Order Structural Analysis of Polybutylene Terephthalate/Polyrotaxane Blends**

Shota Mikoshiba, Akira Ishigami, Takashi Kurose, Hiroshi Ito

Yamagata University, Japan

**S6-003 Study of Poly(Lactic Acid)/Poly(Ethylene Oxide)/Hydroxyapatite Blend-Based Biodegradable Nanocomposites**

Kartik Behera<sup>1</sup>, Fang-Chyou Chiu<sup>1,2</sup>

<sup>1</sup>Chang Gung University, Taiwan / <sup>2</sup>Chang Gung Memorial Hospital, Taiwan

**S6-004 Crosslinked Copolymer with Low Dielectric Constant and Dissipation Factor Based on Poly(2-allyl-6-methylphenol-co-2,6-dimethylphenol)**

Chuan-En Wang<sup>1</sup>, Yan-Cheng Lin<sup>2</sup>, Chi-Ching Kuo<sup>1</sup>, Wen-Chang Chen<sup>2</sup>

<sup>1</sup>National Taipei University of Technology, Taiwan / <sup>2</sup>National Taiwan University, Taiwan

**S6-005 Low-CTE and Low Dk Photosensitive Polyimide Using a Photobase Generator**

Ling-Ya Tseng<sup>1</sup>, Chi-Ching Kuo<sup>1</sup>, Wen-Chang Chen<sup>2</sup>

<sup>1</sup>National Taipei University of Technology, Taiwan / <sup>2</sup>National Taiwan University, Taiwan

# Poster Session II

**S6-006 Syntheses of Ansa-Metallocene Supported Catalysts: Polymerization Conditions for the Generation of Long-Chain-Branched Ethylene Polymers**

Chung-Hua Weng, Gang-Wei Shen, Jing-Cherng Tsai  
*National Chung Cheng University, Taiwan*

**S6-007 Energy Generating Smart Garments with Stretchable and Luminescent Characteristics**

Manikandan Venkatesan, Loganathan Veeramuthu, Wan-Ling Li, Fang-Cheng Liang, Chia-Jung Cho, Chi-Ching Kuo  
*National Taipei University of Technology, Taiwan*

**S6-009 Nonsolvent-Induced Macroporous Electrospun Fibers for Adsorption of Aerosol Particles**

Kai-Pin Chang, Yen-Ru Chen, Shih-Huang Tung  
*National Taiwan University, Taiwan*

**S6-010 Molecularly Engineered Liquid Crystal Elastomers: Effect of Spacer Length and Types of Chain Extender on Thermal Actuation**

Yuanhang Guo<sup>1</sup>, Jieun Lee<sup>1</sup>, Suk-kyun Ahn<sup>1</sup>, Jan-Michal Y. Carrillo<sup>2</sup>, Bobby G. Sumpter<sup>2</sup>  
<sup>1</sup>Pusan National University, Korea / <sup>2</sup>Oak Ridge National Laboratory, USA

**S6-011 Optimization of Recycling Chemical Waste Liquid Parameters by Reactive Distillation**

Pei-Chun Hung, Hsing-Sung Chen  
*National Formosa University, Taiwan*

**S6-012 The Morphology Control of Sulfone-Based Hollow Fiber Membrane Prepared by Phase Inversion Method**

Pin-Hsien Li<sup>1</sup>, Hui-An Tsai<sup>1</sup>, Chia-Hung Wu<sup>2</sup>, An-Pang Tu<sup>2</sup>, Kueir-Rarn Lee<sup>1</sup>, Juin-Yih Lai<sup>1,3</sup>  
<sup>1</sup>Chung Yuan University, Taiwan / <sup>2</sup>Chang Chun Plastics Co. Ltd., Taiwan / <sup>3</sup>National Taiwan University of Science and Technology, Taiwan

**S6-013 The Effect of Various Alignment Method on Thermal Actuation Property of Liquid Crystal Elastomers**

Ji Eun Lee, Yuanhang Guo, Suk-Kyun Ahn  
*Pusan National University, Korea*

**S6-014 Improvement of the Compatibility between PET and PEF by Transesterification Reaction**

Yu-Ju Huang, Shih-Huang Tung  
*National Taiwan University, Taiwan*

**S7-003 Multi-Sensitive Nanoparticles for Enhanced Photodynamic Therapy**

Kun-Ying Lu, Tzu-Wei Lu, Lee-Hsin Chang, Fwu-Long Mi  
*Taipei Medical University, Taiwan*

**S7-004 A Multifunctional Nanomedicine for Thrombolysis**

Lee-Hsin Chang, Tsai-Mu Cheng, Fwu-Long Mi  
*Taipei Medical University, Taiwan*

**S7-005 Injectable and Anisotropic Hydrogel Made by Polypeptide, Cellulose Nanofibril and Minocycline for Neural Tissue Engineering**

Cheng-Chang Tsai<sup>1</sup>, An-Jey Su<sup>2</sup>, Kia Washington<sup>2</sup>, Wei-Fang Su<sup>1</sup>  
<sup>1</sup>National Taiwan University, Taiwan / <sup>2</sup>University of Colorado, USA

**S7-007 Sustained Release of Molsidomine Using Embeddable PLGA Microneedles for Primary Osteoporosis Treatment**

Yi-Lun Chen, Chia-Chen Chang, Mei-Chin Chen  
*National Cheng Kung University, Taiwan*

**S7-008 Modulation of Tumor Microenvironment Using a TLR-7/8 Agonist-Loaded Nanoparticle System that Combines Mild Hyperthermia and Immunotherapy for in situ Cancer Vaccination**

Po-Ming Chen, Wen-Yu Pan, Cheng-Yu Wu, Ching-Yen Yeh, Po-Kai Luo, Yu-Miao Liu, Chun-Ju Chou, Hsing-Wen Sung  
*National Tsing Hua University, Taiwan*

**S7-009 Complex Formation of Biocompatible Polymer Bearing Phosphoryl Choline Groups and Poly(Acrylic Acid) and its Thermo-Responsive Behavior**

Hirokazu Fukumoto<sup>1</sup>, Kazuhiko Ishihara<sup>2</sup>, Shin-ichi Yusa<sup>1</sup>  
<sup>1</sup>University of Hyogo, Japan / <sup>2</sup>The University of Tokyo, Japan

**S7-010 Interaction Analysis of a Quorum Sensing Signal in Streptococcus mutans with Polymer Assemblies Using a Quartz Crystal Microbalance**

Ryohei Sakai, Kota Sawaguchi, Yuriko Takayama, Eri Nasuno, Norihiro Kato  
*Utsunomiya University, Japan*

**S7-011 Detection of Extracellular Polymeric Matrices Derived from Gram-Negative Bacteria Using Gold Nanoparticles**

Mizuki Yamaguchi, Kenryu Entsu, Yukiya Saito, Eri Nasuno, Yuriko Takayama, Ken-ichi Iimura, Norihiro Kato  
*Utsunomiya University, Japan*

# Poster Session II

**S7-012 Quorum Quenching with AHL-Lactonase Immobilized Gel Fibers Fabricated by Microfluidic Device**

Naoya Tatsumi, Yuriko Takayama,  
Tomohiro Morohoshi, Eri Nasuno, Norihiro Kato  
*Utsunomiya University, Japan*

**S7-013 Coating Film of Diblock Copolymers Bearing Phosphorylcholine Groups**

Alisa Tsuji<sup>1</sup>, Kazuhiko Ishihara<sup>2</sup>, Shin-ichi Yusa<sup>1</sup>  
<sup>1</sup>*University of Hyogo, Japan* / <sup>2</sup>*The University of Tokyo, Japan*

**S7-014 Inhibitory Effects of Pectin Gel for Hemolysis Activity in Staphylococcus aureus**

Tsukasa Hirose, Yuta Orimo, Ryohei Sakai,  
Yuriko Takayama, Eri Nasuno, Norihiro Kato  
*Utsunomiya University, Japan*

**S7-015 Antimicrobial Nanofibrous Materials for Biomedical Applications**

Zheng-lan Lin<sup>1</sup>, Ru-Ping Liu<sup>2</sup>, Zhu-Ting You<sup>2</sup>,  
Chih-Kuang Chen<sup>1</sup>  
<sup>1</sup>*National Sun Yat-sen University, Taiwan* / <sup>2</sup>*National Yunlin University of Science and Technology, Taiwan*

**S7-016 Inhibitory Effects of Poloxamer on Pseudomonas Biofilm Development onto the Hydrogel Surface and Analysis of its Role Using Gold Nanoparticles**

Kenryu Entsu, Kota Sawaguchi, Yuriko Takayama,  
Eri Nasuno, Ken-ichi Iimura, Norihiro Kato  
*Utsunomiya University, Japan*

**S7-017 Control of Virulence Factor Production and Swarming Motility in Serratia Marcescens by Removal of Bioactive Molecules**

Akari Shimizu, Yuriko Takayama, Eri Nasuno,  
Norihiro Kato  
*Utsunomiya University, Japan*

**S7-018 Electro-Polymerization of Nanostructured PEDOT Film as the Functional Active Layer of Organic Electrochemical Transistors for Biological Sensing Applications**

Jia-An Chou, Ying-Lin Chen, Yu-Sheng Hsiao  
*Ming Chi University of Technology, Taiwan*

**S7-019 Development of Graphene Oxide/Conducting Polymer Composites for Removal of Uremic Toxins and Electrochemical Detection**

Liu Zhou-Wei, Yu-Sheng Hsiao  
*Ming-Chi University of Technology, Taiwan*

**S7-020 Hydrogelation of Linear and Star-Shaped Poly(L-Lysine)-Block-Poly(L-Benzyl-Cysteine) Block Copolypeptides**

Chen-Chi Tang, Jeng-Shiung Jan  
*National Cheng Kung University, Taiwan*

**S7-021 Nicotinic Acid Mononucleotide Supplementation via a Drug Releasing PVA Hydrogel**

Rebecca M. Sehnert, Lindsay E. Wu,  
Robert B. Gilchrist, Penny J. Martens  
*University of New South Wales, Australia*

**S7-023 Development of Novel Lignin Utilization System with Simultaneous Enzymatic Saccharification and Comminution**

Yuichiro Otsuka<sup>1</sup>, Kazuhiro Shikinaka<sup>2</sup>,  
Ronald R. Navarro<sup>1</sup>, Takuma Araki<sup>1,3</sup>, Eiji Masai<sup>3</sup>,  
Koki Kameyama<sup>4</sup>, Toshiji Kameyama<sup>4</sup>,  
Masaya Nakamura<sup>1</sup>  
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<sup>2</sup>*National Institute of Advanced Industrial Science and Technology, Japan* / <sup>3</sup>*Nagaoka University of Technology, Japan* / <sup>4</sup>*Kantechs Co., Ltd, Japan*

**S7-024 Thermosensitive Zwitterionic Co-Polymers form Double Network Hydrogel for Controlled Mechanical Strength**

Shun-Hao Chuang, Wei-Hsin Hsu, Yu-Chih Kao,  
Hsieh-Chih Tsai  
*National Taiwan University of Science and Technology, Taiwan*

**S7-025 Preparation of Environmentally Sensitive Nanoparticles by Self-Assembly of Chitosan with Poly(N-Isopropyl Acrylamide-b-Acrylic Acid) Copolymers and Their Drug-Release Behaviors**

Trong-Ming Don, Yu-Wei Lin  
*Tamkang University, Taiwan*

**S7-027 Preparation and Characterization of Silica Xerogel for Biomedical Applications**

Davut Laçın, Gizem Güler, Ayşe Zehra Aroguz  
*Istanbul University-Cerrahpasa, Turkey*

**S7-028 In Vitro siRNA Delivery via Diethylenetriamine- and Tetraethylenepentamine-Modified Carboxyl Group-Terminated Poly(amino)amine Generation 4.5 Dendrimers**

Endiries Yibru Hanurry<sup>1</sup>, Wei-Hsin Hsu<sup>1</sup>,  
Haile Fentahun Darge<sup>1</sup>, Yihenew Simegniew Birhan<sup>1</sup>,  
Tefera Worku Mekonnen<sup>1</sup>, Abegaz Tizazu Andrgie<sup>1</sup>,  
Hsiao-Ying Chou<sup>1</sup>, Chih-Chia Cheng<sup>1</sup>, Juin-Yih Lai<sup>1,2</sup>,  
Hsieh-Chih Tsai<sup>1</sup>  
<sup>1</sup>*National Taiwan University of Science and Technology, Taiwan* / <sup>2</sup>*Chung Yuan Christian University, Taiwan*

# Poster Session II

## S7-029 Cell Growth Behavior of PVA/CMC Hydrogels

Ji-Yeon Shin<sup>1</sup>, So-Yean Kim<sup>1</sup>, Deuk Yong Lee<sup>1</sup>,  
Jung In Yoon<sup>2</sup>

<sup>1</sup>Daelim University, Korea / <sup>2</sup>HANBIO Co., Ltd., Korea

## S7-030 DOX/ICG-Loaded $\gamma$ -PGA-g-PLGA-Based Polymeric Nanoparticles for Acid-Triggered Rapid DOX Release Combined with NIR-Activated Photothermal Effect

Wen-Hsuan Chiang<sup>1</sup>, Kai-Ting Hou<sup>2</sup>, Te-I Liu<sup>2</sup>,  
Hsin-Cheng Chiu<sup>2</sup>

<sup>1</sup>National Chung Hsing University, Taiwan / <sup>2</sup>National Tsing Hua University, Taiwan

## S7-031 Self-Healable PVA Hydrogels: Preparation, Characterization and Application

Hong-Ru Lin<sup>1</sup>, Yi-An Chang<sup>1</sup>, Chuh-Yean Chen<sup>1</sup>,  
Yiu-Jiuan Lin<sup>2</sup>

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## S7-032 Smart Polymeric Nanogels with pH-Sensitive Benzoic-Imine Linkages Designed as Vehicles for Indocyanine Green Delivery

Shu-Chiao Liao, Chih-Wei Ting, Wen-Hsuan Chiang  
National Chung Hsing University, Taiwan

## S7-033 Development and Characterization of Highly-Conductive Silk Fibroin Electrochromic Hydrogels

Guan-Ting Li, Ta-I Yang

Chung Yuan Christian University, Taiwan

## S7-034 Binary-Blend Fibber-Based Capture Assay of Circulating Tumor Cells for Clinical Diagnosis of Colorectal Cancer

Ai-Wei Lee<sup>1</sup>, Fu-Xiang Lin<sup>2</sup>, Po-Li Wei<sup>3</sup>, Jian-Wei Guo<sup>4</sup>,  
Jem-Kun Chen<sup>2</sup>

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## S7-035 Oxydative Synthesis and Reductive Degradation of Polydisulfide Microparticles Prepared from a Trehalose Derivative Having Two Mercapto Groups

Chihiro Abe, Shinya Yano, Mitsuhiro Shibata,  
Naozumi Teramoto

Chiba Institute Technology, Japan

## S7-036 The Study of Hyaluronic Acid-Based Wound Dressings By 3D-Printing Technology

Po-Hao Lai, Jane Wang

National Tsing Hua University, Taiwan

## S7-037 Dual-Responsive DNA Gel to pH and Calcium Ion

Hye Jin Kim, Seung Soo Oh, Jin Kon Kim

Pohang University of Science and Technology, Korea

## S7-038 Preparation of Alginate-ZnO Composite Dressing

Pei-Chung Tsai, Yi-Chang Chung

National University of Kaohsiung, Taiwan

## S7-039 Novel Free Radical Polymerization of Dopamine for Surface Modification

Tzu-Yu Kuo, Yi-Chang Chung

National University of Kaohsiung, Taiwan

## S7-048 Biodegradable Andrographolide-Eluting Nanofibrous Membranes for the Treatment of Cervical Cancer

Yi-Pin Chen<sup>1,2</sup>, Demei Lee<sup>1</sup>, Shih-Chieh Hsu<sup>1</sup>,  
Shih-Jung Liu<sup>1,2</sup>

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