# Technical Program

## [TuA1] Bio-nano-photonics I

Room A (Grand Ballroom 1, 2F) June 20 (Tue.) / 13:30~15:00

**Session Chiar(s)** Byungil Lee *(Amyloid Solution Inc., Korea)*

**[TuA1-1]**
13:30~14:00
Invited

**Intravital Imaging Reveals Neutrophils Interact with Cancer Cells to Form Neutrophil Extracellular Traps in Vivo**
Juwon Park[1,2], Robert W Wysocki[1,3], Miriam R Fein[1,3], and Mikala Egeblad[1]
*[1]Cold Spring Harbor Laboratory, USA, [2]University of Hawaii at Manoa, USA, [3]Stony Brook University, USA*

**[TuA1-2]**
14:00~14:30
Invited

**Light-driven biomass reforming and hydrogen production**
Jungki Ryu
*Ulsan National Institute of Science and Technology, Korea*

**[TuA1-3]**
14:30~15:00
Invited

**Transdermal Photomedicine Using Various Upconverting Nanomaterials**
Ki Su Kim
*Pusan National University, Korea*

## [TuB1] Plasmonics I

Room B (Grand Ballroom 2, 2F) June 20 (Tue.) / 13:30~15:00

**Session Chiar(s)** Hyeon-Ho Jeong *(Gwangju Inst. of Science and Tech., Korea)*

**[TuB1-1]**
13:30~14:00
Invited

**Plasmonic Sensing with Quantum Light**
Changhyoup Lee
*Korea Research Institute of Standards and Science, Korea*

**[TuB1-2]**
14:00~14:30
Invited

**SERS Nanosensor for Monitoring Plant Health**
Dae Hong Jeong
*Seoul National University, Korea*

**[TuB1-3]**
14:30~15:00
Invited

**Flexible Control of Gold Nanorod Arrangements on Polymer Brush Substrates**
Hideyuki Mitomo
*Hokkaido University, Japan*

## [TuC1] Tip-enhanced Nano-spectroscopy I

Room C (Grand Ballroom 3, 2F) June 20 (Tue.) / 13:30~15:00

**Session Chiar(s)** Jae-Ung Lee *(Ajou Univ., Korea)*
Kai-Qiang Lin *(Xiamen Univ., China)*

**[TuC1-1]**
13:30~14:00
Invited

**White-nanolight-source Through Plasmon Nanofocusing for Background-free Nanoimaging**
Prabhat Verma
*Osaka University, Korea*

**[TuC1-2]**
14:00~14:30
Invited

**Near-field Spectroscopy and Control of Excitons in 2D Van Der Waals Heterostructures**
Vasily Kravtsov
*ITMO University, Russia*

**[TuC1-3]**
14:30~14:45

**Nanocavity-integrated Van Der Waals Heterobilayers for Nano-excitonic Transistor**
Yeonjeong Koo[1], Hyeongwoo Lee[1], Tatyana Ivanova[2], Roman Savelev[2], Mihail Petrov[2], Vasily Kravtsov[2], and Kyoung-Duck Park[1]
*[1]Pohang University of Science and Technology, Korea, [2]ITMO University, Russia*

**[TuC1-4]**
14:45~15:00

**Anomalous Phonon Softening of Wrinkled Monolayer $WSe_2$**
Dong Hyeon Kim[1,2], Byeong Geun Jeong[1,2], Sung Hyuk Kim[1,2], Hyeong Chan Suh[2], Jaekak Yoo[1,3], Yo Seob Won[1], Tae Hoon Kim[2], Seung Mi Lee[3], Ki Kang Kim[1], and Mun Seok Jeong[2]
*[1]Sungkyunkwan University, Korea, [2]Hanyang University, Korea, [3]Korea Research Institute of Standard and Science, Korea*

## [TuD1] Quantum Nanophotonics I

Room D (Sydney 1~3, 2F) June 20 (Tue.) / 13:30~15:00

**Session Chiar(s)** Kwanggeol Lee *(Hanyang Univ., Korea)*

**[TuD1-1]**
13:30~14:00
Invited

**Quantum Plasmonic Applications**
Mark Tame
*Stellenbosch University, South Africa*

**[TuD1-2]**
14:00~14:30
Invited

**Large-Scale Zero-Static Power Programmable Quantum Photonic Processor**
Sangyoon Han
*Daegu Gyeongbuk Institute of Science and Technology, Korea*

**[TuD1-3]**
14:30~15:00
Invited

**Quantum Photonic Sources based on Nanophotonic Structures**
Xi-Feng Ren
*University of Science and Technology of China, China*

## [TuA2] Bio-nano-photonics II

Room A (Grand Ballroom 1, 2F) June 20 (Tue.) / 15:20~16:05

**Session Chiar(s)** Jungki Ryu *(Ulsan Nat'l Inst. of Science and Tech., Korea)*

**[TuA2-1]**
15:20~15:50
Invited

**Photosensitizing Materials and Platforms for Light-triggered Modulation of Alzheimer's β-amyloid Self-assembly**
Byung Il Lee
*Amyloid Solution, Korea*

**[TuA2-2]**
15:50~16:05

**Acceleration of Antigen-antibody Reaction by Optical Force for Detecting Biological Nanomaterials**
Takuya Iida[1], Kana Fujiwara[1], Yumiko Takagi[1], Shota Hamatani[1], Mamoru Tamura[1,2], and Shiho Tokonami[1]
*[1]Osaka Metropolitan University, Japan, [2]Osaka University, Japan*

## [TuB2] Plasmonics II

Room B (Grand Ballroom 2, 2F) June 20 (Tue.) / 15:20~16:50

**Session Chiar(s)** Hyeon-Ho Jeong *(Gwangju Inst. of Science and Tech., Korea)*

**[TuB2-1]**
15:20~15:50
Invited

**Strong Coupling between Plasmonic Nanostructures and 2D Semiconductors**
Hong Wei
*Chinese Academy of Sciences, China*

**[TuB2-2]**
15:50~16:20
Invited

**Plasmonics in Metal Nanoparticles**
Jeong-Eun Park
*Gwangju Institute of Science and Technology, Korea*

**[TuB2-3]**
16:20~16:50
Invited

**Interlayer Excitons in Various Heterostructures**
Jinsoo Joo[1], Taek Joon Kim[1], Sang-hun Lee[1], Jun Young Kim[1], and Jeongyong Kim[2]
*[1]Korea University, Korea, [2]Sungkyunkwan University, Korea*

## [TuC2] Tip-enhanced Nano-spectroscopy II

Room C (Grand Ballroom 3, 2F) June 20 (Tue.) / 15:20~17:05

**Session Chiar(s)** Prabhat Verma *(Osaka Univ., Japan)*
Vasily Kravtsov *(ITMO Univ., Russia)*

**[TuC2-1]**
15:20~15:50
Invited

**Visualizing Charge Dynamics with Shot Noise STM**
Doohee Cho
*Yonsei University, Korea*

**[TuC2-2]**
15:50~16:20
Invited

**Optical Spectroscopic Investigations of Wafer-scale Atomically Thin Materials**
Jae-Ung Lee
*Ajou University, Korea*

**[TuC2-3]**
16:20~16:50
Invited

**Exciton Dynamics in Transitional Metal Dichalcogenides by Tip-enhanced Cavity Spectroscopy (TECS)**
Hyuntae Kim
*Park Systems Corporation, Korea*

**[TuC2-4]**
16:50~17:05

**Nonlocal Response Theory of Tip-enhanced Photoluminescence of a Single Molecule**
Y. Tomoshige[1], M. Tamura[1,2], T. Yokoyama[1], and H. Ishihara[1]
*[1]Osaka University, Japan, [2]Osaka Metropolitan University, Japan*

## [TuD2] Quantum Nanophotonics II

Room D (Sydney 1~3, 2F) June 20 (Tue.) / 15:20~16:50

**Session Chiar(s)** Changhyoup Lee *(Korea Research Inst. of Standards and Science, Korea)*

**[TuD2-1]**
15:20~15:50
Invited

**Quantum Sensing and Imaging based on Solid-state Spin Qubits in Diamond**
Donghun Lee
*Korea University, Korea*

**[TuD2-2]**
15:50~16:20
Invited

**Decision Making by Quantum and Near-Field Light**
Makoto Naruse[1], Kazuharu Uchiyama[2], Kingo Uchida[3], and Hirokazu Hori[2]
*[1]The University of Tokyo, Japan, [2]University of Yamanashi, Japan, [3]Ryukoku University, Japan*

**[TuD2-3]**
16:20~16:35

**Azimuth Angle-Dependent Exciton-Polariton Dispersions of One-Dimensional $CsPbBr_3$ Microcavity**
Hyeonjong Jeong[1], Hyeon-Seo Choi[1], Jung-Gue Park[2], Jang-Won Kang[2], and Chang-Hee Cho[1]
*[1]Daegu Gyeongbuk Institute of Science and Technology, Korea, [2]Mokpo National University, Korea*

**[TuD2-4]**
16:35~16:50

**Optimization of Nitride MXene Synthesis**
Afrizal Lathiful Fadli, Anir S. Sharbirin, and Jeongyong Kim
*Sungkyunkwan University, Korea*

## [WeA1] Nanophotonics I

Room A (Grand Ballroom 1, 2F) June 21 (Wed.) / 09:00~10:30

**Session Chiar(s)** Myung-Ki Kim *(Korea Univ., Korea)*
You-Shin No *(Konkuk Univ., Korea)*

**[WeA1-1]**
09:00~09:30
Invited

**On-chip Chalcogenide Glass Resonators and Waveguides for Mid-infrared Applications**

Hansuek Lee[1], Daewon Suk[1], Kiyoung Ko[1], Soobong Park[1], Dohyeong Kim[1], Seong Cheol Lee[1], Kwang-Hoon Ko[2], Fabian Rotermund[1], and Duk-Yong Choi[3]

*[1]Korea Advance Institute of Science and Technology, Korea, [2]Korea Atomic Energy Research Institute, Korea, [3]Australian National University, Australia*

**[WeA1-2]**
09:30~10:00
Invited

**Parallel Information Processing and Computation using Optical Frequency Combs**

Myoung-Gyun Suh

*NTT Research, Inc., USA*

**[WeA1-3]**
10:00~10:15

**Extremely Broadband Topological Waveguide Coupler based on Ddd-number Su-Schrieffer-Heeger chains**

Yu Sung Choi, Youngsun Choi, and Jae Woong Yoon

*Hanyang University, Korea*

**[WeA1-4]**
10:15~10:30

**Nonreciprocal Fiber-optic Amplifier enabled by Encirclingan-EP Emulation and Gain Saturation Nonlinearity**

Seung Han Shin, Yu Sung Choi, and Jae Woong Yoon

*Hanyang University, Korea*

## [WeB1] Plasmonics III

Room B (Grand Ballroom 2, 2F) June 21 (Wed.) / 09:00~10:00

**Session Chiar(s)** Hyeon-Ho Jeong *(Gwangju Inst. of Science and Tech., Korea)*

**[WeB1-1]**
09:00~09:15

**One-step Optical Quantification of DNA Loading on Gold Nanoparticles**

Jaewon Lee and Seungwoo Lee

*Korea University, Korea*

**[WeB1-2]**
09:15~09:30

**Rapid Inverse Design of Metasurfaces for All Optical Image Processing**

N. Priscilla, L. Wesemann, S. Sulejmana, L. Clark, T.J. Davis, and A. Roberts

*The University of Melbourne, Australia*

**[WeB1-3]**
09:30~09:45

**Adaptive-Tunable Nanogap-Enhanced Raman Scattering**

Taeyoung Moon[1], Bamadev Das[2], Huitae Joo[1], Yeonjeong Koo[1], Mingu Kang[1], Hyeongwoo Lee[1], Sunghwan Kim[2], Yung Doug Suh[2,3], Dai-Sik Kim[2], and Kyoung-Duck Park[1]
*[1]Pohang University of Science and Technology, Korea, [2]Ulsan National Institute of Science and Technology Korea, [3]Institute for Basic Science, Korea*

**[WeB1-4]**
09:45~10:00

**Gap-Plasmon-Enhanced Broadband Photodetection in a Plasmonic Superconducting Photon Detector**

Jing-Wei Yang[1], Feng-Yang Tasi[1,2], Tzu-Yu Peng[1,2], Jia-Wern Chen[1], Yu-Jung Lu[1,2]
*[1]Academia Sinica, Taiwan, [2]National Taiwan University, Taiwan*

## [WeC1] Near-field Microscopy & Spectroscopy I

Room C (Grand Ballroom 3, 2F) June 21 (Wed.) / 09:00~10:30

**Session Chiar(s)** Min Seok Jang *(Korea Advanced Inst. of Science and Tech., Korea)*
Hwi Je Woo *(Sungkyunkwan Univ., Korea)*

**[WeC1-1]**
09:00~09:30
Invited

**Tip-enhanced Raman spectroscopy for nanoscale resolving the electronic properties and chemical activities**

Huishu Feng, Tengxiang Huang, Xiang Wang, and Bin Ren
*Xiamen University, China*

**[WeC1-2]**
09:30~10:00
Invited

**Sub-nanometer Resolved Single-Molecule Optical Imaging**

Zhen-Chao Dong
*University of Science and Technology of China, China*

**[WeC1-3]**
10:00~10:30
Invited

**2-Dimensional and 3-Dimensional Hot Nanoparticles for near-field Focusing**

Sungho Park
*Sungkyunkwan University, Korea*

## [WeD1] Non-Hermitian Topological Photonics

Room D (Sydney 1~3, 2F) June 21 (Wed.) / 09:00~10:30

**Session Chiar(s)** Ki Young Lee *(Hanyang Univ., Korea)*
Jae Woong Yoon *(Hanyang Univ., Korea)*

**[WeD1-1]**
09:00~09:30
Invited

**Magnetic Topological Photonic Crystals**

Baile Zhang
*Nanyang Technological University, Singapore*

**[WeD1-2]**
09:30~10:00
Invited

**Nonlinearity enabled Higher-order Exceptional Point**

Meng Xiao
*Wuhan University, China*

**[WeD1-3]**
10:00~10:30
Invited

**Exceptional Points in Lossy Media for Deep Wave Penetration and Flat Radiation**

Sangsik Kim
*Korea Advanced Institute of Science and Technology, Korea*

## [WeA2] Nanophotonics II

Room A (Grand Ballroom 1, 2F) June 21 (Wed.) / 10:50~12:20

**Session Chiar(s)** Myoung-Gyun Suh *(NTT Research, Inc., USA)*
Myung-Ki Kim *(Korea Univ., Korea)*

**[WeA2-1]**
10:50~11:20
Invited

**Minimal-Gain-Printed On-Demand Si-Integrable Continuous-Wave Nanolasers**

Min-Woo Kim[1], Byoung Jun Park[2], Myung-Ki Kim[2], and You-Shin No[1]
*[1]Konkuk University, Korea, [2]Korea University, Korea*

**[WeA2-2]**
11:20~11:50
Invited

**Nanostructural Optical Antennas for Functional Devices**

Zhaogang Dong[1,2]
*[1]Agency for Science, Technology and Research, Singapore [2]National University of Singapore, Singapore*

**[WeA2-3]**
11:50~12:05

**Effects of Particle Randomness on Photonic Band Gap Size in Self-assembled Colloidal Crystals**

Duanduan Wan
*Wuhan University, China*

**[WeA2-4]**
12:05~12:20

**All-optical Control of High-purity Trions in Nanoscale Waveguide**

Hyeongwoo Lee[1], Yeonjeong Koo[1], Shailabh Kumar[2,3], Yunjo Jeong[4], Dong Gwon Heo[5], Soo Ho Choi[6], Huitae Joo[1], Mingu Kang[1], Radwanul H. Siddique[2,3], Ki Kang Kim[6,7], Hong Seok Lee[5], Sangmin An[5], Hyuck Choo[1,2], and Kyoung-Duck Park[1]
*[1]Pohang University of Science and Technology, Korea, [2]California Institute of Technology, USA, [3]Samsung Advanced Institute of Technology, Korea, [4]Korea Institute of Science and Technology, Korea, [5]Jeonbuk National University, Korea, [6]Institute for Basic Science, Korea, [7]Sungkyunkwan University, Korea*

## [WeB2] Metaphotonics I

Room B (Grand Ballroom 2, 2F) June 21 (Wed.) / 10:50~12:20

**Session Chiar(s)** Inki Kim *(Sungkyunkwan Univ., Korea)*

**[WeB2-1]**
10:50~11:20
Invited

**High-quality Optical Vortices Generation and Near-perfect Absorption via Inverse Design**

Munseong Bae[1], Svetlana V. Boriskina[2], and Haejun Chung[1]

*[1]Hanyang University, Korea, [2]Massachusetts Institute of Technology, USA*

**[WeB2-2]**
11:20~11:50
Invited

**Inverse Design of Metaphotonics for Multicolor and 3D Holography**

Sunae So

*Korea University, Korea*

**[WeB2-3]**
11:50~12:05

**Phase Imaging using Polarization-sensitive Dielectric Metasurfaces**

Shaban B. Sulejman, Lukas Wesemann, Wendy S. L. Lee, Kenneth B. Crozier, and Ann Roberts

*The University of Melbourne, Australia*

**[WeB2-4]**
12:05~12:20

**Large Field of View, Large Area and Broadband Achromatic Mid-infrared Metalens**

Yen-Chun Chen, Chen-Yi Yu, Wei-Lun Hsu, and Chih-Ming Wang

*National Central University, Taiwan*

## [WeC2] Near-field Microscopy & Spectroscopy II

Room C (Grand Ballroom 3, 2F) June 21 (Wed.) / 10:50~12:20

**Session Chiar(s)** Wonjun Jang *(Inst. for Basic Science, Korea)*
Donghun Lee *(Korea Univ., Korea)*

**[WeC2-1]**
10:50~11:20
Invited

**Single-molecule Near-field Spectroscopy with STM**

Yousoo Kim

*The University of Tokyo, Japan*

**[WeC2-2]**
11:20~11:50
Invited

**Revealing the Local Band Structures of Sharp WS2/MoS2 Heterojunction and Graded $W_xMo_{1-x}S_2$ Alloy by Near-Field Optical Imaging**

Po-Wen Tang[1], He-Chun Chou[1], Shiue-Yuan Shiau[2], Xin-Quan Zhang[3], Yi-Hsien Lee[3], and Chi Chen[1]

*[1]Academia Sinica, Taiwan, [2]National Center for Theoretical Sciences, Taiwan, [3]National Tsing-Hua University, Taiwan*

**[WeC2-3]**
11:50~12:05
Invited

**Selective Mapping of Tip-launched Near-field Scattering of Surface Plasmon Polaritons for Retrieving Dispersion Relation in Silver Nano Flakes**

Hwi Je Woo
*Sungkyunkwan University, Korea*

**[WeC2-4]**
12:05~12:20

**Enhancing Precise Nanophotonic Dark-field Microscopy with Low-loss Substrate**

Yongdeok Cho[1], Ji-Hyeok Huh[1], Minh Thang Nguyen[1], Hayun Ahn[1], Nayeoun Kim[1], Young-Seok Kim[2], and Seungwoo Lee[1,3]
*[1]Korea University, Korea, [2]Korea Electronic Technology Institute, Korea, [3]Korea Institute of Science and Technology, Korea*

## [WeD2] Super-resolution Imaging

Room D (Sydney 1~3, 2F) June 21 (Wed.) / 10:50~12:50

**Session Chiar(s)** Doory Kim *(Hanyang Univ., Korea)*

**[WeD2-1]**
10:50~11:20
Invited

**Superresolution Imaging Reveals Novel GPCR Cellular Structure in Neurons**

Guisheng Zhong
*ShanghaiTech University, China*

**[WeD2-2]**
11:20~11:50
Invited

**Unlocking the Potential of Far-Field Optical Microscopy in Nanoworld**

Seok-Cheol Hong[1,2]
*[1]Institute for Basic Science, Korea, [2]Korea University, Korea*

**[WeD2-3]**
11:50~12:20
Invited

**Super-resolution Imaging in Space and Time Domain with Extreme Lights**

Changyong Song
*Pohang University of Science and Technology, Korea, Korea*

**[WeD2-4]**
12:20~12:50
Invited

**Tackling Background Noise Problem in Stimulated Emission Depletion Nanoscopy**

Jong-Chan Lee
*Daegu Gyeongbuk Institute of Science and Technology, Korea*

## [WeA3] Ultrafast Nanophotonics I

Room A (Grand Ballroom 1, 2F) June 21 (Wed.) / 13:30~15:00

**Session Chiar(s)** Jonghwan Kim *(Pohang Univ. of Science and Tech., Korea)*

**[WeA3-1]**
13:30~14:00
Invited

**Light-induced Phenomena in Condensed Matter System from Ab Initio Approach**

Dongbin Shin
*Gwangju Institute of Science and Technology, Korea*

**[WeA3-2]**
14:00~14:30
Invited

**Spin Wavepackets in the Kagome Ferromagnet $Fe_3Sn_2$: Propagation and Precursors**
Changmin Lee
*Hanyang University, Korea*

**[WeA3-3]**
14:30~15:00
Invited

**Direct Imaging of Ultrafast Charge Carriers Dynamics in Semiconductor Thin Films**
Jooyoung Sung
*Daegu Gyeongbuk Institute of Science and Technology, Korea*

## [WeB3] Metaphotonics II

Room B (Grand Ballroom 2, 2F) June 21 (Wed.) / 13:30~15:15

**Session Chiar(s)** Sunae So *(Korea Univ., Korea)*

**[WeB3-1]**
13:30~14:00
Invited

**Ultra-broadband High Efficiency Polarization Beam Splitter Metagratings using Integrated Resonant Unit Elements into Metasurface Designs**
Hui-Hsin Hsiao
*National Taiwan University, Taiwan*

**[WeB3-2]**
14:00~14:30
Invited

**Design, Fabrication, and Application of Metasurface/ Metalens based on Dielectric Waveguide**
Kentaro Iwami
*Tokyo University of Agriculture and Technology, Japan*

**[WeB3-3]**
14:30~14:45

**Meta-lenses from Visible to Vacuum UV Light**
Mu Ku Chen, Xiaoyuan Liu, Jingcheng Zhang, Jin Yao, and Din Ping Tsai
*City University of Hong Kong, China*

**[WeB3-4]**
14:45~15:00

**Meta-lens for Intelligent Land, Underwater, and Aerial Imaging**
Xiaoyuan Liu[1], Mu Ku Chen[1], Cheng Hung Chu[2], Jingcheng Zhang[1], Borui Leng[1], Takeshi Yamaguchi[2], Takuo Tanaka[2,3,4], and Din Ping Tsai[1]
*[1]City University of Hong Kong, China, [2]RIKEN Center for Advanced Photonics, Japan, [3]RIKEN Cluster for Pioneering Research, Japan, [4]Tokushima University, Japan*

**[WeB3-5]**
15:00~15:15

**Meta-lenses for Future Communication Systems**
Jing Cheng Zhang, Mu Ku Chen, Xiaoyuan Liu, and Din Ping Tsai
*City University of Hong Kong, China*

## [WeC3] IR Nanoscopy I

Room C (Grand Ballroom 3, 2F) June 21 (Wed.) / 13:30~15:00

**Session Chiar(s)** Bongsu Kim *(Samsung Advanced Inst. of Tech., Korea)*
Junghoon Jahng *(Korea Research Inst. of Standards and Science, Korea)*

**[WeC3-1]**
13:30~14:00
Invited

**Stacking-specific Plasmonic Responses and Structural Changes of Few-layer Graphene revealed by IR Near-field Microscopy**
Zee Hwan Kim
*Seoul National University, Korea*

**[WeC3-2]**
14:00~14:30
Invited

**Mid-infrared Image Polaritons in Van Der Waals Crystals**
Min Seok Jang
*Korea Advanced Institute of Science and Technology, Korea*

**[WeC3-3]**
14:30~15:00
Invited

**Control of Multi-step Vibrational Excitation using Ultrafast Infrared Plasmonics**
Satoshi Ashihara
*The University of Tokyo, Japan*

## [WeD3] Nano-optoelectronics I

Room D (Sydney 1~3, 2F) June 21 (Wed.) / 13:30~15:00

**Session Chiar(s)** Hyowon Moon *(Korea Inst. of Science and Tech., Korea)*
Chang-Lyoul Lee *(Gwangju Inst. of Science and Tech., Korea)*

**[WeD3-1]**
13:30~14:00
Invited

**Moiré Excitons and Correlated States in 2D Materials**
Hyeonjun Baek
*Sogang University, Korea*

**[WeD3-2]**
14:00~14:30
Invited

**Monolayer Semiconductors with High Luminescence Efficiency**
Hyungjin Kim
*Yonsei University, Korea*

**[WeD3-3]**
14:30~15:00
Invited

**Transition Metal Dichalcogenides (TMDs)-based Photodetector: Performance Enhanced by Chemical Doping Technique**
Dong-Ho Kang
*Gwangju Institute of Science and Technology, Korea*

## [WeA4] Ultrafast Nanophotonics II

Room A (Grand Ballroom 1, 2F) June 21 (Wed.) / 15:20~16:50

**Session Chiar(s)** Changmin Lee *(Hanyang Univ., Korea)*

**[WeA4-1]**
15:20~15:50
Invited

**Ultrafast Photo-induced Dynamics in 2D Materials with Low in-Plane Symmetry**
Jiacheng Song, Sung Bok Seo, Sang Ho Suk, and Sangwan Sim
*Hanyang University, Korea*

**[WeA4-2]**
15:50~16:20
Invited

**Ultrafast Field-Induced Nonlinear Optics**
Bong Joo Kang
*Korea Research Institute of Chemical Technology, Korea*

**[WeA4-3]**
16:20~16:50
Invited

**Ultrafast Control of Topological Surface and Bulk Charge Transport through Hypersonic Vibrational Coherence**
Tae Gwan Park and Fabian Rotermund
*Korea Advanced Institute of Science and Technology, Korea*

## [WeB4] THz Spectroscopy I

Room B (Grand Ballroom 2, 2F) June 21 (Wed.) / 15:20~17:05

**Session Chiar(s)** Taewoo Ha *(Sungkyunkwan Univ., Korea)*
Geunchang Choi *(Chung-Ang Univ., Korea)*

**[WeB4-1]**
15:20~15:50
Invited

**Active control of THz polarization states by graphene metasurfaces**
Teun-Teun Kim
*University of Ulsan, Korea*

**[WeB4-2]**
15:50-~16:20
Invited

**Ultra-stable Terahertz Synthesizer referenced to a High-finesse Optical Cavity**
Young-Jin Kim, Dong-Chel Shin, Guseon Kang, Jae-Yoon Kim, Heesuk Jang, and Seung-Woo Kim
*Korea Advanced Institute of Science and Technology, Korea*

**[WeB4-3]**
16:20~16:35

**Physics Informed Deep Learning Enabled Inverse Design in Terahertz Nano-photonics**
Hyoung-Taek Lee, Jeonghoon Kim, and Hyeong-Ryeol Park
*Ulsan National Institute of Science and Technology, Korea*

**[WeB4-4]**
16:35~16:50

**Full Quantum Control of Terahertz Electromagnetic Waves in a Nanometric Tunnel Junction**
Gangseon Ji[1], Jae Deock Jeon[2], Seonhye Eom[1], Sang Woon Lee[2], and Hyeong-Ryeol Park[1]
*[1]Ulsan National Institute of Science and Technology, Korea, [2]Ajou University, Korea*

**[WeB4-5]**
16:50~17:05

**Terahertz Virus Detection on Two-dimensional Optical Hotspots in Gold Nanogaps**
Gangseon Ji[1], Hwan Sik Kim[2], Seong Ho Cha[2], Hyoung-Taek Lee[1], Hye Ju Kim[2], Sang Woon Lee[2], Kwang Jun Ahn[2], Kyoung-Ho Kim[3], Yeong Hwan Ahn[2], and Hyeong-Ryeol Park[1]
*[1]Ulsan National Institute of Science and Technology, Korea, [2]Ajou University, Korea, [3]Chungbuk National University, Korea*

## [WeC4] IR Nanoscopy II

Room C (Grand Ballroom 3, 2F) June 21 (Wed.) / 15:20~16:20

**Session Chiar(s)** Bongsu Kim *(Samsung Advanced Inst. of Tech., Korea)*
Junghoon Jahng *(Korea Research Inst. of Standards and Science, Korea)*

**[WeC4-1]**
15:20~15:50
Invited

**Infrared Photo-induced Force Microscopy for Quantitative Molecular Spectro-nanoscopy**
Sung Park
*Molecular Vista, USA*

**[WeC4-2]**
15:50~16:20
Invited

**Pushing the Detection Limit of Infrared Photoinduced Force Microscopy**
Jian Li
*Nanjing University, China*

## [WeD4] Nano-optoelectronics II

Room D (Sydney 1~3, 2F) June 21 (Wed.) / 15:20~16:50

**Session Chiar(s)** Koichi Okamoto *(Osaka Metropolitan Univ., Japan)*

**[WeD4-1]**
15:20~15:35

**1.3 μm Ultrashort Pulse Generation in Praseodymium Doped Fiber Laser using Zinc Phosphate Mode-Locker**
Harith Ahmad, Bilal Nizamani, and Muhamad Zharif Samion
*Photonics Research Centre, Malaysia*

**[WeD4-2]**
15:35~15:50

**Ultrafast Thulium-Doped Fiber Laser with Zinc Oxide Nanorods Saturable Absorber**
M. Z. Samion, M. F. Ismail, S.A Reduan, M. K. A. Zaini, L. Bayang, and H. Ahmad
*Photonics Research Centre, Malaysia*

**[WeD4-3]**
15:50~16:20
Invited

**Preparation of Highly Stable Core-Shell Perovskite QDs through Alkali-Metal Doping and Ligand Passivation**
Chang-Lyoul Lee
*Gwangju Institute of Science and Technology, Korea*

**[WeD4-4]**
16:20~16:50
Invited

**Unraveling the Origin of Spectral Instability of Perovskite Light-emitting Diodes and Pioneering Deep-blue Emissive Quasi-2D Perovskites**
Dong Ha Kim
*Ewha Womans University, Korea*

## [ThA1] Nanophotonics III

Room A (Grand Ballroom 1, 2F) June 22 (Thu.) / 09:00~10:00

**Session Chiar(s)** You-Shin No *(Konkuk Univ., Korea)*
Ji-Hyeok Huh *(Korea Univ., Korea)*

**[ThA1-1]**
09:00~09:30
Invited

**High-lying Excitons and Excitonic Quantum Interference in 2D Semiconductors**

Kai-Qiang Lin

*Xiamen University, China*

**[ThA1-2]**
09:30~09:45

**Hetero Interlayer Exciton in Far-Red Range from Perovskite-MAPbI3/CdSe-ZnS-QD Hybrids**

Taek Joon Kim[1], Sang-hun Lee[1], Jinsoo Joo[1], and Jeongyong Kim[2]

*[1]Korea University, Korea, [2]Sungkyunkwan University, Korea*

**[ThA1-3]**
09:45~10:00

**Exploring the Correlation between Phonon and Excited Exciton in $WSe_2$ Monolayer: A Novel Approach using eXplainable Artificial Intelligence and Density Functional Theory**

Jaekak Yoo[1,2], Youngwoo Cho[3], Soo Ho Choi[1], Ki Kang Kim[1], Seong Chu Lim[1], Seung Mi Lee[2], Jaegul Choo[3], and Mun Seok Jeong[4]

*[1]Sungkyunkwan University, Korea, [2]Korea Research Institute of Standards and Science, Korea, [3]Korea Advanced Institute of Science and Technology, Korea, [4]Hanyang University, Korea*

## [ThB1] Metaphotonics III

Room B (Grand Ballroom 2, 2F) June 22 (Thu.) / 09:00~10:30

**Session Chiar(s)** Hyounghan Kwon *(Korea Inst. of Science and Tech., Korea)*
Inki Kim *(Sungkyunkwan Univ., Korea)*

**[ThB1-1]**
09:00~09:30
Invited

**Nano-electromechanically Tunable Resonant Dielectric Metasurfaces**

Hyounghan Kwon

*Korea Institute of Science and Technology, Korea*

**[ThB1-2]**
09:30~10:00
Invited

**Extreme Nanophotonics Based on Surface Polaritons in Two-Dimensional Materials**

In-Ho Lee

*Korea Institute of Science and Technology, Korea*

**[ThB1-3]**
10:00~10:15

**Optical Performance and Limitation of Pixelated Metalens**

Chen-Yi Yu, Qui-Chun Zeng, Yen-Chun Chen, Wei-Lun Hsu, and Chih-Ming Wang

*National Central University, Taiwan*

**[ThB1-4]**
10:15~10:30

**Metasurface-based Polarization Light Sorting**

Wei-Lun Hsu[1], Chun-Yuan Wang[2], Qiu-Chun Zeng[1], Yen-Chun Chen[1], and Chih-Ming Wang[1]
*[1]National Central University, Taiwan, [2]VisEra Technologies Company Limited, Taiwan*

## [ThC1] Near-field Optical Instrumentation I

Room C (Grand Ballroom 3, 2F) June 22 (Thu.) / 09:00~10:30

**Session Chiar(s)** Sangmin An *(Jeonbuk Nat'l Univ., Korea)*

**[ThC1-1]**
09:00~09:30
Invited

**Interrogating the Optical Magnetism of Structured Light through Subtle Optical Forces**

Jinwei Zeng[1,2], Mohammad Albooyeh[2,3], Mohsen Rajaei[2], Abid Anjum Sifat[2], Eric O. Potma[2], H. Kumar Wickramasinghe[2], and Filippo Capolino[2]
*[1]Huazhong University of Science and Technology, China, [2]University of California Irvine, USA, [3]Mobix Labs Inc., USA*

**[ThC1-2]**
09:30~10:00
Invited

**Nanospectroscopy of Optical Force**

Junsuke Yamanishi[1], Tsukasa Torimoto[2], Hajime Ishihara[3], Hiromi Okamoto[1], and Yasuhiro Sugawara[3]
*[1]National Institutes of Natural Sciences, Japan, [2]Nagoya University, Japan, [3]Osaka University, Japan*

**[ThC1-3]**
10:00~10:30
Invited

**Photo-induced Dipole Force and Thermal Force for Spectroscopic Nanoimaging**

Junghoon Jahng
*Korea Research Institute of Standards and Science, Korea*

## [ThD1] Nano-optoelectronics III

Room D (Sydney 1~3, 2F) June 22 (Thu.) / 09:00~09:45

**Session Chiar(s)** Hyeonjun Baek *(Sogang Univ., Korea)*

**[ThD1-1]**
09:00~09:30
Invited

**Development of Highly Efficient Light-emitting Devices with a Wide Wavelength Range using Plasmonics and Nanophotonics**

Koichi Okamoto
*Osaka Metropolitan University, Japan*

**[ThD1-2]**
09:30~09:45

**Control of the Photocurrent Generation of 2D Layered Materials**

Thi Uyen Tran, Wonkil Sakong, and Seong Chu Lim
*Sungkyunkwan University, Korea*

## [ThA2] Nanophotonics IV

Room A (Grand Ballroom 1, 2F) June 22 (Thu.) / 10:50~11:50

**Session Chiar(s)** Myung-Ki Kim *(Korea Univ., Korea)*
You-Shin No *(Konkuk Univ., Korea)*

**[ThA2-1]**
10:50~11:20
Invited

**Nonreciprocal Second Harmonic Generation of 2D Magnet**
Shiwei Wu
*Fudan University, China*

**[ThA2-2]**
11:20~11:35

**Enantioselective Sensing Using Collective Resonance on a 2D Chiral Plasmonic Lattice**
Ji-Hyeok Huh[1], Ryeong Myeong Kim[2], Seokjae Yoo[3], Q-Han Park[1], Kitae Nam[2], and Seungwoo Lee[1]
*[1]Korea University, Korea, [2]Seoul National University, Korea, [3]University of Inha University, Korea*

**[ThA2-3]**
11:35~11:50

**Drift and Funnel Effects of Trions in Suspended $MoSe_2$ Monolayer**
Woo Hun Choi, Seong Won Lee, and Su-Hyun Gong
*Korea University, Korea*

## [ThB2] THz Spectroscopy II

Room B (Grand Ballroom 2, 2F) June 22 (Thu.) / 10:50~12:20

**Session Chiar(s)** Hyeong-Ryeol Park *(Ulsan Nat'l Inst. of Science and Tech., Korea)*
Teun-Teun Kim *(Univ. of Ulsan, Korea)*

**[ThB2-1]**
10:50~11:20
Invited

**Real-space Visualization of Spin Dynamics with Terahertz Polarimetric Imaging**
Taewoo Ha
*Sungkyunkwan University, Korea*

**[ThB2-2]**
11:20~11:50
Invited

**THz Antennas for the Application of Photo-excited Semiconductors**
Geunchang Choi
*Chung-Ang University, Korea*

**[ThB2-3]**
11:50~12:20
Invited

**Out-of-plane Radiation of the Topological Metasurfaces**
Ki Young Lee and Jae Woong Yoon
*Hanyang University, Korea*

## [ThC2] Near-field Optical Instrumentation II

Room C (Grand Ballroom 3, 2F) June 22 (Thu.) / 10:50~12:20

**Session Chiar(s)** Sangmin An *(Jeonbuk Nat'l Univ., Korea)*
Junghoon Jahng *(Korea Research Inst. of Standards and Science, Korea)*

**[ThC2-1]**
10:50~11:20
Invited

**Understanding the Electronic Structures of Two-Dimensional Monolayer Materials via the Control of Spatial Resolution**
Heesuk Rho
*Jeonbuk National University, Korea*

**[ThC2-2]**
11:20~11:50
Invited

**Real-space Mapping of Ultra-confined 'Image' Phonon-polaritons**
Sergey G. Menabde and Min Seok Jang
*Korea Advanced Institute of Science and Technology, Korea*

**[ThC2-3]**
11:50~12:05

**Probing the Optical Near-field Using Scanning Thermal Microscopy**
Kiin Nam[1], Hyuntae Kim[3], Woongkyu Park[2], Jaeseung Im[1], Jae Sung Ahn[2], and Soobong Choi[1]
*[1]Incheon National University, Korea, [2]Korea Photonics Technology Institute, Korea, [3]Park Systems Corporation, Korea*

**[ThC2-4]**
12:05~12:20

**Atomic Force Microscope-guided Nanoscale 3D Printing of Quantum Dots and in Situ Raman Spectroscopy**
Sangmin An
*Jeonbuk National University, Korea*

## [ThD2] Nano-optoelectronics IV

Room D (Sydney 1~3, 2F) June 22 (Thu.) / 10:50~12:20

**Session Chiar(s)** Dong-Ho Kang *(Gwangju Inst. of Science and Tech., Korea)*

**[ThD2-1]**
10:50~11:05

**Enhancing the Quantum Yield of Ultraviolet Emissive Ti2N MXene Quantum Dots by One-pot Solvothermal Synthesis**
Anir S. Sharbirin[1], Dinh Loc Duong[2], and Jeongyong Kim[1]
*[1]Sungkyunkwan University, Korea, [2]Montana State University, USA*

**[ThD2-2]**
11:05~11:20

**Elucidating the Optical Properties of Light-emitting $V_2N$ MXene Quantum Dots**
Sophia Akhtar, Jaspal Singh, Trang Thu Tran, Shrawan Roy, Eunji Lee, Zarmeena Akhtar and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[ThD2-3]** 11:20~11:35
**Freestanding Monolayer Transition Metal Dichalcogenides on Structured Template**
Hyun Jeong[1], Hyung Chan Suh[1], Ga Hyun Cho[1], Gilles Lerondel[2], and Mun Seok Jeong[1]
*[1]Hanyang University, Korea, [2]Université de Technologie de Troyes, France*

**[ThD2-4]** 11:35~11:50
**The Preparation of Transition Metal Dichalcogenides Colloidal Ink and Its Applications**
Dae Young Park[1], Duc Anh Nguyen[2], Kang-Nyeoung Lee[3], Jiseong Jang[3], Geunchang Choi[4], Heejun Yang[5], and Mun Seok Jeong[1]
*[1]Hanyang University, Korea, [2]Dongguk University, Korea, [3]Sungkyunkwan University, Korea, [4]Chung-Ang University, Korea, [5]Korea Advanced Institute of Science and Technology, Korea*

**[ThD2-5]** 11:50~12:05
**Physical Implementation of Ant Colony Intelligence in Colloidal Particle and Phase-Change Material System**
Bokusui Nakayama[1], Hikaru Nagase[1], Hiromori Takahashi[1], Yuta Saito[2], Shogo Hatayama[2], Kotaro Makino[2], Eiji Yamamoto[1], and Toshiharu Saiki[1]
*[1]Keio University, Japan, [2]National Institute of Advanced Industrial Science and Technology, Japan*

**[ThD2-6]** 12:05~12:20
**Resistive Memory Behavior of Defective Large-grain 2D Halide Perovskite Film**
Hyeon Jun Jeong, Taehoon Kim, Dong Hyeon Kim, Chan Kwon, Jieun Jo, and Mun Seok Jeong
*Hanyang University, Korea*

## [P1] Poster Session I

Grand Ballroom 4, 2F June 20 (Tue.) / 16:50~18:20

**[P1-01]** **Near-field Modulation of Single Photon Emitter with a Novel Plasmonic Probe**

Yunkun Wu and Xifeng Ren

*University of Science and Technology of China, China*

**[P1-02]** **Plasmon-Enhanced Charge Transfer in Graphene/Au-Nanopillar- Arrays**

Jungyoon Cho[1], Soyeong Kwon[2], Jungeun Song[1], Seoyoung Lim[1], Seawoo Moon[1], Jungtae Nam[3], Keun Soo Kim[3], and Dong-Wook Kim[1]

*[1]Ewha Womans University, Korea, [2]University of California Irvine, USA, [3]Sejong University, Korea*

**[P1-03]** **Vibrationally Hot Reactants in a Plasmon-Assisted Chemical Reaction**

Hyun-Hang Shin and Zee Hwan Kim

*Seoul National University, Korea*

**[P1-04]** **Orientational Change of Gold Nanorods with Synthetic Polymer Brush by Solvent Exchange**

Yu Sekizawa, Hideyuki Mitomo, Yusuke Yonamins, Takuya Isono, Kenji Tajima, Hirofumi Satoh, and Kuniharu IJiro

*Hokkaido University, Japan*

**[P1-05]** **Discrete Chiral Gold Nanorods with Tunable Chiroptical Activities by pH and Electric Potential Dual Modulation**

Han Lin[1], Hideyuki Mitomo[1], Yusuke Yonamine[1], Zhiyong Guo[2], and Kuniharu Ijiro[1]

*[1]Hokkaido University, Japan, [2]Ningbo University, Japan*

**[P1-06]** **Reflectance Spectroscopy of Optically Assembled Bio-nanoparticles with Plasmonic Nano-bowl Substrates**

Masatoshi Kanoda[1], Kota Hayashi[1], Yumiko Takagi[1], Mamoru Tamura[1,2], Seiju Hasegawa[3], Kohei Imura[3], Shiho Tokonami[1], and Takuya Iida[1]

*[1]Osaka Metropolitan University, Japan, [2]Osaka University, Japan, [3]Waseda University, Japan*

**[P1-07]** **Large-scale Optical Condensation on the Solid-liquid Interface with an Optical Fiber Module**

Kota Hayashi[1], Mamoru Tamura[1,2], Masazumi Fujiwara[1,2], Shiho Tokonami[1], and Takuya Iida[1]

*[1]Osaka Metropolitan University, Japan, [2]Osaka University, Japan*

**[P1-08]** **A Barrier Thickness Effects Study of Photoluminescence and Photoreflectance of InAs/GaSb Type-II MQW Structures**

Jae du Ha[1], Taein Kang[1], Jong Su Kim[1], and Sang Jun LEE[2]
*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P1-09]** **Electric Dipole Characteristics of Intermolecular Charge Transfer Excitons and Intramolecular Excitons in π-Conjugated Organic Materials**

Sang-hun Lee[1], Taek Joon Kim[1], Jeongyong Kim[2], and Jinsoo Joo[1]
*[1]Korea University, Korea, [2]Sungkyunkwan University, Korea*

**[P1-10]** **A Variable-Focus Metalens with Continuous Adjustment Capability**

Po-Sheng Huang[1], Shih-Hsiu Huang[1], Cheng Hung Chu[2], Takuo Tanaka[3], and Pin Chieh Wu[1]
*[1]National Cheng Kung University, Taiwan, [2]National Taiwan University, Taiwan, [3]RIKEN, Japan*

**[P1-11]** **Non-Destructive Analysis of Thickness of Thin Films using Home-built Spectroscopic Ellipsometry**

Heewoo Lee, Jaejoon Kim, and Soobong Choi
*Incheon National University, Korea*

**[P1-12]** **Plasmon-assisted Spectroscopy of 1-, 2-, 3- Layer $MoS_2$**

Kiin Nam[1], Jaeseung Im[1], Gan Hee Han[1], Jin Young Park[1], Hyuntae Kim[2], Sungjae Yoo[3], MohammadNavid Haddadnezhad[3], Sungho Park[3], Woongkyu Park[4], and Soobong Choi[1]
*[1]Incheon National University, Korea, [2]Park Systems Co., Korea, [3]Sungkyunkwan University, Korea, [4]Korea Photonics Technology Institute, Korea*

**[P1-13]** **Modulating Exciton States and Band Gap of $ReS_2$ by Oxygen Treatment**

Krishna P. Dhakal, Eunji Lee, Tran Viet Anh, Dinh Loc Duong, and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[P1-14]** **Nonlinear Polariton Parametric Oscillations in Coupled Microcavities**

Hyeon-Seo Choi, Hyeonjong Jeong, and Chang-Hee Cho
*Daegu Gyeongbuk Institute of Science and Technology, Korea*

**[P1-15]** **Circular Dichroism of Valley-polarized Excitons coupled with Propagating Waveguide Modes**

Jin-Woo Jung, Jiyeon Kim, Young-Jun Lee, and Chang-Hee Cho
*Daegu Gyeongbuk Institute of Science and Technology, Korea*

**[P1-16]** **Optical properties of anisotropic $GeSe_2$ nano flakes**

Eunji Lee[1], Krishna Dhakal Prasad[1], Hwayoung Song[2], Heenang Choi[3], Taek-Mo Chung[3], Dinh Loc Duong[1,4], Saeyong Oh[5], Hu Young Jeong[5], Kibum Kang[2], and Jeongyong Kim[1],

*[1]Sungkyunkwan University, Korea, [2]Korea Advanced Institute of Science and Technology, Korea, [3]Korea Research Institute of Chemical Technology, Korea, [4]Institute for Basic Science, Korea, [5]Ulsan National Institute of Science and Technology, Korea*

**[P1-17]** **Spectroscopic Visualization of Photonic Band Structure of Two-dimensional Dielectric Photonic Crystals by using Fourier-plane Scanning Measurement**

Changwon Seo[1], Eunji Lee[2], Jae Eon Shim[1], Siyul Lee[1], Sang Soon Oh[3], Gi-Ra Yi[4], Jeongyong Kim[2], and Teun-Teun Kim[1]

*[1]University of Ulsan, Korea, [2]Sungkyunkwan University, Korea, [3]Cardiff University, United Kingdom, [4]Pohang University of Science and Technology, Korea*

**[P1-18]** **Transmittance of Layered Perovskite in Terahertz range**

Junho Ryeom[1], Dae Young Park[1], Geunchang Choi[2], and Mun Seok Jeong[1]

*[1]Hanyang University, Korea, [2]Chung-Ang University, Korea*

**[P1-19]** **Measurement of Optical Dispersion Relations for Transition Metal Dichalcogenides Nanostructures**

Dong-Jin Shin, HyunHee Cho, and Su-Hyun Gong

*Korea University, Korea*

**[P1-20]** **The Reduction of Interfacial Defect Effect at 2D Semiconductor/ Dielectric via Low Adhesive Energy of Perfluorinated Polyether Layer**

Hyeong Chan Suh, Dae Young Park, Ju Chan Lee, DoHyeon Lee, Do Hyeong Kim, WooYeong Gang, and Mun Seok Jeong

*Hanyang University, Korea*

**[P1-21]** **Optical Characterization of Cubic and Pyramidal $MAPbBr_3$ Film formed by Perovskite Nano-seed**

Taehoon Kim[1], Hyeon Jun Jeong [1], Kim yejin[2], Ko seoyeon[2], Yoon seokhyun[2], and Mun Seok Jeong[1]

*[1]Hanyang University, Korea, [2]Ewha Womans University, Korea*

**[P1-22]** **Tip-induced Nanoscale Oxidation of Graphene in Aqueous Media**

Mingu Kang[1], Eunbeen Jeon[1], Meenakshi Rana[2], Sunmin Ryu[1], Yung Doug Suh[2,3], and Kyoung-Duck Park[1]

*[1]Pohang University of Science and Technology, Korea, [2]Ulsan National Institute of Science and Technology, Korea, [3]Institute for Basic Science, Korea*

**[P1-23]** **Investigating Heterogeneous Defects in Single-Crystalline $WS_2$ via Tip-Enhanced Raman Spectroscopy**

Sung Hyuk Kim[1,2], Chanwoo Lee[2], Byeong Geun Jeong[2], Dong Hyeon Kim[1,2], Seok Joon Yun[2,3], Wooseon Choi[2], Sung-Jin An[2], Dongki Lee[4], Young-Min Kim[2,3], Ki Kang Kim[2,3], Seung Mi Lee[5], and Mun Seok Jeong[1]

*[1]Hanyang University, Korea, [2]Sungkyunkwan University, Korea, [3]Institute for Basic Science, Korea, [4]Sejong University, Korea, [5]Korea Research Institute of Standards and Science, Korea*

**[P1-24]** **Topological Waveguide Gratings for Compact Coherent Perfect Absorbers**

Chan Young Park, Ki Young Lee, Jae Woong Yoon

*Hanyang University, Korea*

**[P1-25]** **Bright-Field and Edge-Enhanced Bioimaging using an Electrically Tunable Dual-mode Metalens**

Hyemi Park and Inki Kim

*Sungkyunkwan University, Korea*

**[P1-26]** **Ultrafast Photonic PCR with Metamaterial Perfect Absorber**

Seho Lee and Inki Kim

*Sungkyunkwan University, Korea*

**[P1-27]** **Metamaterial-assisted Fluorescence Correlation Spectroscopy**

Aleksandr Barulin, Hyemi Park, and Inki Kim

*Sungkyunkwan University, Korea*

**[P1-28]** **Metasurface-driven Multiplexed Nanospectrocopy via Plasmonic Resonance Energy Transfer**

Yangkyu Kim and Inki Kim

*Sungkyunkwan University, Korea*

**[P1-29]** **Advanced Tellurium/Graphene Heterostructures for Flexible IR Nanoscopy via CVD**

Zhiyi Lyu and Dae Joon Kang

*Sungkyunkwan University, Korea*

**[P1-30]** **Spectroscopic Characterization of Nanoplastics using Photo-induced Force Microscopy**

Sunho Lee[1,2], Seon Ae Hwangbo[1], Junghoon Jahng[1], Tae Geol Lee[1], and Eun Seong Lee[1]

*[1]Korea Research Institute of Standards and Science, Korea, [2]University of Illinois at Urbana-Champaign, USA*

**[P1-31]** **Electrically tunable exciton-polaritons in 2D semiconductor-based microcavity**

Young-Jun Lee, Jin-Woo Jung, Hyeon-Seo Choi, and Chang-Hee Cho

*Daegu Gyeonbuk Institute of Science and Technology, Korea*

**[P1-32]** **Ultrafast Melting of Au Nanorods Visualizing the Localized Surface Plasmons**

Eunyoung Park[1], Junha Hwang[1], Jaeyong Shin[1], Sung Yun Lee[1], Heemin Lee[1], Seung Phil Heo[1], Daewoong Nam[2], Sangsoo Kim[2], Min Seok Kim[2], In Tae Eom[2], Do Young Noh[3], and Changyong Song[1]

*[1]Pohang University of Science and Technology, Korea, [2]Pohang Accelerator Laboratory, Korea, [3]Gwangju Institute of Science and Technology, Korea*

**[P1-33]** **Optical Condensation of Mixture of Plasmonic Nanoparticle and Microparticles via DNA Hybridization**

Shuichi Toyouchi[1], Seiya Oomachi[1], Kota Hayashi[1], Yumiko Takagi[1], Mamoru Tamura[1,2], Shiho Tokonami[1], and Takuya Iida[1]

*[1]Osaka Metropolitan University, Japan, [2]Osaka University, Japan*

**[P1-34]** **The TMDc Fluorescence Lifetime Image by Pump-probe Microscopy**

Jin Yong Jeong, Jae Joon Kim, and Soobong Choi

*Incheon National University, Korea*

**[P1-35]** **Scattering Dynamics of Two-dimensional Polaritons**

Wonjae Choi and Q-Han Park

*Korea University, Korea*

## [P1] Poster Session II

Grand Ballroom 4, 2F June 21 (Wed.) / 16:50~18:20

**[P2-01]** **Investigate of Moiré Excitons of Stacked WSe2 Bilayer using by Near-Field Imaging**
Youngbum Kim, K. P. Dhakal, and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[P2-02]** **Manipulating the Fluorescence Contrast in Liquid-gel Phases**
Jia-Ru Yu[1,2], He-Chun Chou[1], Wei-Ssu Liao[2], and Chi Chen[1]
*[1]Academia Sinica, Taiwan, [2]National Taiwan University, Taiwan*

**[P2-03]** **Optical and Electrical Control of Nanoscale Metal-semiconductor Tunnel Junction**
Huitae Joo, Hyeongwoo Lee, Sujeong Kim, and Kyoung-Duck Park
*Pohang University of Science and Technology, Korea*

**[P2-04]** **The Bacterial Flagellar Motor through Torque Spectroscopy**
Vincent Manning, Maddison Beahm, Julia Kalynchuk, and Ilyong Jung
*Monmouth University, USA*

**[P2-05]** **Near-field Raman spectroscopy with multipolar Hamiltonian and real-time-TDDFT**
Takeshi Iwasa[1,2], Masato Takenaka[1], and Tetsuya Taketsugu[1]
*[1]Hokkaido University, Japan, [2]JST-PRESTO, Japan*

**[P2-06]** **Rough-Cut End Surface Effect on Signal-to-Noise Ratio in Fiber-Optic SERS Detection**
Seonung Kim, Minkyung Shin, Kyunghun Kim, and Dae Hong Jeong
*Seoul National University, Korea*

**[P2-07]** **Photoreflectance Study of InGaAs/InAsPSb Multiquantum Well Structure: Investigation of Optical Properties**
Behnam Zeinalvand Farzin[1], Jong Su Kim[1], Tae In Kang[1], Jaedu Ha[1], and Sang Jun Lee[2]
*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P2-08]** **Electrically Active Controllable Graphene Metasurface Phase Retarder**
Hyunwoo Park[1], Sodam Jeong[1], Hyeongi Park[1], Soojung Baek[2], and Teun-Teun Kim[1]
*[1]University of Ulsan, Korea, [2]Korea Advanced Institute of Science and Technology, Korea*

**[P2-09]** **Tunable THz Graphene Metasurface Beam Splitter**
Hyeongi Park[1], Sodam Jeong[1], Hyunwoo Park[1], Soojeong Baek[2], and Teun-Teun Kim[1]
*University of Ulsan, Korea*

**[P2-10]** **Plasmonic Contribution of Ag Nanowires Electrodes on Photovoltaic Performance of ZnO/NiO Heterojunctions**
Jungeun Song[1], Malkeshkumar Patel[2], Sara Evelyn Johannesson[1,3], Kayoung Cho[1], Jaehong Park[1], Joondong Kim[2], and Dong-Wook Kim[1]
*[1]Ewha Womans University, Korea, [2]Incheon National University, Korea, [3]University of Edinburgh, UK*

**[P2-11]** **Optical Characterizations of $WS_2$/Au and $WS_2$/Ag Structures Prepared by Metal-Assisted Exfoliation**
Eunseo Cho, Nahyun Kim, Anh Thi Nguyen, Seoyoung Lim, Jungeun Song, Jungyoon Cho, and Dong-Wook Kim
*Ewha Womans University, Korea*

**[P2-12]** **Energy and Charge Transfer between Monolayer WS2 and Ti2N MXene Quantum Dots**
Wendy B. Mato, Rebekah E. Kong, Anir S. Sharbirin, Jolene W. P. Khor, and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[P2-13]** **Anomalous Interlayer Coupling depending on the Twist Angle of $ReS_2$ Bilayers**
Trang Thu Tran[1], Taegeon Lee[2], Krishna P. Dhakal[1], Heesuk Rho[2], and Jeongyong Kim[1]
*[1]Sungkyunkwan University, Korea, [2]Jeonbuk National University, Korea*

**[P2-14]** **Deterministic Control of Electron Density in Atomically Thin Semiconductor**
Sujeong Kim[1], Hyeongwoo Lee[1], Seonhye Eom[2], Gangseon Ji[2], Huitae Joo[1], Soo Ho Choi[3], Ki Kang Kim[3], Hyeong-Ryeol Park[2], and Kyoung-Duck Park[1]
*[1]Pohang University of Science and Technology, Korea, [2]Ulsan National Institute of Science and Technology, [3]Center for Integrated Nanostructure Physics, Korea*

**[P2-15]** **Prediction of Quantum Yields of 2D-Transition Metal Dichalcogenides by Machine Learning**
Jolene W. P. Khor, Trang Thu Tran, Anir S. Sharbirin, and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[P2-16]** **Prediction of Quantum Yields of MXene Quantum Dots by Machine Learning**
Shamima Afroz, Jolene W. P. Khor, and Jeongyong Kim
*Sungkyunkwan University, Korea*

**[P2-17]** **UV-excited Photoluminescence of 0D-2D Heterostructures**

Rebekah E. Kong, Wendy B. Mato, Anir S. Sharbirin, Jolene W. P. Khor, and Jeongyong Kim

*Sungkyunkwan University, Korea*

**[P2-18]** **Patternable MXene ($Ti_3C_2$) Electrodes for Flexible Optoelectronic Devices**

Jiseong Jang[1], Dae Young Park[2], Hyeon Jung Park[2], and Mun Seok Jeong[2]

*[1]Sungkyunkwan University, Korea, [2]Hanyang University, Korea*

**[P2-19]** **The Variation of Optical Properties in the Hydrothermally Synthesized 2D Tellurium by Laser Treatment**

In Cheol Choi[1,2], Dae Young Park[2], Kang-Nyeoung Lee[1], Dong Hyeon Kim[1,2], Chae Won Lee[2], Hyung Mo Jeong[1], and Mun Seok Jeong[2]

*[1]Sungkyunkwan University, Korea, [2]Hanyang University, Korea*

**[P2-20]** **$MAPbBr_3$ Perovskite Quantum Dots Size Effect with Polarity of Solvent**

SeongOn Park[1,2], DoKyum Kim[2], Clare C. Byeon[1], and Chang-Lyoul Lee[2]

*[1]Kyungpook National University, Korea, [2]Gwangju Institute of Science and Technology, Korea*

**[P2-21]** **Elimination of Unavoidable Doping Effects by Passivation Layers in InSe FET via CYTOP/TFSI Composite Treatment**

Chan Kwon, Hyeon Jung Park, Ji eun Jo, Dae Young Park, and Mun Seok Jeong

*Hanyang University, Korea*

**[P2-22]** **Investigating the Influence of Surface Schottky Barriers on Localized Optoelectronic Properties of $MoS_2$**

Deogkyu Choi[1], Juchan Lee[1], Chaewon Lee[1], Chan Kwon[1], Jieun Jo[1], Seungho Bang[1], Hyeon Jung Park[1], Dae Young Park[1], Yo Seob Won[2], Soo Ho Choi[2], Ki Kang Kim[2], and Mun Seok Jeong[1]

*[1]Hanyang University, Korea, [2]Sungkyunkwan University, Korea*

**[P2-23]** **The Stability Investigation of Polymer-Dopant Composite-coated Post-Transition Metal Chalcogenide**

Ji Eun Jo, Dae Young Park, Chan Kwon, Hyeon Jung Park, and Mun Seok Jeong

*Hanyang University, Korea*

**[P2-24]** **Dark Excitons from $WSe_2$ Monolayer on the Au Micro-pillar Structures**

Ga Hyun Cho, Hyun Jeong, Hyeong Chan Suh, and Mun Seok Jeong

*Hanyang University, Korea*

**[P2-25]** **The band gap widening of 2D Tellurium via the formation of $TeO_2$**

Chaewon Lee[1], Dae Young Park[1], In Cheol Choi[2], and Mun Seok Jeong[1]

*[1]Hanyang University, Korea, [2]Sungkyunkwan University, Korea*

**[P2-26]** **Optical Characterization of GaSb Buffer for Growth of InAs/GaSb Superlattice**

Jong Won Cha[1], Tae In Kang[1], JaeDu Ha[1], Gyoung Du Park[1], Jong Su Kim[1], and Sang Jun Lee[2]

*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P2-27]** **A Study on the Defect Density of InAsP Metamorphic Buffer Structure using Photoreflectance Spectroscopy**

Gyoung Du Park[1], Jae Du ha[1], Tae In Kang[1], Jong Su Kim[1], and Sang Jun Lee[2]

*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P2-28]** **Investigate the Optical and Electrical Properties of InGaAs, and InAsP Extended SWIR Detector**

Jiseong Go[1], Taein Kang[1], Jaedu Ha[1], Jongsu Kim[1], Youngho Kim[2], Jieun Kang, and Sangjun Lee[2]

*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P2-29]** **Eight-Band k.p Theory for $GaAs/Ga_{0.75}Al_{0.25}As$ Superlattice**

S. Bahareh Seyedein Ardebili and Jong Su Kim

*Yeungnam University, Korea*

**[P2-30]** **Comparison of Transient Photovoltage Decay on Recombination Process for p-i-n and nBn Photodetector**

Taein Kang[1], Jiseong Go[1], Jaedu Ha[1], Jongsu Kim[1], Jieun Kang[2], and Sangjun Lee[2]

*[1]Yeungnam University, Korea, [2]Korea Research Institute of Standards and Science, Korea*

**[P2-31]** **High-Performance and Lithography-Free $WS_2$-based Vertical Heterostructures Photovoltaic Devices**

Anh Thi Nguyen, Eunseo Cho, Seoyoung Lim, Jungeun Song and Dong-Wook Kim

*Ewha Womans University, Korea*

**[P2-32]** **Studies of Exciton-Plasmon Coupling in WS2/Au-Nanogratings**

Seoyoung Lim, Anh Thi Nguyen, Eunseo Cho, Jungyoon Cho, Jungeun Song, and Dong-Wook Kim

*Ewha Womans University, Korea*

**[P2-33]** **Investigating the Influence of Temperature-dependent Anti-Solvent Treatment and Turbidity Point on Perovskite Solar Cell Efficiency**

Hyojung Kim[1], Jaegwan Sin[1], Mijoung Kim[1], Moonhoe Kim[1], Jeonghun Shin[2], Jinpyo Hong[2], and JungYup Yang[1]
*[1]Kunsan National University, Korea, [2]Hanyang University, Korea*

**[P2-34]** **Enhancing Efficiency and Stability of Triple-Cation Perovskite Solar Cells with the 1,3,7-rimethylxanthine Additive**

MiJoung Kim, Hyojung Kim, Jaegwan Sin, MoonHoe Kim, Jaeho Kim, Hana Kang, and JungYup Yang
*Kunsan National University, Korea*

**[P2-35]** **Incorporation of UV-enhanced MXene Quantum Dots in Photodetectors**

Zarmeena Akhtar, Sophia Akhtar, Anir S. Sharbirin, Wendy B. Mato, Rebekah Esther, and Jeongyong Kim
*Sungkyunkwan University, Korea*