

# Program at a Glance

February 21 (Tue.)	
16:00 ~ 18:00	Registration
17:30 ~ 19:30	Welcome Reception Party

February 22 (Wed.)			
	Halla Hall A	Samda Hall A	Samda Hall B
09:00 ~ 09:15	Opening Ceremony		
09:15 ~ 10:00	Plenary Session 01		
10:00 ~ 10:15	Coffee Break		
10:15 ~ 11:55	Technical Session 01 On-body Sensor Devices for Healthcare	Technical Session 02 Microfluidic Sample Treatment for Bioimaging	Technical Session 03 OCT and Microscopy
11:55 ~ 13:30	Lunch Break		
13:30 ~ 14:15	Plenary Session 02		
14:15 ~ 14:30	Coffee Break		
14:30 ~ 16:10	Technical Session 04 Immunoaffinity Biosensors for Biomedical Applications	Technical Session 05 Bionano Materials for Nanomedicine I	Technical Session 06 Wearable Sensing Technology
16:10 ~ 17:50	Technical Session 07 Electrochemical Sensors Based on Nanomaterials and Nanodevices	Technical Session 08 Bionano Materials for Nanomedicine II	Technical Session 09 Nanoscale Imaging & Detection
17:50 ~ 19:00	Poster Session		

February 23 (Thu.)			
	Halla Hall A	Samda Hall A	Samda Hall B
09:00 ~ 09:45	Plenary Session 03		
09:45 ~ 10:00	Coffee Break		
10:00 ~ 11:40	Technical Session 10 DNA & Protein Biosensor	Technical Session 11 Miniaturized Biosensing Device	Technical Session 12 Optical Coherence and Photo-Acoustic Tomography
11:40 ~ 13:00	Lunch Break		
13:00 ~ 13:45	Plenary Session 04		
13:45 ~ 14:00	Coffee Break		
14:00 ~ 15:40		Technical Session 13 SERS-based Biosensor	Technical Session 14 Optical Endoscopy and Miniaturized Imaging Optics
15:40 ~ 17:20		Technical Session 15 Advanced Bioimaging	Technical Session 16 Cell-based Bioimaging and Bacteria Sensor
17:20 ~ 17:35	Coffee Break		
17:35 ~ 18:20	Plenary Session 05		
19:00 ~ 21:00	Banquet		

February 24 (Fri.)			
	Halla Hall A	Samda Hall A	Samda Hall B
09:00 ~ 09:45	Plenary Session 06		
09:45 ~ 10:00	Coffee Break		
10:00 ~ 11:40	Technical Session 17 Emerging Technology in Medical Diagnostics	Technical Session 18 Emerging Technology in Nanobio Sensor	
11:45 ~ 12:00	Closing Ceremony		

# Technical Session

## Session 01 On-body Sensor Devices for Healthcare

- **Room** : Halla Hall A
- **Time schedule** : February 22 (Wednesday), 10:15 ~ 11:55
- **Chair** : Prof. Nae-Eung Lee (Sungkyunkwan University)

Time	ID	Title	Author & Affiliation
10:15 ~ 10:40	TS-01	Sweat-based Glucose Treatment System	Prof. Dae-Hyeong Kim (Seoul National University)
10:40 ~ 11:05	TS-02	Transient Electronics: Biocompatible/Biodegradable Electronic Devices Dissolve in Body, Environment	Prof. Suk-Won Hwang (Korea University)
11:05 ~ 11:30	TS-03	Highly Durable, Ultrasensitive Nanoscale Crack Based Sensor Inspired by Spider's Sensory Organ	Prof. Tae-il Kim (Sungkyunkwan University)
11:30 ~ 11:55	TS-04	Flexible and Stretchable Sensors Based on Nanomaterials for Wearable Electronics	Dr. Trung Tran Quang (Sungkyunkwan University)

## Session 02 Microfluidic Sample Treatment for Bioimaging

- **Room** : Samda Hall A
- **Time schedule** : February 22 (Wednesday), 10:15 ~ 11:55
- **Chair** : Prof. Hyo-il Jung (Yonsei University)

Time	ID	Title	Author & Affiliation
10:15 ~ 10:40	TS-05	A Novel Nucleic Acids Extraction Method with a Thin Film Microfluidic Platform	Prof. Yong Shin (University of Ulsan College of Medicine)
10:40 ~ 11:05	TS-06	Microfluidic Approaches for Engineering Better Electro-membrane Desalination	Dr. Rhokyun Kwak (Korea Institute of Science and Technology)
11:05 ~ 11:30	TS-07	Isolation of Extracellular Vesicles for Diagnostic Purpose	Prof. Jaesung Park (Pohang University of Science and Technology)
11:30 ~ 11:55	TS-08	Enhanced Drug Resistance in Tumors on Cancer Resistance Accelerator Chip	Prof. Sungsu Park (Sungkyunkwan University)

# Technical Session

## Session 03 OCT and Microscopy

- **Room** : Samda Hall B
- **Time schedule** : February 22 (Wednesday), 10:15 ~ 11:55
- **Chair** : Prof. Beop-Min Kim (Korea University)

Time	ID	Title	Author & Affiliation
10:15 ~ 10:40	TS-09	Quantitative Image Analysis for Investigating Cell-Matrix Interactions	Prof. Jacob Notbohm (University of Wisconsin-Madison)
10:40 ~ 11:05	TS-10	Wavefront Engineering for In-vivo Deep Brain Imaging	Prof. Jung-Hoon Park (Ulsan National Institute of Science & Technology)
11:05 ~ 11:30	TS-11	20-nm Resolution Imaging of Biological Specimens by Next-generation Expansion Microscopy	Prof. Jae-Byum Chang (Sungkyunkwan University)
11:30 ~ 11:55	TS-12	Quantitative Phase Microscopy for Quantifying Optical Anisotropy of Biological Specimens	Prof. Youngwoon Choi (Korea University)

## Session 04 Immunoaffinity Biosensors for Biomedical Applications

- **Room** : Halla Hall A
- **Time schedule** : February 22 (Wednesday), 14:30 ~ 16:10
- **Chair** : Prof. Jae-Chul Pyun (Yonsei University)

Time	ID	Title	Author & Affiliation
14:30 ~ 14:50	TS-13	Development of Luminescence Resonance Energy Transfer (LRET) Biosensors Based on Upconversion Nanoparticles	Prof. Min-gon Kim (Gwangju Institute of Science and Technology)
14:50 ~ 15:10	TS-14	BioNano Health GUARD	Dr. Yong Beom Shin (Korea Research Institute of Bioscience and Biotechnology)
15:10 ~ 15:30	TS-15	Nonspectroscopic Biosensing Approach Using Retroreflective Janus Microparticles	Prof. Hyun Chul Yoon (Ajou University)
15:30 ~ 15:50	TS-16	Nanoparticle Integrated Biosensing Technology for Biomedical and Environmental Diagnostics	Prof. Hye-Jin Lee (Kyungpook National University)
15:50 ~ 16:10	TS-17	Thermal Stable-Soluble Protein as a Biomarker to Detect Food Allergens and Adulteration	Prof. Won-Bo Shim (Gyeongsang National University)

# Technical Session

## Session 05 Bionano Materials for Nanomedicine I

- **Room** : Samda Hall A
- **Time schedule** : February 22 (Wednesday), 14:30 ~ 16:10
- **Chair** : Prof. Jinho Hyun (Seoul National University)

Time	ID	Title	Author & Affiliation
14:30 ~ 14:50	TS-18	Hygroresponsive Biomimetic Actuators	Prof. Lidong Zhang (East China Normal University)
14:50 ~ 15:10	TS-19	Cutaneous Delivery of Biomacromolecules Using Microneedle Arrays	Prof. Ji Hoon Jeong (Sungkyunkwan University)
15:10 ~ 15:30	TS-20	Progress of Cellulose Based Sensor Applications and Its Potential	Prof. Joo-Hyung Kim (Inha University)
15:30 ~ 15:50	TS-21	An 1,8-naphthalimide-bearing Chemical Probe for TNP Sensing	Prof. Pil Seok Chae (Hanyang University)
15:50 ~ 16:10	TS-22	Applications of Emerging Technologies for Food Processing	Prof. Dong-Hyun Kang (Seoul National University)

## Session 06 Wearable Sensing Technology

- **Room** : Samda Hall B
- **Time schedule** : February 22 (Wednesday), 14:30 ~ 16:10
- **Chair** : Dr. Chang Woo Yoon (Electronics and Telecommunications Research Institute)

Time	ID	Title	Author & Affiliation
14:30 ~ 14:55	TS-23	Wearable IT Convergence Technology Making Imaginary Life to Reality	Dr. Chang Woo Yoon (Electronics and Telecommunications Research Institute)
14:55 ~ 15:20	TS-24	Organic Electronic Circuits for Flexible and Printed Wearable Sensors	Prof. Kang-Jun Baeg (Pukyong National University)
15:20 ~ 15:45	TS-25	Production of Tiny Particles by Simple Emulsifications	Prof. Yo Han Choi (Electronics and Telecommunications Research Institute)
15:45 ~ 16:10	TS-26	Advanced Noise Reduction Algorithm of Fluorescence Signal in Various Microarray Chips or Rapid Kits	Dr. Sookyung Kim (Nanobiolife Inc.)

# Technical Session

## Session 07 Electrochemical Sensors Based on Nanomaterials and Nanodevices

- **Room** : Halla Hall A
- **Time schedule** : February 22 (Wednesday), 16:10 ~ 17:50
- **Chair** : Prof. Joohoon Kim (Kyung Hee University)

Time	ID	Title	Author & Affiliation
16:10 ~ 16:35	TS-27	Nanoarchitected Electrochemical Cytosensors for Sensitive and Selective Detection of Cancer Cells and Cell-associated Biomarkers	Prof. Jun-Jie Zhu (Nanjing University)
16:35 ~ 17:00	TS-28	Biological Sensing and Imaging Using Gold Nanoclusters	Prof. Dongil Lee (Yonsei University)
17:00 ~ 17:25	TS-29	Electrochemical Biosensors Based on Redox Cycling	Prof. Haesik Yang (Pusan National University)
17:25 ~ 17:50	TS-30	Nanoporous Electrochemistry in Embryo Brain	Prof. Taek Dong Chung (Seoul National University)

## Session 08 Bionano Materials for Nanomedicine II

- **Room** : Samda Hall A
- **Time schedule** : February 22 (Wednesday), 16:10 ~ 17:50
- **Chair** : Prof. Dong Woo Lim (Hanyang University)

Time	ID	Title	Author & Affiliation
16:10 ~ 16:35	TS-31	Plasmonics-Based Light Absorbers for Potential Bioapplications	Prof. Xinheng LI (Chinese Academy of Sciences)
16:35 ~ 17:00	TS-32	Optical Biosensing on Fluorescent 2D-Nanosheets	Prof. Jong-Ho Kim (Hanyang University)
17:00 ~ 17:25	TS-33	Plasmonic Nanosensor: Synthesis, Assembly and Signal Amplification	Prof. Donghwan Kim (Sungkyunkwan University)
17:25 ~ 17:50	TS-34	Fabrication of Uniform Colloidal Pressure Sensors for E-skin	Prof. Jin Woong Kim (Hanyang University)

# Technical Session

## Session 09 Nanoscale Imaging & Detection

- **Room** : Samda Hall B
- **Time schedule** : February 22 (Wednesday), 16:10 ~ 17:50
- **Chair** : Prof. Donghyun Kim (Yonsei University)

Time	ID	Title	Author & Affiliation
16:10 ~ 16:35	TS-35	Raman Imaging of Molecular Dynamics during Cellular Events	Prof. Katsumasa Fujita (Osaka University)
16:35 ~ 17:00	TS-36	Single-nanoparticle Detection in High-Q Optical Microcavities: from Reactive to Dissipative Interactions	Prof. Yun-Feng Xiao (Peking University)
17:00 ~ 17:25	TS-37	Personalized Diagnosis of Cancers Guided by Single-Molecule Imaging	Prof. Tae-Young Yoon (Yonsei University)
17:25 ~ 17:50	TS-38	Synthesis and Surface-enhanced Raman Scattering of Mesoscopic Star-Shaped Gold Particles	Prof. Seunghyun Lee (University of Suwon)

## Session 10 DNA & Protein Biosensor

- **Room** : Halla Hall A
- **Time schedule** : February 23 (Thursday), 10:00 ~ 11:40
- **Chair** : Prof. Kyubong Jo (Sogang University)

Time	ID	Title	Author & Affiliation
10:00 ~ 10:20	TS-39	DNA Sensing by Nanopillars, Nanowires, and Nanoslits	Prof. Noritada Kaji (Nagoya University)
10:20 ~ 10:40	TS-40	Enhanced Abnormal Transport of DNA in More Crowded Environments	Dr. Yeng-Long Chen (Academia Sinica)
10:40 ~ 11:00	TS-41	Synthesis and Photoluminescence Properties of Novel Nitrogen-rich Quantum Dots and Their Applications	Prof. Xinjing Tang (Peking University)
11:00 ~ 11:20	TS-42	A Significant Enhancement of Color Transition from an On-off Type Achromatic Colorimetric Nanosensor for Highly Sensitive Multi-analyte Detection with the Naked Eye	Prof. Jung Heon Lee (Sungkyunkwan University)
11:20 ~ 11:40	TS-43	Genetically Encoded FRET Sensors Using a Fluorescent Unnatural Amino Acid as a FRET Donor	Prof. Hyun-soo Lee (Sogang University)

# Technical Session

## Session 11 Miniaturized Biosensing Device

- **Room** : Samda Hall A
- **Time schedule** : February 23 (Thursday), 10:00 ~ 11:40
- **Chair** : Prof. Haesik Yang (Pusan National University)

Time	ID	Title	Author & Affiliation
10:00 ~ 10:25	TS-44	Modified Naphthalene Diimide as a Suitable Tetraplex DNA Ligand: Application to Cancer Diagnosis and Anti-cancer Drug	Prof. Shigeori Takenaka (Kyushu Institute of Technology)
10:25 ~ 10:50	TS-45	Development and Evaluation of Analytical Performance for FREN <sup>TM</sup> -SAA and FREN <sup>TM</sup> -Hp	Dr. Sun-Mi Han (NanoEnTek Inc.)
10:50 ~ 11:15	TS-46	Role of Nanoparticulate Materials in the Diagnosis Based on Lateral Flow Immunoassay	Dr. Chang-Woo Lee (Boditech Med Inc.)
11:15 ~ 11:40	TS-47	Assaying C-reactive Protein (CRP) in a $\mu$ -Capillary Tube	Dr. Young J Kim (ETRI)

## Session 12 Optical Coherence and Photo-Acoustic Tomography

- **Room** : Samda Hall B
- **Time schedule** : February 23 (Thursday), 10:00 ~ 11:40
- **Chair** : Prof. Chang-Seok Kim (Pusan National University)

Time	ID	Title	Author & Affiliation
10:00 ~ 10:20	TS-48	Advances in Integrated Multimodality Intravascular Imaging for Assessing and Characterizing Atherosclerotic Plaques	Prof. Zhongping Chen (University of California at Irvine)
10:20 ~ 10:40	TS-49	Non-destructive Detection Capability of Optical Coherence Tomography for Agricultural Applications	Prof. Mansik Jeon (Kyungpook National University)
10:40 ~ 11:00	TS-50	Listening to Light and Seeing Through: In Vivo Multiscale Photoacoustic Imaging	Prof. Chulhong Kim (Pohang University of Science and Technology)
11:00 ~ 11:20	TS-51	Swept Source Optical Coherence Tomography Probe in Dentistry	Dr. Joo Beom Eom (Korea Photonics Technology Institute)
11:20 ~ 11:40	TS-80	Intravascular Imaging of Atherosclerosis In Vivo	Tae-Hoon Kim (Catholic University)

# Technical Session

## Session 13 SERS-based Biosensor

- **Room** : Samda Hall A
- **Time schedule** : February 23 (Thursday), 14:00 ~ 15:40
- **Chair** : Dr. Sangmi Jun (Korea Basic Science Institute)

Time	ID	Title	Author & Affiliation
14:00 ~ 14:20	TS-52	Feasibility of Hyphenating Field Flow Fractionation with SERS for Bio-analytical Detection	Prof. Hoeil Chung (Hanyang University)
14:20 ~ 14:40	TS-53	Application of 2D Correlation Spectroscopy in Biological Science	Prof. Young Mee Jung (Kangwon National University)
14:40 ~ 15:00	TS-54	Nanobio Sensing Using Gold Nanowire	Dr. Taejoon Kang (Korea Research Institute of Bioscience and Biotechnology)
15:00 ~ 15:20	TS-55	Surface-enhanced Raman Scattering Monitoring of Glutathione-triggered Anticancer Drug Release in a Single Cell	Prof. Sang Woo Joo (Soongsil University)
15:20 ~ 15:40	TS-56	Identification of Newly Emerging Influenza Viruses by Surface-Enhanced Raman Spectroscopy	Prof. Kwang-il Lim (Sookmyung Women's University)

## Session 14 Optical Endoscopy and Miniaturized Imaging Optics

- **Room** : Samda Hall B
- **Time schedule** : February 23 (Thursday), 14:00 ~ 15:40
- **Chair** : Prof. Ki-Hun Jeong (Korea Advanced Institute of Science and Technology)

Time	ID	Title	Author & Affiliation
14:00 ~ 14:25	TS-57	Endoscopes with Ultra-compact Solid Tunable Lenses	Prof. Guangya Zhou (National University of Singapore)
14:25 ~ 14:50	TS-58	Two-photon Microscopy Using Moxifloxacin as a Cell Labeling Agent	Prof. Ki Hean Kim (Pohang University of Science and Technology)
14:50 ~ 15:15	TS-59	Real-time Intravital Microscopy for Biomedical Research	Prof. Pilhan Kim (Korea Advanced Institute of Science and Technology)
15:15 ~ 15:40	TS-60	MEMS Technologies for Optical Coherence Tomography	Dr. Nicolas Lafitte (The University of Tokyo)



# Technical Session

## Session 15 Advanced Bioimaging

- **Room** : Samda Hall A
- **Time schedule** : February 23 (Thursday), 15:40 ~ 17:20
- **Chair** : Prof. Joon Myong Song (Seoul National University)

Time	ID	Title	Author & Affiliation
15:40 ~ 16:00	TS-61	Optical Biosensor Based on Single Nanoparticle	Prof. Sang Jun Sim (Korea University)
16:00 ~ 16:20	TS-62	Eye-on-a-Chip: an <i>In Vitro</i> Choroidal Neovascularization Model	Prof. Noo Li Jeon (Seoul National University)
16:20 ~ 16:40	TS-63	Plasmonic Nanostructures for Advanced Optical Sensing and Therapy	Prof. Dong Ha Kim (Ewha Womans University)
16:40 ~ 17:00	TS-64	Hyperpolarized Magnetic Resonance Imaging and Spectroscopy	Prof. Youngbok Lee (Hanyang University)
17:00 ~ 17:20	TS-65	Highly Sensitive SERS Based Microfluidic Detection of Biomarker	Prof. Rongke Gao (Hefei University of Technology)

## Session 16 Cell-Based Bioimaging and Bacteria Sensor

- **Room** : Samda Hall B
- **Time schedule** : February 23 (Thursday), 15:40 ~ 17:20
- **Chair** : Prof. Sang Uck Lee (Hanyang University)

Time	ID	Title	Author & Affiliation
15:40 ~ 16:00	TS-66	Cell-Based Bioimaging as a Tool for Evaluation of Apoptosis and Cytotoxicity	Prof. Eun Kyu Lee (Hanyang University)
16:00 ~ 16:20	TS-67	Rapid Detection of Single Bacteria in Unprocessed Blood Using Integrated Droplet Microfluidics	Prof. Dong-Ku Kang (Incheon National University)
16:20 ~ 16:40	TS-68	Towards Non-invasive, High-resolution 3D Nano-tomography by Ultrasonic Scanning Probe Microscopy	Prof. Seonghwan Kim (University of Calgary)
16:40 ~ 17:00	TS-69	Graphene-based Inorganic-organic Composite Nanostructures for Photonics-based Biosensing	Prof. Dong Woo Lim (Hanyang University)
17:00 ~ 17:20	TS-70	Immunoassays and Biosensors Based on Z-domains Autodisplaying <i>E. coli</i>	Prof. Min Park (Hallym University)

# Technical Session

## Session 17 Emerging Technology in Medical Diagnostics

- **Room** : Halla Hall A
- **Time schedule** : February 24 (Friday), 10:00 ~ 11:40
- **Chair** : Prof. Dong-Ku Kang (Incheon National University)

Time	ID	Title	Author & Affiliation
10:00 ~ 10:25	TS-71	Sol Gel Capturing Technology (SG Cap™ Technology): Clinical Application for Multiple High Risk Virus Screening	Prof. Soyoun Kim (PCL Inc., Dongguk University)
10:25 ~ 10:50	TS-72	The Potential of Wide-field Quantitative Phase Microscopy for Multi-scale Histopathology	Prof. Woong-gyu Jung (Ulsan National Institute of Science and Technology)
10:50 ~ 11:15	TS-73	Light-emitting Diode-based Shifted-excitation Raman Difference Spectroscopy in Cirrhosis-induced Liver Lesions	Prof. Jeung Hee An (Konkuk University)
11:15 ~ 11:40	TS-74	Nanopore-enhanced Nanomechanical Infrared Spectroscopy	Dr. Dongkyu Lee (Korea Institute of Machinery & Materials)

## Session 18 Emerging Technology in Nanobio Sensor

- **Room** : Samda Hall A
- **Time schedule** : February 24 (Friday), 10:00 ~ 11:40
- **Chair** : Prof. Dong-Soo Shin (Hanyang University)

Time	ID	Title	Author & Affiliation
10:00 ~ 10:20	TS-75	Designable Synthesis of Metal Nanoparticles for Bio-sensing and Imaging	Dr. Xingyi Ma (Korea University)
10:20 ~ 10:40	TS-76	Predicting Drug Carrier Concentration in the Microvasculature by Using Microfluidic Channel Experiments	Dr. Tae-Rin Lee (Seoul National University)
10:40 ~ 11:00	TS-77	GluLiner, a Continuous Glucose Monitoring System Using Hydrogel-Based Glucose Oxidase Sensors	Dr. Junhoe Cha (ENGAIN Co. Ltd.)
11:00 ~ 11:20	TS-78	Electronically Tuned Structure Variation of New Sulfonamide-based Probes for Nanomolar Detection of Ga <sup>3+</sup> or Al <sup>3+</sup> in Aqueous Solution	Dr. Ashwani Kumar (Hanyang University)
11:20 ~ 11:40	TS-79	Real-time Shape Sensing Utilizing Evanescent Field from Microfiber Sensor	Dr. Amirah Abd Latif (Universiti Putra Malaysia)