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# **Education and Experiences**

***Department of Chemistry, College of Natural Sciences, Seoul National University, Seoul, South Korea***

**Assistant Professor: 2006-2010**

**Associate Professor: 2010-2015**

**Full Professor: 2015-Current**

***College of Natural Sciences, Seoul National University***

**Associate Dean (Planning & Public Relations): 2024-Current**

**Director, SNU Science Outreach Center: 2024-Current**

***Emocog, Inc.***

**Outside Director: 2023-Current**

***National Center for Inter-University Research Facilities, Seoul National University***

**Head, Department of Education & Training: 2018-2022**

***Samsung Electronics Future Technology Committee***

**Committee Member: 2019-2021**

***Department of Chemistry, College of Natural Sciences, Seoul National University***

**Vice Chair (Planning): 2019-2021**

***Stanford University (2023-2024), City University of Hong Kong (2023), National University of Singapore (2022), Samsung Advanced Institute of Technology (2020), UC Berkeley (2018), Peking University (2016), The University of Tokyo (2016), Hong Kong Polytechnic University (2016), Nanyang Technological University (2015, Institute of Physics, Chinese Academy of Sciences (2014) & National University of Singapore (2013)***

**Visiting Professor**

***Center for Innovative Nanomedical Technologies, Bio-MAX Institute, Seoul National University***

**Director: 2016-2019**

***Division of Research Affairs, Bio-Max Institute, Seoul National University***

**Division Leader: 2015-2016**

***Young Korean Academy of Science and Technology (Y-KAST)***

**Vice-Chair & Founding Division Leader, Division of Science, Y-KAST: 2017-2019**

***Scientific Advisory Board Member, Medifron Digital Biotech*: 2006 – 2009**

***Nanosphere, Inc., Northbrook, IL*: 2004**

**Consultant**

Department of Chemistry, University of California, Berkeley, CA, USA: Oct 2004 – Dec 2005

Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, USA: Oct 2004 – Dec 2005

**LBNL Postdoctoral Research Fellow (Research Advisor: Professor Jay T. Groves)**

● Research on Functional Membrane-Based Cell Assays and Nanostructure-Based Biodiagnostics

***Northwestern University, Evanston, IL, USA: Sept 2000 – Aug 2004***

**Ph.D. in Chemistry (Research Advisors: Professor Chad A. Mirkin for Experiment and Professor Mark A. Ratner for Theory)**

**Thesis Title: Encoded Nanostructures for the Ultrasensitive Detection of Biomolecules**

● Mentor, Research Experience for Teachers of Nanoscale Science and Engineering Center (RET-NSEC)

Program, Northwestern University: July 2002 - August 2002 and July 2003 - August 2003.

● President of Korean Student Association at Northwestern University, September 2001- September 2002.

***Hanyang University, Seoul, South Korea: Sept 1998 - Aug 2000***

**M.S. in Chemistry (Research Advisor: Professor Youngdo Won)**

**Thesis Title: Quantitative Structure-Activity Relationships of Benzo[a]pyrene Mutagens: Physicochemical Study and Molecular Field Analysis.**

***2nd Infantry Division, 8th United States Army: 1996 – 1998***

Served as a Senior Noncommissioned Officer in S-4 (Budget Officer) of Headquarters of the 2nd Forward Support

Battalion, 2nd Infantry Division, 8th U. S. Army [Korean Augmentation To the United States Army (KATUSA)].

***Hanyang University, Seoul, South Korea: 1992 – 1996***

**B.S. in Chemistry (Thesis Title: Monte Carlo Simulation on Helium Atoms)**

# **Honors and Awards**

● **Fellow, The Korean Academy of Science and Technology**: 2024

● **Minister’s Award for Outstanding Research Achievement,** The Ministry of Science & ICT, Republic of

Korea: 2022

● **Outstanding Inorganic Chemist Award**, Division of Inorganic Chemistry, Korean Chemical Society: 2022

● **SNU Excellence in Research Award,** The President of Seoul National University: 2021

● **Minister’s Award for** **the Contribution to Advances in Basic Science,** The Ministry of Science & ICT,

Republic of Korea: 2017

● **Founding Member, Young Korean Academy of Science and Technology** (Y-KAST): 2017-2019

● **Outstanding Researcher Award**, BioNano Health Guard Research Center, Ministry of Science, ICT and Future Planning, South Korea: 2015

● **Chinese Academy of Sciences Fellowship for International Scientists**, Chinese Academy of Sciences: 2014-

2015

● **Asian Rising Stars**, The 15th Asian Chemical Congress: 2013

● **Distinguished Lectureship Award**, Asian International Symposium, the Chemical Society of Japan: 2013

● **Elected Member, Global Young Academy**: 2013-2019

● **Young Scientists, The World Economic Forum**: 2013

● **Presidential Young Scientist Award**, The President of the Republic of Korea: 2012

● **Frontier Scientist**, the Korean Academy of Science and Technology: 2012-2016

● **Outstanding Young Inorganic Chemist Award**, The Korean Chemical Society: 2012

● **World Economic Forum Young Scientist** **and Invited Speaker**, Annual Meeting of the New Champions, the World Economic Forum: 2012

● **Outstanding Basic Research Achievement Award**, The Ministry of Education, Science and Technology, South Korea: 2010

● **ACS Victor K. LaMer Award**, The American Chemical Society: 2006

● **Collegiate Inventors Award (Graduate Winner)**, National Inventors Hall of Fame and US Patent and

Trademark Office ([www.invent.org/collegiate](http://www.invent.org/collegiate)): 2004

● **Department of Defense-Multidisciplinary University Research Initiative (DoD-MURI) Fellowship**: 2002-2004

● **The Soldier of the Year Award (8th US Army)**: 1997

● **8th US Army Commanding General’s Leadership Award**, Distinguished Honor Graduate and Valedictorian of Primary Leadership Development Course (8th US Army Sergeant Academy): 1997

**Journal Editorial Services**

● **Executive Editor, *Nano Letters*** (ACS Publications): 2024-Current

● **Associate Editor, *Nano Letters*** (ACS Publications): 2020-Current

● **Editorial Advisory Board Member, *Accounts of Chemical Research*** (ACS Publications): 2020-Current

● **Editorial Advisory Board Member, *ACS Central Science*** (ACS Publications): 2019-Current

● **Editorial Board Member, *Chemistry – Methods*** (Chemistry Europe): 2020-Current

● **Editorial Board Member,** ***Particle and Particle Systems Characterization*** (Wiley-VCH): 2018-Current

● **Executive Advisory Board Member, *Small Methods*** (Wiley-VCH): 2016-Current

● **Editorial Board Member,** ***ChemNanoMat*** (Wiley-VCH): 2014-Current

● **Guest Editor (with Dmitri Talapin, University of Chicago & Jonathan Owen, Columbia University)**, Special Issue on “Ligand and Surface Chemistry of Nanoparticles”, ***Accounts of Chemical Research*** (ACS Publications): 2022-2023

● **Guest Editor**, Special Issue on “Nanomaterials for Emerging Applications”, ***Bulletin of the Korean Chemical Society***: 2020-2021

● **Guest Editor**, Special Issue on “Functional Materials for Sustainable Future - Vision from Korean Scientists”, ***Materials Chemistry Frontiers*** (RSC): 2020-2021

● **Guest Editor**, Special Issue on “Programmable Materials”, ***Advanced Materials*** (Wiley-VCH): 2020-2021

● **Guest Editor (with Luis Liz-Marzan, CIC biomaGUNE & Naomi Halas, Rice University)**, Special Issue on “Nanochemistry for Plasmonics and Plasmonics for Nanochemistry”, ***Accounts of Chemical Research*** (ACS Publications): 2018-2019

● **Guest Editor**, Special Issue on “Self-Assembly of Nanostructures”, ***ChemNanoMat*** (Wiley-VCH): 2016-2017

● **Guest Editor**, Special Issue on “Nanobiointerfaces”, ***Small*** (Wiley-VCH): 2016-2017

**Selected Academic, Committee and Board Services**

● Member, Special Committee for Global R&D, Presidential Advisory Council on Science and Technology Committee, Republic of Korea:2024-Current

● Committee Member, Future Generation Committee, The Korean Federation of Science and Technology Societies Committee: 2023-Current

● Organizing Chair, Stanford-SNU Joint Chemistry Symposium, Stanford University: January 29-30, 2024

● External Advisory Board Member, Institute for Digital Molecular Analytics and Science (Research Centre of Excellence), Nanyang Technological University, Singapore: 2023-Current

● Director of International Affairs, The Korean Chemical Society: 2022-Current

● Board Member, The 3rd Term (2023-2027) Planning Advisory Board, Institute for Basic Science, South Korea: 2022-2023

● Scientific Advisory Board Member, Center for Nanoparticle Research, Institute for Basic Science, South Korea: 2021-Current

● Personnel Committee Member, Department of Chemistry, Seoul National University: 2020-Current

● Organizer & Chair, Nanomaterials LEDARE Workshop, Solna, Sweden: 2022

● Organizer, KCS Editors’ Symposium, Korean Chemical Society Fall General Meeting: 2022

● Member, Academic Committee, Korean Chemical Society: 2021-Current

● Organizer, Biomolecule-based Nanostructures: Assembly, Dynamics, Properties, and Function, Pacifichem, Hawaii: 2021

● Organizer and Chair, Online Summer Conference on Chiral Plasmonics, July 7-8, 2020

● Program Committee, C8. Micro and Nanophotonics, and Light Trapping, CLEO Pacific Rim, Australia: 2020

● Member, Strategy and Policy Committee, Korean Academy of Science and Technology: 2020-Current

● Organizer, Material Research Meeting 2019 (Materials for Smart Systems – Plasmonic Materials: From Fundamentals to Applications): 2019

● Chair, Local Organizing Committee, ACS Publications Forum: Nanomaterials for Energy and Life Sciences in partnership with IBS and Yonsei University: 2019

● Symposium Co-Chair, The 2nd Asian Symposium on Nanoscience and Nanotechnology - Fundamentals and Applications of Nanoclusters and Nanoparticles, ChinaNANO, Beijing International Convention Center, Beijing, China, August 18, 2019

● Organizer, Materials Research Society (Symposium SM01 – Materials for Biological and Medical Applications), Phoenix, USA: 2019

● Symposium Co-Chair, Asian Symposium on Nanoscience and Nanotechnology 2018, the University of Tokyo, Japan: 2018

● Program Organizer, International Union of Materials Research Societies – International Conference on Electronics Materials 2018 (IUMRS-ICEM 2018): 2017-Current

● Organizing Committee Member, Inter-Academy Seoul Science Forum, Korean Academy of Science and Technology: 2017

● Organizer, Young Scientists Talk, Young Korean Academy of Science and Technology: 2017

● Conference Co-Chair and Organizer, International Conference on DNA Nanotechnology: Nano and Crystal Engineering with DNA, Beijing, China: 2017

● Co-Chair, Organizing Committee, The 1st International Society for Nanomedicine Congress: 2016

● Review Committee Member, Samsung Future Technology Foundation: 2016-2018

● Review/Evaluation Board Member for Director/Associate Director/Group Leaders, Institute for Basic Science (IBS), Korea: 2015-2017

● Vice-Chair, International Cooperation Committee, Korean Chemical Society: 2016-2017

● Committee Member, X-Project Steering Committee, Ministry of Future Planning, Science and ICT, South Korea: 2016-Current

● Program Committee, 20th International Vacuum Congress IVC-20, Busan, Korea: 2016

● Program Committee, 20th International Vacuum Congress IVC-20, Busan, Korea: 2016

● International Coordinator and Advisory Committee Member, the Kavli Institute for Theoretical Physics China (KITPC) at the Chinese Academy of Sciences (CAS) Program for Plasmonic Nanogaps and Circuits: 2015

● Co-Chair, International Symposium on Pioneers in Photonic and Electronic Nanostructures: 2015

● Advisory Committee Member, International Center for Quantum Photonics, Wuhan University: 2015

● Executive Director, The Korean Society for Nanomedicine: 2015-2016

● Program Committee, Nano Korea 2015 Symposium: 2015

● Organizer, Symposium F: Reverse Engineering of Bioinspired Nanomaterials, Materials Research Society (MRS) Fall Meeting, Boston, USA: 2014

● Symposium Chair and Organizer, Korean Academy of Science and Technology Symposium for Pioneers in Photonic Nanostructures and Nanophotonics: 2014

● Organizer, The 27th Korean Academy of Science and Technology Prestige Workshop: 2014

● Review Committee Member for Electing the Directors, Associate Directors and Group Leaders of Institute for Basic Science, Korea: 2012, 2013, 2014, 2016 & 2021

● General Secretary and Organizer, International Scanning Probe Microscopy Conference, Seoul, Korea: 2014

● Director of Academic Affairs, The Korean Society for Nanomedicine: 2013-2014

● Steering Committee Member and Program Committee Chair (Chemistry), Inter-Academy Seoul Science Forum (Korean Academy of Science and Technology): 2013

● Executive Committee Member for Korea’s Frontier Research Scientists Program of the Korean Academy of Science and Technology: 2012 and 2013

● Dasan Conference and KCIST Conference Organizer, Korean Federation of Science and Technology Society: 2007 and 2012

● Academic Coordinator, Division of Inorganic Chemistry, Korean Chemical Society: 2012

● Academic Coordinator, Division of Materials Chemistry, Korean Chemical Society: 2011

● Organizing Committee Member and Session Chair, Nano Korea 2011

● Session Organizer for 2007 Spring (Materials Chemistry Division), 2011 Fall (Materials Chemistry Division) and 2012 Spring (Inorganic Chemistry Division) Korean Chemical Society Meetings

● Research Grant Reviewer and Evaluation Committee Member for National Research Foundations, Ministry of Education, Science and Technology, Ministry of Knowledge Economy and Ministry of Health-Welfare, Korea

● Research Grant Reviewer for National Science Foundation, USA

● Award Reviewer for Academia Sinica, Taiwan

**Publications**

**\* indicates corresponding authors.**

**1.** **J.-M. Nam**, S.-J. Park, C. A. Mirkin\*, Bio-Barcodes Based On Oligonucleotide-Modified Nanoparticles, ***J. Am. Chem. Soc.*** **124**, 3820 (2002).

**2.** **J.-M. Nam\***, M. A. Ratner\*, X. Liu, C. A. Mirkin, Single-Walled Carbon Nanotubes and C60 Encapsulated by A Molecular Macrocycle, ***J. Phys. Chem. B****.* **107**, 4705 (2003).

**3.** Z. Li, S.-W. Chung, **J.-M. Nam**, D. Ginger, C. A. Mirkin\*, Living Templates for Hierarchic Assembly of Gold Nanoparticles, ***Angew. Chem.* *Int. Ed.*** **42**, 2306 (2003).

**4.** J. Lim, D. S. Ginger, K.-B. Lee, J. Heo, **J.-M. Nam**, C. A. Mirkin\**,* Direct-Write Dip-Pen Nanolithography of Proteins on Modified Silicon Oxide Surfaces,***Angew. Chem. Int. Ed.*** **42**, 2309 (2003).

**5.** **J.-M. Nam**, C. S. Thaxton, C. A. Mirkin\**,* Nanoparticle-Based Bio-Bar Codes for Ultrasensitive Detection of Proteins, ***Science*** **301**, 1884 (2003).

**\*News of the Week, *Science,* 301, 1827 (2017) - Tiny Particles Flag Scarce Proteins, Robert F. Service.**

**6.** R. C. Bailey, **J.-M. Nam**, C. A. Mirkin\*, J. T. Hupp\*, Real-Time Multicolor DNA Detection with Chemoresponsive Diffraction Gratings and Nanoparticle Probes, ***J. Am. Chem. Soc.*** **125**, 13541 (2003).

**7.** Y. C. Cao, R. Jin, **J.-M. Nam**, C. S. Thaxton, C. A. Mirkin\*, Raman-Dye-Labeled Nanoparticle Probes for Proteins, ***J. Am. Chem. Soc.*** **125**, 14676 (2003).

**8.** C. S. Thaxton, **J.-M. Nam**, C. A. Mirkin\*,PCR-like Sensitivity for Proteins with Bio-Bar-Code Amplification, ***Discovery Medicine*** **3**, 59 (2004).

**9.** **J.-M. Nam**, S. W. Han, K.-B. Lee, X. Liu, M. A. Ratner, C. A. Mirkin\*, Bioactive Protein Nanoarrays on Nickel Oxide Surfaces Formed by Dip-Pen Nanolithography, ***Angew. Chem. Int. Ed.*** **43**, 1246 (2004).

**10. J.-M. Nam**, S. I. Stoeva,C. A. Mirkin\*, Bio-Bar-Code-Based DNA Detection with PCR-like Sensitivity, ***J. Am. Chem. Soc.*** **126**, 5932 (2004).

**11.** D. Georganopoulou, L. Chang, **J.-M. Nam**, C. S. Thaxton, E. J. Mufson, W. L. Klein\*, C. A. Mirkin\*, Nanoparticle-Based Detection in Cerebral Spinal Fluid of a Soluble Pathogenic Biomarker for Alzheimer’s Disease, ***Proc. Natl. Acad. Sci. USA*** **102**, 2273 (2005). ***\*Selected As Cover Article, PNAS.***

**12.** J. Poroski, **J.-M. Nam**, C. A. Mirkin, D. A. Appella\*, Cyclopentane-Modified PNA Improves the Sensitivity of Nanoparticle-Based Scanometric DNA Detection, ***Chem. Commun.*** **16**, 2101 (2005).

**13.** K. A. Shaikh, K. S. Ryu, E. D. Goluch, **J.-M. Nam**, J. Liu, C. S. Thaxton, Y. Liu, C. A. Mirkin\*, C. Liu\*, A Modular Microfluidic Architecture for Integrated Biochemical Analysis, ***Proc. Natl. Acad. Sci. USA*** **102**, 9745 (2005).

**14.** **J.-M. Nam**, A. R. Wise, J. T. Groves\*, A Colorimetric Bio-Barcode Amplification Assay for Cytokines, ***Analytical Chemistry*** **77**, 6985 (2005).

**15.** B. -K. Oh+, **J.-M. Nam+**, S. W. Lee, C. A. Mirkin\*, A Fluorophore-Based Bio-Bar-Code Amplification Assay for Proteins, ***Small*** **2**, 103 (2006): +equally contributing authors

**16.** **J.-M. Nam**, P. M. Nair, R. M. Neve, J. W. Gray, J. T. Groves\*, A Fluid Membrane-Based Soluble Ligand Display System for Live Cell Assays, ***ChemBioChem*** **7**, 436 (2006).

**17.** E. D. Goluch, **J.-M. Nam**, D. G. Georganopoulou, T. N. Chiesl, K. A. Shaikh, K. S. Ryu, A. E. Barron, C. A.

Mirkin\*, C. Liu\*, A Bio-Barcode Assay for On-Chip Attomolar-Sensitivity Protein Detection, ***Lab on a Chip***, **6**, 1298 (2006).

**18.** **J.-M. Nam\***, K.-J. Jang, J. T. Groves\*, Detection of Proteins Using Colorimetric Bio-Barcode Assay, ***Nature Protocols***, **2**, 1438 (2007).

**19.** S. Y. Park, S. Y. Park, S. Namgung, J. Im, J. Y. Kim, K.-B. Lee, **J.-M. Nam**, Y. Park\*, S. Hong\*, Large Scale

Carbon Nanotube Patterns for Directed Growth of Mesenchymal Stem Cells, ***Advanced Materials***, **19**, 2530 (2007).

**20.** S.-Y. Shim, D.-K. Lim, **J.-M. Nam\***, Ultrasensitive Optical Biodiagnostic Methods Using Metallic Nanoparticles, ***Nanomedicine***, **3**, 215 (2008).

**21.** K.-J. Jang and **J.-M. Nam\***,ArrayedNanoparticle-Based Nanoenvironments for Cell Assays, ***Small***, 4, 1930 (2008).

**22.** S.-Y. Shim, J.-R. Woo, E.-J. Nam, H.-J. Hong, I. Mook-Jung, Y.-H. Kim, **J.-M. Nam**\*, Stepwise Silver-Staining-Based Immunosorbent Assay for Amyloid-β Autoantibody Detection, ***Nanomedicine***, **3**, 485 (2008).

**23.** W.-K. Rhim, J.-S. Kim, **J.-M. Nam\***, Lipid-Gold Nanoparticle Hybrid-Based Gene Delivery, ***Small***, **4**, 1651 (2008).

**24.** D.-K. Lim, I.-J. Kim, **J.-M. Nam\***, DNA-Embedded Core-Shell Au/Ag Nanoparticles, ***Chemical Communications***, 5312 (2008).

**25.** J. Jeon, D.-K. Lim, **J.-M. Nam\***, Functional Nanomaterial-Based Amplified Bio-Detection Strategies, ***Journal of Materials Chemistry***, **19**, 2017 (2009).

**26.** Y.-H. Yang and **J.-M. Nam\***, Lipid-Tethered Single Nanoparticle Tracking-Based Membrane Biosensor, ***Analytical Chemistry***, **81**, 2564 (2009).

**27.** J. Seo, H. Lee, J. Jeon, Y. Jang, R. Kim, K. Char\*, **J.-M. Nam\***, Tunable Layer-by-Layer Polyelectrolyte Platform for Disease Diagnostic Cell Assays, ***Biomacromolecules***, **10**, 2254 (2009).

**28.** K.-J. Jang, H. Kim, **J.-M. Nam\***, Restriction Enzyme-Coded Gold Nanoparticle Probes for Multiplexed DNA Detection, ***Small***, **5**, 2665 (2009).

**29.** D.-K. Lim, K.-S. Jeon, H.-M. Kim, **J.-M. Nam\***, Y. D. Suh\*, Nanogap-Engineerable, Raman-Active Nanodumbbells for Single-Molecule Detection, ***Nature Materials***, **9**, 50 (2010).

**30.** T. J. Kang, D.-K. Lim, **J.-M. Nam**, Y. H. Kim\*, Multifunctional Nanocomposite Membrane for Chemomechanical

Transducer, ***Sensors and Actuators B: Chemical***, **147**, 691 (2010).

**31.** D.-H. Kim, H.-J. Lee, Y. K. Lee, **J.-M. Nam\***, A. Levchenko\*, Biomimetic Nanopatterns as an Emerging Platform for Cell Biology and Tissue Engineering, ***Advanced Materials***, **22**, 4551 (2010).

**32.** S. Namgung, T. Kim, K. Y. Baik, M. Lee, **J.-M. Nam\***, S. Hong\*, Fibronectin-Carbon Nanotube Hybrid Nanostructures for Controlled Cell Growth, ***Small***, **7**, 55 (2011). **\*Selected as a Frontispiece Article.**

**33.** J. R. Woo, D.-K. Lim, **J.-M. Nam**\*, Salt-Induced Colorimetric Nanoparticle Aggregation Assay for Simple and Rapid Antibody Structure and Activity Evaluation, ***Small***, **7**, 648 (2011)***.***

**34.** D.-K. Lim, K.-S. Jeon,J.-H. Hwang, H. Kim, S. Kwon, Y. D. Suh\*, **J.-M. Nam\***, Highly Uniform and Reproducible Surface-Enhanced Raman Scattering from DNA-Tailorable Nanoparticles with 1-nm Interior Gap, ***Nature Nanotechnology***, **6**, 452 (2011).

**35.** M. Cui, D.-K. Lim, **J.-M. Nam**\*, Highly Stable and Soluble Polymer-Coated DNA-Gold Nanoparticle

Conjugates, ***Journal of Materials Chemistry***, **21**, 9467 (2011).

**36.** Y.-H. Kim, J. Jeon, S. H. Hong, W.-K. Rhim, Y.-S. Lee,H. Youn, J.-K. Chung,M. C. Lee, D. S. Lee, K. W. Kang,**J.-M. Nam\***,Tumor Targeting and Imaging Using Cyclic RGD-PEGylated Gold Nanoparticle Probes with Directly Conjugated Iodine-125, ***Small***, **7**, 2125 (2011).

**37.** H. Lee, J. Seo, Y. S. Jang, **J.-M. Nam\***, K. Char\*, Nano-Bio-Functionalized Polymer Platform for Controlling Metastatic Cancer Cell Adhesion, Shape and Motility, ***ACS Nano***, **5**, 5444 (2011).

**38.** Z. Huang, H. Lee, E. Lee, S.-K. Kang, **J.-M. Nam**, M. Lee\*, Responsive Nematic Gels from Self-Assembly of Aqueous Nanofibers, ***Nature Communications***, **2**, 459 (2011).

**39.** S. Huh, J. Park, Y. S. Kim, K. S. Kim, B. H. Hong, **J.-M. Nam**\*, UV/Ozone-Oxidized Large-Scale Graphene Platform with Large Chemical Enhancement in Surface-Enhanced Raman Scattering, ***ACS Nano***, **5**, 9799 (2011).

**40.** Y. K. Lee, **J.-M. Nam**\*, Electrofluidic Lipid Membrane Biosensor, ***Small***, **8**, 832 (2012).

**41.** J.-H. Lee, G. H. Kim, **J.-M. Nam\***, Directional Synthesis and Assembly of Bimetallic Nanosnowmen with

DNA, ***J. Am. Chem. Soc.*** **134**, 5456 (2012).

**42.** J.-H. Lee, J.-H. Hwang, **J.-M. Nam\***, DNA-Tailored Plasmonic Nanoparticles for Biosensing Applications, ***Wiley Interdisciplinary Reviews-Nanomedicine and Nanobiotechnology***, **5**, 96 (2012).

**43.** J.-H. Lee, **J.-M. Nam**\*, K.-S. Jeon, D.-K. Lim, H. Kim, S. Kwon, H. Lee, Y. D. Suh\*, Tuning and Maximizing the Single-Molecule Surface-Enhanced Raman Scattering from DNA-Tethered Nanodumbbells, ***ACS Nano***, **6**, 9574 (2012).

**44.** A. Kumar, J. Hwang and **J.-M. Nam\***, Tuning and Assembling Metal Nanostructures with DNA, ***Chemical Communications***, **49**, 2597 (2013). \***Front Cover Article**

**45.** H. Lee, J.-H. Lee, **J.-M. Nam\***, Y. D. Suh\*, High Precision Measurement-Based Correlation Studies among Atomic Force Microscopy, Rayleigh Scattering and Surface-Enhanced Raman Scattering at Single-Molecule Level, ***Phys. Chem. Chem. Phys.***, **15**, 4243 (2013).

**46.** S. Kumar, D.-K. Lim, W.-K. Rhim, **J.-M. Nam\***, Glutathione Dimerization-Based Plasmonic Nanoswitch for Bio-Detection of Reactive Oxygen and Nitrogen Species, ***ACS Nano***, **7**, 2221 (2013).

**47.** Y. K. Lee, H. Lee, **J.-M. Nam\***, Lipid-Nanostructure Hybrids and Their Applications in Nanobiotechnology, ***NPG Asia Materials***, **5**, e48 (2013).

**48.** T. Kim, H. Lee, Y. Kim, **J.-M. Nam**, M. Lee\*, Protein-Coated Nanofibers for Promotion of T Cell Activity, ***Chem. Commun.***, **49**, 3949 (2013).

**49.** K. Kim, B. Bae, Y. J. Kang, **J.-M. Nam**, S. Kang, J.-H. Ryu\*, Natural Polypeptide-Based Supramolecular Nanogels for Stable Noncovalent Encapsulation, ***Biomacromolecules***, **14**, 3515 (2013).

**50.** H. Lee, J.-H. Lee, S. M. Jin, Y. D. Suh, **J.-M. Nam\***, Single-Molecule and Single-Structure-Based Correlation Studies between Localized Surface Plasmons of Dimeric Nanostructures with ~1-nm Gap and Surface-Enhanced Raman Scattering, ***Nano Letters***, **13**, 6113 (2013).

**51.** H. Lee, J.-E. Park, **J.-M. Nam\***, Bio-Barcode Gel Assay for MicroRNA, ***Nature Communications***, **5**, 3367 (2014).

**52.** Y. K. Lee, S. Kim, J.-W. Oh and **J.-M. Nam\***, Massively Parallel and Quantitative Single-Particle Analysis on Interactions between Plasmonic Nanoparticles on Supported Lipid Bilayer, ***J. Am. Chem. Soc.***, **136**, 4081 (2014). \***JACS Spotlights - Snapshots of Nanoparticles in Action Reveal Their Interactions, Dalia Yablon.**

**53.** H. Lee, Y. N. Kim, A. N. Park, **J.-M. Nam\***, Nanoparticle-Based Amyloid β Assembly and Imaging Assay on Supported Lipid, ***Small***, **10**, 1779 (2014).

**54.** S. D. Chandradoss, A. C Haagsma, Y. K. Lee, J.-H. Hwang, **J.-M. Nam**, C. Joo\*, Surface Passivation for Single-Molecule Protein Studies, ***Journal of Visualized Experiments***, **86**, 250549 (2014).

**55.** J.W. Oh, G. H. Kim, Y. D. Suh, **J.-M. Nam\***, Thiolated DNA-Based Chemistry and Control in the Structure and Optical Properties of Plasmonic Nanoparticles with Ultrasmall Interior Nanogap, ***J. Am. Chem. Soc.***, **136**, 14052 (2014).

**56.** J.-H. Lee, M. H. Yoo, G. H. Kim, **J.-M. Nam\***, Plasmonic Nanosnowmen with a Conductive Junction as Highly Tunable Nanoantenna Structures and Sensitive, Quantitative and Multiplexable Surface-Enhanced Raman Scattering Probes, ***Nano Letters***, **14**, 6217 (2014). \***Most Read Articles, Nano Letters (October 2014).**

**57.** A. Kumar, S. Kumar, W. K. Rhim, **J.-M. Nam\***, Oxidative Nanopeeling Chemistry-Based Synthesis and Photodynamic and Photothermal Therapeutic Applications of Plasmonic Core-Petal Nanostructures, ***J. Am. Chem. Soc.***, **136**, 16317 (2014).

**58.** Y. K. Lee, S. Kim, **J.-M. Nam\***, Dark Field-Based Observation of Single Nanoparticle Dynamics on Supported Lipid Bilayer for in situ Analysis of Interacting Molecules and Nanoparticles, ***ChemPhysChem***, **16**, 77 (2015). **Editor-in-Chief-invited contribution.**

**59.** K. L. Hartman, S. Kim, K. Kim, **J.-M. Nam\***, Supported Lipid Bilayers as Dynamic Platforms for Tethered Particles, ***Nanoscale* 7**, 66 (2015). **Editor-invited contribution.**

**60.** J.-H. Hwang, N. K. Singhal, D.-K. Lim, **J.-M. Nam\***, Au Nanocucumbers with Interior Nanogap for Multiple Laser Wavelength-Compatible Surface-Enhanced Raman Scattering \*, ***Bulletin of the Korean Chemical Society***, **36**, 882 (2015). **Invited Contribution to the Special Issue for Prof. Kwan Kim's Honorable Retirement.**

**61.** W.-K. Rhim, M. Kim, K. L. Hartman, K. W. Kang and J.-M. Nam\*, **Radionuclide-labeled nanostructures for In Vivo imaging of cancer**, ***Nano Convergence***, **2**, 10 (2015). **Invited Review Article.**

**62.** Y. Jang, H. Lee, K. Char\*, **J.-M. Nam\***, Transparent, Nanoporous and Transferable Membrane-Based Cell-Cell Paracrine Signaling Assay, ***Advanced Materials***, **27**, 1893 (2015). **\*Selected As Inside Front Cover.**

**63.** P. Y. Kim, J.-W. Oh, **J.-M. Nam\***, Controlled Co-Assembly of Nanoparticles and Polymer into Ultralong and Continuous One-Dimensional Nanochains, ***J. Am. Chem. Soc.***, **137**, 8030 (2015).

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**Patents**

**19 Issued Patents in Korea**

**28 Applied Patents in Korea**

**39 Issued International Patents**

**29 Applied International Patents**

### **Invited Talks**

1. Invited Seminar, Bio-Bar-Code Amplification: Nanoparticle-Based Ultrasensitive Detection Method for Biomolecules, December 18 and 28, 2003, ***Korea Institute of Science & Technology***, Seoul, South Korea.
2. Invited Seminar,Bio-Bar-Code Amplification: Nanoparticle-Based Ultrasensitive Detection Method for Biomolecules, December 18, 2003, ***Sejong University***, Seoul, South Korea.
3. Invited Seminar, Bio-Bar-Code Amplification: Nanoparticle-Based Ultrasensitive Detection Method for Biomolecules, December 28, 2003, ***Hanyang University***, Seoul, South Korea.
4. Invited Seminar, February 2004, ***Nanosphere, Inc.***, Northbrook, IL.
5. Ultrasensitive Biomolecule Detection with Nanoparticle Probes, May 13, 2004, ***Northwestern University***, Evanston, IL.
6. Invited Seminar,Encoded Nanostructures for theUltrasensitive Detection of Biomolecules and Biodiagnostics, September 16, 2004, Chemistry Department Seminar, Department of Chemistry, ***Hanyang University***, Seoul, South Korea.
7. Invited Seminar,Encoded Nanostructures for theUltrasensitive Detection of Biomolecules and Biodiagnostics, September 16, 2004, Chemistry Colloquium, Department of Chemistry, ***Seoul National University***, Seoul, South Korea.
8. Invited Speaker,Functional Nano/Microstructures for Biological Applications, April 9, 2005, ***KOLIS (Korean Life Scientists in the Bay Area) Spring Conference*,** Stanford University, CA, USA.
9. Invited Seminar, Nano/Micromaterial-Based Functional Structures for Biological and Clinical Applications, April 21, 2005*,* ***Intel Corporation***, Santa Clara, CA, USA.
10. Invited Speaker, Epidermal Growth Factor-Functionalized Supported Lipid Bilayers to Probe Cell Signaling Pathways and as a Fluidity-Based Cell Culturing Technique, ***2005 KOLIS (Korean Life Scientists in the Bay Area) Annual Conference***, August 20, 2005; UCSF Parnassus Campus, San Francisco, CA.
11. Invited Seminar, Functional Nano/Microstructures for Biological and Clinical Applications, ***Korea Research Institute of Bioscience and Biotechnology (KRIBB)***, Daejeon, South Korea, February 17, 2006.
12. Invited Seminar, Synthetic Functional Nanostructures for Biological and Clinical Applications, ***Ewha Womans University (School of Nanoscience)***, Seoul, South Korea, March 28, 2006.
13. Invited Seminar, Synthetic Nano/Microstructures for Early and Accurate Disease Diagnosis, ***Spring Meeting of The Polymer Society of Korea (Optically and Electrically Functional Polymer-Bio Hybrid Technologies Symposium)***, KINTEX, Daehwa-dong, Ilsan-seogu, Gyeonggi-do, South Korea, April 6, 2006.
14. Invited Seminar, Inorganic-Biomolecule Hybrid Nanomaterial-Based Biodiagnostics, ***International Symposium and Annual Meeting of the Korean Society for Biotechnology and Bioengineering***, Chungbuk National University, Chungbuk, South Korea, May 10, 2006.
15. Invited Seminar, Inorganic-Organic Hybrid Nanomaterial-Based Ultrahigh-Sensitivity Biosensors, ***Korea Chemical Society Specialty Meeting (Physical Chemistry Symposium)***, Kyunghee University, Seoul, South Korea, May 13, 2006.
16. Invited Seminar, Biologically Functional Nanostructures for the Development of Highly Accurate and Sensitive Disease Diagnostic Tools, ***Department of Biological Sciences, Korea Advanced Institute of Science and Technology***, Daejeon, South Korea, May 19, 2006.
17. Invited Seminar, Multi-Functional Nanostructure-Based Disease Diagnostics, ***Department of Chemistry, PohangUniversity of Science and Technology***, Pohang, South Korea, May 26, 2006.
18. Invited Seminar, Inorganic-Biomolecule Hybrid Nanostructures for Ultrasensitive Biosensors, ***Department of Chemistry, Sungshin Women’s University***, Seoul, South Korea, June 7, 2006.
19. Invited Seminar, Inorganic-Biomolecule Hybrid Nanostructure-Based Disease Diagnostics, ***Department of Chemistry***, ***Hanyang University***, Seoul, South Korea, June 8, 2006.
20. Victor K. LaMer Award Lecture, Functional Nanostructure-Based Biodiagnostics, ***the 80th American Chemical Society Colloid and Surface Science Symposium***, University of Colorado-Boulder, CO, USA, June 21, 2006.
21. Invited Seminar, Synthetic Nanobioscience, ***Department of Chemical and Biological Engineering, Korea University***, Seoul, South Korea, September 13, 2006.
22. Invited Seminar, Ultrasensitive Nanosensor-Based Biodiagnostics, ***Department of Chemical and Biological Engineering, Seoul National University***, Seoul, South Korea, September 21, 2006.
23. Invited Seminar, Functional Nanostructure-Based Biosensors, ***Department of Chemistry, Korea Advanced Institute of Science and Technology***, Daejeon, South Korea, September 27, 2006.
24. Invited Seminar, Dip-Pen Nanolithography-Based Functional Nanoarrays, ***Center for Development of Fine Chemicals, Chonnam National University***, Gwangju, South Korea, October 18, 2006.
25. Invited Speaker, Nanostructured Materials Symposium, Functional Supported Membrane-Based Live Cell Assays, ***Korea Chemical Society Fall Meeting***, Kimdaejung Convention Center, Gwangju, South Korea, October 19, 2006.
26. Young Inorganic Chemists, Functional Nanoprobes for Biological Applications, ***Korea Chemical Society Fall Meeting***, Kimdaejung Convention Center, Gwangju, South Korea, October 19, 2006.
27. Nanobio Graduate School Seminar Series, Functional Nanostructure-Based Bioassays, ***Department of Chemical and Biological Engineering, Seoul National University***, Seoul, South Korea, October 24, 2006.
28. Invited Seminar, Synthetic Nanostructure-Based Biodiagnostics, ***School of Biological Sciences,   
    Seoul National University***, Seoul, South Korea, October 30, 2006.
29. Invited Seminar, Ultrasensitive Nanosensor-Based Disease Diagnostics, ***Cancer Research Institute,   
    School of Medicine, Seoul National University***, Seoul, South Korea, November 3, 2006.
30. Invited Seminar, Nanobiodiagnostics, ***MEDIFRON DBT***, Seoul, South Korea, November 24, 2006.
31. Invited Speaker, ***The 2nd Young Chemist Workshop***, Functional Nanostructure-Based Biosensors, ***Kyungbook National University***, Daegu, South Korea, January 9, 2007.
32. Invited Seminar, Functional Nanostructures for Biosensing Applications, ***Bioforum***, V-Society Conference Room, Seoul, South Korea, January 13, 2007.
33. Invited Speaker, Functional Nanomaterial-Based Biodiagnostics, ***Hokkaido University-Seoul National University Joint Symposium on Nanostructured Materials and Analysis***, Hokkaido University, Sapporo, Japan, January 24, 2007.
34. Invited Speaker, Functional Gold Nanoparticle-Based Bioassays, ***KHUPO 7th Annual International Proteomics Conference***, Seoul National University University Cultural Center, Seoul, South Korea, March 29, 2007.
35. Invited Seminar, Multifunctional Gold Nanoparticle-Based Bioassays***, Department of Chemical and Biological Engineering, Hanyang University***, Seoul, South Korea, April 4, 2007.
36. Invited Seminar, Colloquium, Multi-Functional Nanostructure-Based Biosensors & Cell Assays, College of Nanoscience and Nanotechnology, ***Pusan National University***, Milyang, South Korea, May 4, 2007.
37. Invited Seminar, Multi-Functional Nanostrucutres for Biomarker Detection and Cell Assays, Department of Chemistry, ***Inha University***, Incheon, South Korea, May 8, 2007.
38. Invited Seminar, Multi-Functional Nanostructures for Biosensors and Cell Assays, Cha Stem Cell Institute, ***Cha General Hospital***, Seoul, South Korea, May 10, 2007.
39. Invited Speaker, ***2007 Korea Conference Innovative Science and Technology(KCIST)-Nanomedicine***, Physically and Biologically Functional Nanoparticles for Biodiagnostic Systems, Shineville Luxury Resort, Jeju Island, South Korea, July 11, 2007.
40. Invited Seminar, Nanomaterial-Based Biodiagnostics, ***National Cancer Center***, Ilsan, Gyeonggi-do, South Korea, August 3, 2007.
41. Invited Seminar, Multifunctional Metallic Nanostructure-Based Bioassays, ***Yonsei Nanomedical National Core Research Center***, Seoul, South Korea, August 23, 2007.
42. Invited Speaker, ***Nanokorea 2007 - Smart Nanosystems for the Future Biotechnology***, **Functional Metallic Nanostructure-Based Cell Assays**, KINTEX, Daehwa-dong, Ilsan-seogu, Gyeonggi-do South Korea, August 30, 2007.
43. Invited Seminar, Physically and Biologically Functional Metallic Nanoparticle-Based Bioassays, ***Korea Research Institute of Standards and Science***, Daejeon, South Korea, September 12, 2007.
44. Invited Speaker, ***the 2nd Symposium of Gwanak-Yeongun Meeting***, Synthetic Nanomaterial-Based Biodiagnostics, Clinical Medicine Research Center, Seoul National University Medical School, Seoul, South Korea, September 19, 2007.
45. Invited Speaker, ***2007 Korean BioChip Society Meeting - Cells-on-a-chip***, Biologically Functional Nanostructure-Based Cell Assays, Kyungwon University, Sungnam, Kyunggi-do, South Korea, October 4, 2007.
46. Invited Speaker, ***The 11th GIST International Symposium on Life Science – Frontiers of Nanomedicine: Cancer Diagnostic, Imaging and Therapy***, Physically and Biologically Functional Metallic Nanomaterial-Based Bioassays, Department of Life Science, Gwangju Institute of Science and Technology, Gwangju, South Korea, October 5, 2007.
47. Invited Seminar, Metallic Nanoparticle-Based Bioassays, ***Korea Food and Drug Administration***, Seoul, South Korea, October 8, 2007.
48. Invited Speaker, ***The 5th China-Korea Joint Symposium on Inorganic Chemistry***, Functionalized Metallic Nanoparticle-Based Bioassays, Kyungwon University, Sungnam, Kyunggi-do, South Korea, October 19, 2007.
49. Invited Seminar, Nanobiodiagnostics, ***Gendocs, Inc.***, Daejeon, South Korea, October 22, 2007.
50. Invited Seminar, Metallic Nanoparticle-Based Nanobiodiagnostics, ***Department of Chemistry, Korea University***, Seoul, South Korea, November 2, 2007.
51. Invited Seminar, Nanobiodiagnostics, ***Department of Physiology and Biophysics, College of Medicine, Seoul National University***, Seoul, South Korea, November 12, 2007.
52. Invited Seminar, Nanobiodiagnostics, ***College of Pharmacy, Ewha Womans University***, Seoul, South Korea, November 15, 2007.
53. Invited Speaker, ***BT Fusion Chemistry Workshop***, Metallic Nanoparticle-Based Nanostructures for Bioassays, ***Seoul National University***, Seoul, South Korea, December 6, 2007.
54. Invited Speaker, ***10th Hokkaido University-Seoul National University Joint Symposium on Nanostructured Materials and Analysis***, Functional Nanomaterial-Based Biodiagnostics, Seoul National University, Seoul, South Korea, January 25, 2008.
55. Invited Speaker, ***Seoul National University-University of Tokyo-National Taiwan University Joint Symposium***, Nanobiodiagnostics, Seoul National University, South Korea, February 1, 2008.
56. Invited Seminar, Gold Nanoparticle-Based Nanobiodiagnostics, ***Korea Research Institute for Chemical Technology***, Daejun, South Korea, February 12, 2008.
57. Invited Speaker, ***Korea Chemical Society Spring Meeting*** (Materials Chemistry of Nano and BioSciences-2), KINTEX, Ilsan, South Korea, April 18, 2008.
58. Invited Speaker, ***65th KSBMB Annual Meeting & KSMBMB-KSBMB Joint Symposium***, Gold-Nanoparticle-Based Bioassays, COEX, Seoul, South Korea, May 8, 2008.
59. Invited Seminar, Highly Functional Nanoparticle-Based Bioassays, ***Hanyang University***, Ansan, South Korea, May 21, 2008.
60. Invited Speaker, ***the 19th International Conference on Molecular Electronics and Devices***, Ajou University, Functional Gold Nanoparticle-Based Cell Assays, Suwon, South Korea, May 30, 2008.
61. Invited Speaker, ***Korean BioChip Society Fall Meeting***, Biologically Functional Nanostructure-based Cell Assays, June 13, 2008.
62. Invited Speaker, Ultrasensitive Optical Nanodetection Assays for Biomarkers, ***LG Electronics Institute of Technology***, Seoul, South Korea, June 24, 2008.
63. Invited Speaker, ***the 3rd Young Chemist Workshop***, Lipid-Based Nanostructures for Biosensing and Cell Interfacing Applications, Korea Research Institute for Standards and Science, June 26-27, 2008.
64. Invited Speaker, ***Workshop on Solar Energy Utilization***, Multifunctional Gold Nanoparticles for Bioassays, Sogang University, Seoul, South Korea, August 7, 2008.
65. Invited Speaker, ***Cutting-Edge Science Seminar for Teachers***, Nanoscience and Nanobiotechnology, Seoul National University, Seoul, South Korea, August 12, 2008.
66. Invited Speaker, ***Japan-Korea-China Mini-Symposium on Nanotechnology, Biotechnology and Catalysis***, Supported Lipid Bilayer As a Versatile Platform for Biosensing Applications, Hokkaido University, Sapporo, Japan, November 6, 2008.
67. Invited Seminar, Optically Active, Highly Tailorable Bioconjugated Nanostructures for Biosensing for Biosensing Applications, ***Chungnam National University***, Daejeon, South Korea, February 16, 2009.
68. Invited Speaker, ***National University of Singapore-Seoul National University Symposium 2009***, Frontiers in Fundamental and Applied Chemistry, Bio-Conjugated Metallic Nanoparticles for Optical Biosensing Applications, February 27, 2009.
69. Invited Seminar, Optical Nanobio-Detection Methods, ***Samsung Electronics***, Ki-Heung, Gyeonggi-do, March 1, 2009.
70. Invited Seminar, Supported Lipid Bilayer-Based Biosensing and Cell-Interfacing Applications, ***Gyeongsang National University***, Jin-Ju, South Korea, March 26, 2009.
71. Invited Seminar, Various Nanostructured Materials for Biological Applications, ***Chung-Ju National University***, Chung-Ju, South Korea, April 1, 2009.
72. Invited Speaker, ***Symposium for Electronic Materials and Applications***, Optically-Active, Tailored Nanostructure-Based Bio-Detection Strategies, Kyung Hee University, South Korea, May 28, 2009.
73. Invited Speaker, Lipid Bilayer-Based Biosensing Platforms, ***The Korean Biophysical Society Annual Meeting***, Convention Hall, International Cooperation Building, KIST, Seoul, South Korea, June 12, 2009.
74. Invited Speaker, ***Bioinorganic Camp***, Optically-Active, Tailored Metallic Nanostructures for Biological Applications, Gosari Town, Choongchungbook-do, South Korea, June 26, 2009.
75. Invited Speaker, ***International Conference on Materials for Advanced Technologies (ICMAT 2009)***, Tailored Nanostructure-Based Optical Biosensing Strategies, Suntec Singapore International Convention and Exhibition Center, Singapore, 28 June 2009 - 3 July 2009.
76. Invited Speaker, ***Nano Bio Technologies for Real World Applications***, ***2009 NSI Workshop***, Raman-Active Dimeric Core-Shell Nanostructures for Highly Reproducible Single DNA Detection, Seoul National University, South Korea, August 14, 2009.
77. Invited Speaker, ***Stanford-SNU Symposium in Chemistry***, Raman-Active Heterodimeric Core-Shell Nanoparticles for Highly Reproducible Single DNA Detection, Seoul National University, September 8, 2009.
78. Invited Speaker, ***The Polymer Society of Korea Fall Meeting***, Gold Nanoparticle-Based Bio-Imaging and Gene Delivery Nanoprobes, Gwangju Institute of Science and Technology, South Korea, October 9, 2009.
79. Invited Speaker, ***Molecular Imaging Conference***, Multi-structured, multi-functional metallic nanoprobes for bio-imaging applications, Kyungpook National University Hospital, South Korea, October 17, 2009.
80. Invited Speaker, ***Korea Chemical Society Fall Meeting*** (Symposium for Development and Applications of Analytical Chemistry in Bio- and Nano-Technologies), Synthetic Lipid Bilayer Platform for Bioanalytical Applications, Daejeon Convention Center (DCC), Daejeon, South Korea, October 30, 2009.
81. Invited Speaker, ***Korea Chemical Society Fall Meeting*** (Symposium for Materials for Biofunctinal Systems) Raman-Active Core-Shell Nano-Dumbbells for Highly Sensitive and Reproducible Single Molecule Detection, Daejeon Convention Center (DCC), Daejeon, South Korea, October 30, 2009.
82. Invited Speaker, ***Global Research Frontiership - Perspectives and Visions of Nanotechnology as an Enabler for Another Revolution***, Structure and Gap-Engineering of Core-Shell Nanodimers: New Opportunities in Nano-Raman-Based Single Molecule Detection, Seoul National University, South Korea, November 13, 2009.
83. Invited Speaker, ***SNU-Hokkaido University Joint Symposium***, Tailored Synthesis of Optically Sensitive Nano-Dumbbells and Their Use in Single Nanostructure-Based Single DNA Detection, Seoul National University, November 18-19. 2009.
84. Invited Seminar, ***Graduate School of Public Health Seminar Series***, Metallic Core-Shell Nanodimer Probes with Single Molecule Sensitivity for Biosensing Applications, Seoul National University School of Medicine Campus, Seoul, South Korea, November 26, 2009.
85. Invited Seminar, ***U-Health Business Cluster Seminar***, The Development of Ultrasensitive and Multiplexed Biosensors and Their Applications, DMC R&D Center, Seoul, South Korea, November 30, 2009.
86. Invited Seminar, ***Center for Infectious Diseases, National Institute of Health***, Seoul, South Korea, Optically-Active, Multi-Functional Metal Nanoprobes for Biosensing and Disease Diagnostic Applications, February 17, 2010.
87. Invited Speaker, ***Next Generation Human Genome Sequencing Seminar Series, Seoul National University***, Nanochemistry for Next Generation Sequencing, February 26, 2010.
88. Invited Seminar, ***Korea Food & Drug Administrator***, Nanoengineered, Plamonic Nanoprobe-Based Bio-Detection Assays, March 10, 2010.
89. Invited Seminar, ***Biospace, Co.***, Seoul, South Korea, Photonic Nanoprobes for Disease Diagnosis, April 16, 2010.
90. Invited Seminar, ***School of Pharmacy, Ewha Women’s University***, Nano-Engineerable Bioprobes for Highly Sensitive and Quantitative Detection of Biomolecules, April 29, 2010.
91. Invited Speaker, ***Nanophotonics and Nanospectroscopy Workshop***, Hanyang University, Seoul, South Korea, Highly tailored nanogap structures for enhanced optical detection with high efficiency and reproducibility, June 21, 2010.
92. Invited Speaker, ***KRIBB Conference***, Korea Research Institute of Bioscience and Biotechnology, Daejeon, South Korea, Engineerable Nanogap-Based Raman Signal Amplification for Highly Sensitive and Quantitative Biomolecule Detection, August 27, 2010.
93. Invited Speaker, ***Pioneer NanoSeoul Forum 2010***, Yonsei University, Seoul, South Korea, Molecular Engineering of Nanogap Particles for High Cross-Section-Based Surface Enhanced Raman Scattering, October 13, 2010.
94. Invited Speaker, ***Nanobiomedicine Symposium, Korean Institute for Chemical Engineers Fall Symposium***, Daejeon Convention Center, South Korea, October 21, 2010.
95. Invited Speaker, ***Biotronics 2010***, Sogang University, Seoul, South Korea, Nanogap-Engineerable Nanoprobes for Surface-Enhanced Raman Scattering Applications, October 28, 2010.
96. Invited Seminar, ***Department of Chemistry, Pusan National University***, Pusan, South Korea, Plasmonic Nanogap-Engineerable Nanoprobes, November 5, 2010.
97. Invited Speaker, ***SNU-UC Berkeley Chemistry Joint Symposium***, Seoul National University, Seoul, South Korea, DNA-Based Plasmonic Nanogap Engineering Strategies, November 8, 2010.
98. Invited Seminar, ***Outstanding Medical Scientist Seminar***, School of Medicine, Seoul National University, Nanotechnology-Based Medicine, November 25, 2010.
99. Invited Speaker, ***Chemical Sensor Society Symposium***, Kyungpook National University, Daegu, South Korea, Metallic Nanogap Probes for Highly Sensitive and Quantitative Raman Detection,January 13, 2011.
100. Invited Speaker, ***Korea Research Institute of Chemical Technology***, Daejeon, South Korea, Nanogap Engineering in Nanostructures for Surface-Enhanced Raman Scattering-Based Bioassays, February 8, 2011.
101. Invited Seminiar, ***LG Electronics***, Seoul, South Korea, Breath-Based Biodiagnostics and Genome Sequencing, February 16, 2011.
102. Invited Seminar, ***Friday Science Touch***, Pusan, South Korea, Development of Nanogap Structure-Based Disease Diagnostic Assays, February 25, 2011.
103. Invited Speaker, ***The 1st International Symposium on PET Radiopharmaceuticals Converging Research***, Sogang University, Seoul, South Korea, Highly stable and specific gold nanoparticle probes for targeted molecular imaging of tumor,March 24, 2011.
104. Invited Seminar, ***Department of Molecular Science and Technology, Ajou University***, South Korea, Nanoengineered Gold Nanostructure-Based for Biomedical Applications, March 29, 2011.
105. Invited Seminar, ***Molecular Theragnosis Meeting, Seoul National University Hospital***, Seoul, South Korea, Nanoengineered Nanoplasmonic Probes, April 13, 2011.
106. Invited Seminar, ***Department of Nano Science and Technology, Seoul National University***, South Korea, Plasmonic Nanogap Probes for Highly Sensitive and Quantitative Bio-Detection, May 4, 2011.
107. Invited Seminar, ***Asan Medical Center***, Seoul, South Korea, Plasmonic Nanogap Probes for Highly Sensitive and Quantitative Bio-Detection**,** May 11, 2011.
108. Invited Seminar, ***LG Biotech***, Daejeon, South Korea, Plasmonic Nanogap Probes for Highly Sensitive and Quantitative Biosensing Applications, May 13, 2011.
109. Invited Speaker, ***2011 US-Korea Joint Symposium of Nanotechnology Workshops***, Gyeong-Ju, South Korea, DNA-Engineerable Plasmonic Nanogap Probes, June 1, 2011.
110. Invited Speaker, ***SNU International Symposium for Newly Emerging******Nanostructured Materials***, Seoul National University, Seoul, South Korea, DNA-Tunable Plasmonic Nanogap Probes, August 22, 2011.
111. Invited Speaker, ***KSBB Fall Meeting and International Symposium***, Songdo Convensia, Incheon, South Korea,

Plasmonic Nanogap Particles as Biosensing Probes, October 7, 2011.

1. Invited Speaker, ***Pioneer Nano Seoul Forum***, Seoul National University, Seoul, South Korea, Plasmonic Nanogap

Particles for Surface-Enhanced Raman Scattering, November 2, 2011.

1. Invited Speaker, ***The*** ***3rd Taiwan-Korea Bilateral Symposium***, National Dong Hwa University, Hualien, Taiwan,

DNA-Engineerable Plasmonic Nanogap Probes, November 6, 2011.

1. Invited Speaker, ***Symposium for Fast and Efficient Molecular Diagnostics***, Korea Institute of Science and Technology, Seoul, South Korea, Plasmonic Nanoprobes for Surface-Enhanced Raman Scattering-Based Biosensing Applications, December 19, 2011.
2. Invited Speaker, ***SNU-KAST Nanoscience and Technology Winter Forum***, W Seoul-Walkerhill, Seoul, South Korea, Research in the Nam Lab, January 13, 2012.
3. Invited Speaker, ***UT-SNU-NTU Chemistry Joint Symposium***, The University of Tokyo, Tokyo, Japan, DNA-Tailorable Plasmonic Nanogap Particles for Surface-Enhanced Raman Scattering, February 6, 2012.
4. Invited Speaker, ***The 1st KAIST Young Chemists Symposium***, KAIST, Daejeon, South Korea, DNA-Tailorable Plasmonic Nanogap Particles, February 10, 2012.
5. Invited Speaker, ***The 1st Korea-UK International Symposium on Convergence Between Nanomedicine and Molecular Imaging***, Seoul National University, Seoul, South Korea, Plasmonic Nanogap Particles as Biosensing and Bioimaging Probes, February 22, 2012.
6. Invited Speaker, ***The Polymer Society of Korea Spring Meeting***, DCC, Daejeon, South Korea, Plasmonic nanogap particles with DNA tailorability, April 12, 2012.
7. Invited Speaker, ***UC Berkeley/SNU Young Chemists Symposium***, Berkeley, CA, USA, DNA-Engineerable Plasmonic Nanogap Particles with ~1-nm Gap, May 18, 2012.
8. Invited Speaker, Smart Biochip Technology for Future Healthcare, ***The Korean Biochip Society Spring Meeting***, Plasmonic Nanogap Bioprobes, May 24, 2012.
9. Invited Speaker, ***The 4th YCW Workshop on Frontiers in Chemistry***, Busan, South Korea, June 13, 2012.
10. Invited Speaker, ***International Symposium and Annual Meeting of the Korean Society for Microbiology and Biotechnology***, Plasmonic Biosensing Probes, June 28, 2012.
11. Invited Seminar, ***National Institute of Food and Drug Safety Evaluation***, Osong, South Korea, July 26, 2012.
12. Invited Speaker, ***Nano Korea 2012***, COEX, Seoul, South Korea, Nanoparticle-Functionalized Lipid Bilayer Platforms for Bioanalytical Applications, August 17, 2012.
13. Invited Speaker, ***Hanyang Symposium on Advanced Chemistry***, Hanyang University, Seoul, South Korea, August 28, 2012.
14. Invited Speaker/Panelist, ***Annual Meeting of the New Champions, World Economic Forum***, Tianjin, China, September 12, 2012.
15. Invited Speaker, ***SNU-Paris Diderot Chemistry Symposium***, Seoul National Unversity, Seoul, South Korea, September 24-25, 2012.
16. Invited Speaker, ***Pioneer NanoSeoul Forum***, Plasmonic Nanoprobes with ~1-nm Gap, Yonsei University, Seoul, South Korea, October 8, 2012.
17. Invited Seminar, ***KAIST Physics Department Colloquium***, Controlling and Studying 1-nm Plasmonic Nanogap within Nanostructures, KAIST, Daejeon, South Korea, October 15, 2012.
18. Award Lecture, ***Young Inorganic Chemist Award Lecture***, Korean Chemical Society National Meeting, BEXCO, Busan, South Korea, October 19, 2012.
19. Invited Speaker, ***SNU-Emory Symposium in Chemistry***, Seoul National University, Seoul, South Korea, October 22, 2012.
20. Invited Speaker, ***Inter-Academy Seoul Science Foru***m, Westin Chosun Hotel, Seoul, South Korea, November 1-2, 2012.
21. Invited Speaker, ***Dasan Conference – From Nanotechnology Platform to Clinical Nanomedicine***, Gyeongju Hilton Hotel, South Korea, November 22, 2012.
22. Presidential Young Scientist Award Commemorative Lecture, Department of Chemistry, Seoul National University, Seoul, South Korea, March 7, 2013.
23. Keynote Lecture, ***Asian International Symposium on Inorganic Chemistry, Coordination Chemistry and Organometallic Chemistry***, Chemical Society of Japan, March 24, 2013.
24. Invited Speaker, ***The 24th International Conference on Molecular Electronics and Devices***, KAIST, Daejeon, South Korea, Syntheses and Applications of Plasmonic Nanogap Particles, May 15, 2013.
25. Invited Speaker, ***SNU Bio-Festival***, Hoam Faculty House, Seoul National University, Seoul, South Korea, Nanoplasmonic Optical Bioprobes, May 24, 2013.
26. Invited Seminar, ***POSTECH Physics Department Colloquium***, Pohang, South Korea, Hihghly Tunable Plasmonic Nanoprobes and Their Couplings, May 29, 2013.
27. Invited Speaker, ***UT-SNU-NTU Joint Chemistry Symposium***, Seoul National University, South Korea, Chemistry and Optical Properties of Plasmonic Nanogap Particles, June 14, 2013.
28. Invited Speaker, ***ECI Biochemical and Molecular Engineering XVIII***, Beijing, China, DNA-Engineered Plasmonic Nanogap Bioprobes, June 20, 2013.
29. Invited Speaker, Emerging ***Nanotechnologies in Future Healthcare Forum***, Nanyang Technological University, Singapore, August 21, 2013.
30. Invited Speaker, ***Asian Rising Stars session, The 15th Asian Chemical Congress***, Resort World Sentosa, Singapore, August 21, 2013.
31. Invited Seminar, ***Chemistry Department Seminar, National University of Sinagpore***, Singapore, August 26, 2013.
32. Invited Seminar, ***School of Materials Science and Engineering, Nanyang Technological University***, August 26, 2013.
33. Invited Speaker, ***ChinaNANO 2013***, International Conference on Nanoscience & Technology, Beijing International Convention Center, September 6, 2013.
34. Invited Speaker, ***2013 China-Korea Joint Symposium on Functional Nanomaterials***, Beijing International Convention Center, September 6, 2013.
35. Invited Speaker, ***2013 Dasan Conference on Photonic Nanostructure-Based Bio-Detection Technologies***, W Seoul-Walkerhill Hotel, Seoul, Korea, September 26, 2013.
36. Invited Speaker, ***Pioneer Nano-Seoul Forum***, Seoul National University, Seoul, South Korea, October 11, 2013.
37. Invited Speaker, ***Interfacing of Materials and Biology Symposium, Fudan University***, Shanghai, China, October 30, 2013.
38. Invited Speaker, ***4th Asian Conference on Coordination Chemistry***, Jeju, Korea, November 6, 2013.
39. Invited Speaker, ***The 9th Korea-Japan Symposium on Frontier Photoscience***, Seoul National University, Seoul, South Korea, November 25, 2013.
40. Invited Speaker, DNA-Tailorable Plasmonic Nanoprobe-Based Biosensing Strategies, ***The Third International Conference on Frontiers of Plasmonics***, Xiamen, China, March 26-April 1, 2014.
41. Invited Speaker, Plasmonic Nanoprobe-Based Biodetection Strategies, ***Nanobiotechnology for Health Guard, The Korean Society for Biotechnology and Bioengineering Fall Meeting and International Symposium***, April 11, 2014.
42. Invited Speaker, Design, Synthesis and Analysis of Metallic Nanogap Structures with Plasmonic Properties and Biosensing Applications, 113th ***Korean Chemical Society National Meeting***, KINTEX, Ilsan, South Korea, April 16-18, 2014.
43. Invited Seminar, Metal Nanostructured Plasmonic Bioprobes, ***Graduate School of Public Health, Seoul National University***, Seoul, South Korea, April 24, 2014.
44. Invited Seminar, Plasmonically Enhanced Optical Nanoprobes and Their Biosensing Applications**, *Department of New Biology, DGIST***, Daegu, South Korea, June 3, 2014.
45. Invited Speaker, Emerging Plasmonic Nanoprobes**, *Kavli Futures Symposium: Nanomaterials Science in Asian Perspective***, Seoul, South Korea, June 19-20, 2014.
46. Invited Speaker, Plasmonic Nanoprobes with Ultrasmall Nanogap, ***International Scanning Probe Microscopy Conference***, Sogang University, Seoul, South Korea, July 1, 2014.
47. **Plenary Speaker**, Interfacing Biological Molecules and Cells with Functional Nanostructures and Synthetic Lipids, ***The 1st International Conference on Cell Encapsulation***, KAIST, Daejeon, South Korea, July 7, 2014.
48. Invited Speaker, Controlled Synthesis and Biosensing Applications of Plasmonically Coupled Nanostructures***, Institute of Process Engineering, Chinese Academy of Sciences***, Beijing, China, July 28, 2014.
49. Invited Speaker, Synthesis, Optics and Biodetection Applications of Plasmonically Coupled Nanostructures, ***National Center for Nanoscience and Technology, Chinese Academy of Sciences***, Beijing, China, July 28, 2014.
50. Invited Speaker,Plasmonically Coupled Nanostructures and Their Biosensing Applications, ***School of Physics and Technology, Wuhan University***, Wuhan, China, August 4, 2014.
51. Invited Speaker, Synthesis, Optics and Biosensing Applications of Plasmonic Nanostructures with Controllable Ultrasmall Nanogap, ***Institute of Physics, Chinese Academy of Sciences***, Beijing, China, August 12, 2014.
52. Invited Speaker, Synthesis, Optics and Biodetection Applications of Plasmonic Nanostructures with Ultrasmall Nanogap, ***Institute of Chemistry, Chinese Academy of Sciences***, Beijing, China, August 14, 2014.
53. Invited Speaker, Synthesis, Optics and Applications of Plasmonic Nanostructures with Ultrasmall Nanogap, ***Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences***, Beijing, China, August 14, 2014.
54. Invited Speaker,Plasmonic Nanoparticles with Ultrasmall Nanogap, ***The 2014 International Conference on Advances in Materials Research***, The 2014 World Congress on Advances in Civil, Environmental, and Materials Research, BEXCO, Busan, South Korea, August 27, 2014.
55. Invited Speaker, Synthesis, Optics and Biosensing Applications of Plasmonic Nanostructures with Ultrasmall Nanogap, ***International Symposium on Advanced Biopolymers, 2014 Fall Meeting of the Polymer Society of Korea***, Jeju ICC, Jeju Island, South Korea, October 7, 2014.
56. Invited Speaker, Design, Synthesis and Application of Plasmonically Coupled Nanostructures, ***Pioneer NanoSeoul Forum 2014***, Yonsei University, Seoul, South Korea, October 10, 2014.
57. Invited Speaker, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled Nanoprobes, ***The 2nd Annual Scientific Meeting of the Korean Society for Nanomedicin***e, Seoul National University Hospital, November 14, 2014.
58. Invited Seminar, Plasmonic Nanogap Probes for Biosensing and Bioimaging Applications, ***Gwangju Institute of Science and Technology (GIST)***, Gwangju, South Korea, November 20, 2014.
59. Invited Speaker, Nanostructures on Supported Lipid Bilayer, ***27th Korean Academy of Science and Technology Prestige Workshop***, Ritz-Carlton Seoul Hotel, Seoul, South Korea, December 4, 2014.
60. Invited Seminar, Design, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled Nanostructures ***ShanghaiTech University SPST Seminar***, Shanghai, China, January 23, 2015.
61. Invited Seminar, Design, Synthesis and Biomedical Applications of Optically Enhanced Plasmonic Nanostructures, Department of Chemistry, ***Sookmyung Women’s University***, Seoul, South Korea, March 25, 2015.
62. Invited Seminar, Design, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled Nanostructures, EEWS, ***Korea Advanced Institute of Science and Technology***, April 8, 2015.
63. Invited Speaker, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled Nanomaterials, ***The 2nd Fudan-UC Berkeley Workshop on Materials Beyond Symposium***, Shanghai, China, April 27, 2015.
64. Keynote Speaker, Plasmonically Coupled Nanostructures for Biomedical Applications, ***The 3rd International Symposium on Molecular Imaging and Nanomedicine***, Suzhou, China, April 25-29, 2015.
65. Plenary Speaker, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled Nanomaterials, ***International Symposium on Optoelectronics, Materials and Energy***, Nanjing, China, June 2-5, 2015.
66. Keynote Speaker, Plasmonically Coupled Nanostructure-Based Nanoplasmonics and Their Biomedical Applications, ***Frontiers of Nanochemistry 2015, Peking University***, Beijing, China, June 5-8, 2015.
67. Invited Seminar, Synthesis, Optics and Biomedical Applications of Plasmonically Coupled, Controlled and Enhanced Nanostructures, ***National Center for Nanoscience and Technology, Chinese Academy of Sciences***, Beijing, China, June 2015.
68. Plenary Speaker, Plasmonically Coupled Nanostructure-Based Photonics and Their Biomedical Applications ***ShanghaiTech Advances in Research (STAR) Symposium***, Shanghai, China, June 24-26, 2015.
69. Invited Speaker, Synthesis, Optics and Biomedical Applications of Plasmonic Nanostructures with ~1 nm Gap, ***Nano Korea 2015 Symposium***, Coex, Seoul, South Korea, July 1-3, 2015.
70. Invited Seminar, Synthesis, Optics and Biomedical Applications of Plasmonically Enhanced Nanostructures, ***Department of Materials Science and Engineering, Nanyang Technological University***, Singapore, July 20, 2015.
71. Invited Seminar, Synthesis, Optics and Biomedical Applications of Plasmonic Nanostructures with Ultrasmall Nanogap, Department of Chemistry, ***Nanyang Technological University***, Singapore, August 6, 2015.
72. Invited Speaker, Plasmonically Enhanced Nanostructures with Ultrasmall Gap, International Symposium on Pioneers in Photonic and Electronic Nanostructures, JW Marriott Hotel, Seoul, South Korea, August 13-14, 2015.
73. Invited Speaker, Plasmonically Coupled Nanostructures with Highly Controllable Ultrasmall Gap, ***Kavli Institute for Theoretical Physics China Program on Plasmonic Nanogaps and Circuits****, Chinese Academy of Sciences*, Beijing, China, October 12, 2015.
74. Invited Speaker, Nanoparticle-based Onsite Screening of Noroviruses, ***The 30th Korean Society of Food Hygiene and Safety Annual Meeting***, The-K Hotel, Seoul. South Korea, October 23, 2015.
75. Invited Speaker, Synthesis, Optics and Biomedical Applications of Strongly Coupled Plasmonic Nanostructures, ***ENGE 2015 (Electronic Materials and Nanotechnology for Green Environment)***, October 30, 2015.
76. Invited Seminar, Design, Synthesis and Biomedical Applications of Plasmonic Nanoprobes with Nanogap, ***Department of Materials Science and Engineering, Yonsei University***, Seoul, South Korea, November 4, 2015.
77. Invited Speaker, Nanoplasmonics: Design, Synthesis, Optics & Biomedical Applications of Plasmonically Coupled Nanostructures, ***Pioneers NanoSeoul Forum***, Seoul National University, Seoul, South Korea, November 6, 2015.
78. Invited Speaker, Nanoplasmonics: Plasmonically Coupled Nanostructures, ***6th International Collaborative and Cooperative Chemistry Symposium, Seoul National University***, Seoul, South Korea, November 17, 2015.
79. Invited Speaker, Non-toxic plamonic core-petal nanoprobes for photothermal-photodynamic cancer therapeutic applications, ***The Association of High-Potential Enterprises of Korea-SNU Joint Conference on Advanced Technologies***, Hoam Convention Center, Seoul National University, November 17, 2015.
80. Keynote Speaker, Design, Synthesis and Applications of Plasmonic Nanogap Structures**, *The Conference on Advances in Materials for Sustainable Energy***, Northeast Normal University, Changchun, China, March 26, 2016.
81. Physical Biology Lectureship, Plasmonic Nanogap Particles with Ultrasmall Nanogap for Enhanced Raman Scattering and Biotechnology**, *Shanghai Institute for Applied Physics, Chinese Academy of Sciences***, Shanghai, China, March 30, 2016.
82. Invited Seminar, Synthesis, Optics and Applications of Plasmonic Nanogap Structures, ***Institute of Chemistry****,* ***Chinese Academy of Sciences***, Beijing, China, April 6, 2016.
83. Invited Seminar, Design, Synthesis and Biomedical Applications of Plasmonic Nanogap Structures, ***National Center for Nanoscience and Technology, Chinese Academy of Sciences***, Beijing, China, April 8, 2016
84. Invited Seminar, Design, Optics and Biomedical Applications of Plasmonic Nanogap-Enhanced Raman Scattering, ***Tianjin University***, Tianjin, China, April 11, 2016.
85. Global Vision Lecture of the SKIPER College, Synthesis, Optics and Biomedical Applications of Plasmonic Nanogap Particles, ***Institute of Process Engineering, Chinese Academy of Sciences***, Beijing, China, April 12, 2016.
86. Nanotechnology Forum (Invited Seminar), Chemistry, Optics and Biomedical Applications of Plasmonic Nanogap Structures, ***College of Chemistry and Molecular Engineering, Peking University***, Beijing, China, April 13, 2016.
87. Invited Seminar, Plasmonic Nanogap Structures and Their Applications, ***Center for Nanoscience and Nanotechnology & School of Physics and Technology****,* ***Wuhan University***, Wuhan, China, April 15, 2016.
88. Invited Seminar, Syntheses, Photonics and Biomedical Applications of Plasmonic Nanogap Particles, ***Department of Chemistry, Tsinghua University***, Beijing, China, April 19, 2016.
89. Invited Speaker, Metal Nanogap of Plasmonics and Biomedical Applications, ***Materials Beyond III: UC Berkeley-Fudan University Joint Symposium, Fudan University***, China, May 26, 2016.
90. Keynote Speaker, Synthetic Strategies, Optics and Biomedical Applications of Plasmonic Nanogap Structures, ***Young Giants of Nanoscience 2016***, Hong Kong, May 30, 2016
91. Invited Speaker, Nanogap Plasmonics and Biomedical Applications, ***Nano Korea 2016****,* KINTEX, South Korea, July 14, 2016.
92. Invited Seminar, ***Department of Chemistry and Biochemistry,******Waseda University***, Tokyo, Japan, July 22, 2016.
93. Invited Seminar, ***Department of Chemistry,******The University of Tokyo***, Tokyo, Japan, July 27, 2016.
94. Invited Seminar, ***Tanaka Precious Metals***, Tsukuba, Japan, August 2, 2016.
95. Invited Seminar, ***Department of Chemistry, Tokyo Institute of Technology***, Yokohama, Japan, August 8, 2016.
96. Invited Speaker, ***Japan Society of Applied Physics-Optical Society of America Joint Symposium***, Niigata, Japan, September 14, 2016.
97. Invited Speaker, ***SPIE/COS Photonics Asia***, Beijing International Convention Center, Beijing, China, October 12-14, 2016.
98. Invited Speaker, ***9th Korea Chemosensor Symposium***, Yonsei University, January 20, 2017.
99. Keynote Speaker, ***International Advanced Drug Delivery Symposium***, Industrial Technology Research Institute (ITRI) and National Tsing Hua University, Taiwan, April 6-7, 2017.
100. Keynote Speaker, ***Korean Chemical Society-ACS Central Science Joint Symposium***, KINTEX, South Korea, April 20, 2017.
101. Invited Seminar, ***Korea Institute of Science and Technology***, Seoul, South Korea, April 28, 2017.
102. Invited Speaker, ***Gordon Research Conference (GRC) on Plasmonically-Powered Processes***, The Chinese University of Hong Kong, June 25-30, 2017.
103. Invited Seminar, Plasmonically Engineered Metal Nanogap Structures for Photonics and Biomedical Applications, ***Institute of Textile and Clothing, Hong Kong Polytechnic University***, Hong Kong, June 28, 2017.
104. Invited Seminar, ***Department of Chemistry, City University of Hong Kong***, Hong Kong, July 4, 2017.
105. Invited Seminar, ***National Center for Nanoscience and Technology, Chinese Academy of Sciences***, Beijing, China, August 27, 2017.
106. Invited Seminar, ***Institute of Process Engineering, Chinese Academy of Sciences***, Beijing, China, August 28, 2017.
107. Keynote Speaker, Session 14. Nanotechnology for Bioimaging and Diagnostics, ***The 7th International Conference on Nanoscience and Technology, China 2017 (ChinaNANO)***, Beijing International Convention Center, Beijing, China, August 29, 2017.
108. Invited Speaker, ***Small Sciences Symposium, organized by Wiley and ChinaNANO*,** Beijing International Convention Center, Beijing, China, August 30, 2017.
109. Invited Speaker, ***Korea-China Joint Symposium on Inorganic Chemistry***, Jeju Island, South Korea, October 27-28, 2017.
110. Invited Speaker**, *SNU-UC Berkeley Joint Symposium – Next Revolutions in Chemical Science***, Seoul National University, Seoul, South Korea, October 30, 2017.
111. Invited Speaker, ***Inter-Academy Seoul Science Forum (IASSF) Chemistry Session***, The Plaza Hotel, Seoul, South Korea, November 1, 2017.
112. Invited Speaker/Moderator/Organizer, ***The 32nd Korean Academy of Science and Technology (KAST) Prestige Workshop***, The Plaza Hotel, Seoul, South Korea, November 1, 2017.
113. Invited Speaker, ***2017 Samsung Annual Form***, The-K Hotel, Seoul, South Korea, November 2, 2017.
114. Keynote Speaker, ***International Conference on SERS (SERS-2017)***, Xiamen University, Xiamen, China, December 5-9, 2017.
115. Invited Seminar, Plasmonically Engineered Nanostructures for Surface-Enhanced Spectroscopic and Biomedical Applications, ***Department of Electrical and Computer Engineering, National University of Singapore*,** Singapore, December 21, 2017.
116. Invited Seminar, Quantitative Plasmonic Enhancement with Metal Nanogap Nanostructures, ***Department of Chemistry, National University of Singapore***, Singapore, January 3, 2018.
117. Invited Seminar, Plasmonically Engineered Nanoprobes for Biomedical Applications, ***School of Materials Science and Engineering, Nanyang Technological University***, Singapore, January 4, 2018.
118. Invited Seminar, Translational Chemical Nanoplasmonics for Biomedical Applications, ***Department of Chemistry, Yonsei University***, Seoul, April 5, 2018.
119. Invited Speaker, Quantitatively Tunable Plasmonic Nanogap Particles, ***IBS Meta-Optics Workshop, Institute for Basic Science***, Daejeon, April 25, 2018.
120. Invited Speaker, Quantitative Nanoplasmonics for Biomedical Applications, ***Pioneer Symposium on Light Matter Interaction in Quantum Scale, Korean Physical Society Spring Meeting***, Daejeon, April 26, 2018.
121. Invited Seminar, Ultra-Tunable Nanoplasmonics for Biomedical Applications, ***Department of Chemistry, Princeton University***, New Jersey, USA, July 6, 2018.
122. Invited Speaker, Plasmonic Nano-Coupling-Based Biodiagnostics and Biocomputing, ***Plasmonics and Nanophotonics, Gordon Research Conference (GRC)***, Newry, Maine, USA, July 10, 2018.
123. Invited Seminar, Nanoplasmonic Probes for Biomedical Applications, ***Department of Chemistry, Harvard University***, Boston, Massachusetts, USA, July 13, 2018.
124. Invited Seminar, Ultra-Tunable Nanoplasmonic Probes for Biomedical Applications, ***Department of Materials Science and Engineering, Massachusetts Institute of Technology***, Boston, Massachusetts, USA, July 16, 2018.
125. Invited Seminar, Ultra-Tunable Plasmonic Nanostructures for Biomedical Applications, ***Department of Chemistry, Stanford University***, CA, USA, July 27, 2018.
126. Invited Seminar, Nanoengineered Plasmonic Probes for Biomedical Applications, ***Department of Materials Science and Engineering, Stanford University***, CA, USA, August 2, 2018.
127. Invited Seminar, Ultra-Tunable Plasmonic Nanoprobes for Biomedical Applications, ***School of Chemistry, Beihang University***, Beijing, China, October 11, 2018.
128. Invited Speaker, Quantitative Nanoplasmonics with Nanogap Structures for Biomedical Applications, ***The Second Conference of 3G Scientists***, Tianjin, China, October 12, 2018.
129. Invited Speaker, Nanoengineered plasmonic biosensing probes, ***SPIE/COS Photonics Asia***, Beijing International Convention Center, October 13, 2018.
130. Invited Speaker, Ultra-Tunable, Quantitative Nanogap Plasmonics for Biomedical Applications, ***SNU-Stanford Joint Chemistry Symposium***, Seoul National University, Seoul, South Korea, November 2, 2018.
131. Keynote Speaker, Plasmonically Enhanced Nanoprobes for Biomedical Applications, ***4th International Symposium on Molecular Imaging and Nanomedicine***, Suzhou, China, November 5, 2018.
132. Invited Seminar, Plasmonically Enhanced Nanoprobes for Biomedical Applications, ***Shanghai Institute of Applied Physics, Chinese Academy of Sciences***, Jiading district, Shanghai, China, November 6, 2018.
133. Invited Seminar, Nanoplasmonic Bioprobes for Biomedical Applications, ***Korea Institute of Science and Technology***, Seoul, South Korea, November 26, 2018.
134. Invited Speaker, Quantitative Nanoplasmonics for Biomedical Applications, ***Mini-symposium on Nanoscience, ShanghaiTech University***, Shanghai, China, December 15, 2018.
135. Invited Seminar, Plasmonically Enhanced Nanostructures for Quantitative Plasmonics and Biomedical Applications, ***Department of Chemistry, Fudan University***, Shanghai, China, December 17, 2018.
136. Invited Speaker, Plasmonic Nanoprobe-Modified Lipid Bilayer Platforms for Biosensing and Molecular Computing Applications, ***Korean Physical Society (KPS) Meeting***, Daejeon April 25, 2019.
137. Invited Seminar, Chemical Nanoplasmonics with Nanobioprobes, ***School of Chemical and Biomedical Engineering, Nanyang Technological University***, Singapore, June 12, 2019.
138. Invited Seminar, Chemical Nanoplasmonics for Surface-Enhanced Spectroscopy & Nanobiotechnology***, MSE-Colloquium@NTU, School of Materials Science and Engineering, Nanyang Technological University***, Singapore, June 13, 2019.
139. Invited Seminar, Chemical Plasmonics with Metal Nanogap Particles***, Department of Chemistry, National University of Singapore***, Singapore, June 14, 2019.
140. Invited Seminar, Plasmonic Nanoparticle-Modified Lipid Bilayer Platforms for Biotechnology, ***Department of Chemistry, Shanghai Jiao Tong University***, Shanghai, China, August 13, 2019.
141. Keynote Talk, Nanoparticle-modified lipid bilayer platforms for biosensing and biocomputing applications, ***ChinaNANO***, Beijing International Convention Center, Beijing, China, August 17, 2019.
142. Invited Speaker, Chemical Plasmonics with Nanogap Particles, ***2019 ACS Publications Forum Satellite Workshop***, Seoul National University, Korea, October 2, 2019.
143. Invited Seminar, Scalable Chemical Nanoplasmonics for Biomedical Applications, ***National Center for Nanoscience and Technology, Chinese Academy of Sciences***, Beijing, China, November 13, 2019.
144. Invited Seminar, Scalable SERS Nanoprobes for Biomedical Applications, ***Institute of Advanced Synthesis, Nanjing Tech University***, Nanjing, China, November 15, 2019.
145. Invited Seminar, Nanoparticle-Tethered Lipid Bilayer Platforms for Biomedical Applications, ***Nanjing University of Posts and Telecommunications***, November 15, 2019.
146. Invited Talk, Plasmonic Nanogap-Enhanced Raman Scattering for Biomedical Applications, ***Materials Research Meeting 2019***- Materials Innovation for Sustainable Development Goals, Yokohama, Japan, December 12, 2019.
147. Invited Talk, Scalable Plasmonic Nanogap-Enhanced Raman Scattering Probes, ***Half-day Seminars on New Trends in Plasmonics, Department of Chemistry, The University of Tokyo***, Tokyo, Japan, December 16, 2019.
148. Invited Seminar. Chemical Nanoplasmonics for Biomedical Applications, ***Department of Mechanical Engineering, Columbia University***, NY, USA, February 1, 2020.
149. Invited Talk, Inorganic Chemistry Symposium 2 - Probing Bioinorganic Chemistry: Imaging Bioinorganic Species, ***2020 Korean Chemical Society Fall Meeting***, October 20, 2020.
150. Invited Talk, Focus Session on Colloidal Plasmonics & Metamaterials, ***2020 Korean Physical Society Fall Meeting***, November 4, 2020.
151. Invited Talk, ***2020 Korean Association for Genome Editing Annual Symposium***, November 10, 2020.
152. Invited Seminar, ***Department of Applied Chemistry, Kyung Hee University***, November 12, 2020.
153. Invited Seminar, ***Wiley SmartMat Academic Seminar Series***, November 20, 2020.
154. Invited Talk, Scalable Surface-Enhanced Raman Scattering Nanoprobes for Next-Generation Biomedical Diagnostics, IBS Symposium, ***127th Korean Chemical Society National Meeting***, April 21, 2021.
155. Invited Talk, Plasmonic Gap Nanoparticles with Optiꠓcally Amplifiable Signals, ***2021 Korean Society of Industrial and Engineering Chemistry Fall Meeting***, May 13, 2021.
156. Invited Seminar, Optically Controllable and Amplifiable Metal Nanoparticles and Their Applications, ***Samsung Advanced Institute of Technology*,** Suwon, South Korea, July 2, 2021.
157. Invited Talk, Plasmonically Engineered Nanoprobes for Biomedical Applications, ***International Conference on "Materials for Humanity (MH 21)”***, Singapore (MRS-S), July 9, 2021.
158. Invited Talk, Lipid Nanotablets for Smart Biosensing and DNA Computing Applications, ***Nano Korea 2021 (Nanophotonics Session)***, July 9, 2021.
159. Plenary Talk, ***The 9th International Conference on DNA Nanotechnology***, Wuhan, China, August 11-13, 2021.
160. Invited Talk, ***JSAP-OSA Joint Symposium***, Japan, September 10, 2021.
161. Invited Talk, ***Nature Conference on Bio-Inspired Nanomaterials***, Seoul, South Korea, November 15-17, 2021.
162. Invited Seminar, ***Department of Chemistry, UNIST***, Ulsan, South Korea, December 2, 2021.
163. Invited Talk, Scalable surface-enhanced spectroscopic nanoprobes for biomedical applications, ***Pacifichem 2021*** (The 2021 International Chemical Congress of Pacific Basin Societies), Hawaii, USA, December 19, 2021.
164. Invited Talk, Plasmonic nanoprobe-modifed lipid bilayer platforms for biosensing and biocomputing applications, ***Pacifichem 2021*** (The 2021 International Chemical Congress of Pacific Basin Societies), Hawaii, USA, December 21, 2021.
165. Invited Talk, ***Chemistry-Medicine Unmet Needs Symposium***, Seoul National University, Seoul, South Korea, January 18, 2022.
166. SNU Excellence in Research Award Lecture, ***Seoul National University***, January 19, 2022.
167. Invited Seminar, ***Department of Bioengineering, University of Washington***, Seattle, Washington, USA, February 11, 2022.
168. Invited Seminar, Department of Chemistry, GIST, Gwangju, South Korea, April 28, 2022.
169. Invited Seminar, Department of Chemistry, Chung-Ang University, Gwangju, South Korea, May 12, 2022.
170. Invited Seminar, Department of Electrical Engineering, KAIST, Dagjeon, South Korea, May 19, 2022.
171. Invited Talk, ***Gordon Research Conference on Biointerface Science***, Italy, June 12-17, 2022.
172. ***Outstanding Inorganic Chemists Award Lecture***, KCS Inorganic Chemistry Division Summer Symposium, June 23, 2022.
173. Invited Speaker, Synthesis, Plasmonics and Biomedical Applications of Nanostructured Metal Nanoparticles, ***Advanced Manufacturing Technology Symposium, Nanyang Technological University***, Singapore, June 27, 2022.
174. Invited Seminar, ***Department of Chemistry, National University of Singapore***, Singapore, June 28, 2022.
175. Invited Speaker, ***Nano Convergence Special Session, Nano Korea 2022***, Korea, July 7, 2022.
176. Invited Seminar, ***School of Chemical and Biomedical Engineering, Nanyang Technological University***, Singapore, July 12, 2022.
177. Invited Seminar, Nanostructured Raman Probes for Next-Generation Biodiagnostic Applications, ***Nanomedicine TRP Seminar, National University of Singapore School of Medicine***, Singapore, August 2, 2022.
178. Invited Seminar, ***Department of Chemistry, Nanyang Technological University***, Singapore, August 3, 2022.
179. Invited Seminar, ***Seegene Medical Foundation***, Seoul, Korea, August 23, 2022.
180. Invited Talk, ***SPIE Optics + Photonics***, San Diego, USA, August 21-25, 2022.
181. Invited Seminar, ***Department of Chemistry, Chung-Ang University***, Seoul, Korea, October 11, 2022.
182. Invited Speaker and Organizer, ***Nanomaterials LEDARE Workshop***, Solna, Sweden, October 26-28, 2022.
183. Invited Speaker, ***SNU-Stanford University Joint Chemistry Symposium***, Seoul National University, Seoul, South Korea, November 2-3, 2022.
184. Invited Speaker, ***The 19th Korea-Japan Joint Symposium on Organometallic and Coordination Chemistry***, Sheraton Grand Incheon Hotel, Incheon, South Korea, November 23-25, 2022.
185. Invited Speaker, ***The Korean Academy of Science and Technology Special Lecture for Science Gifted Student***s, The Korean Academy of Science and Technology Hall, South Korea, December 20, 2022.
186. Keynote Speaker, ***The 1st IDMxS (Institute for Digital Molecular Analytics and Science) Symposium***, Nanyang Technological University, Singapore, January 6, 2023.
187. Invited Seminar, ***Department of Chemistry, City University of Hong Kong***, Hong Kong, January 16, 2023.
188. Invited Seminar, ***Department of Chemistry, Chinese University of Hong Kong***, Hong Kong, January 17, 2023.
189. Invited Seminar, ***Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University***, January 19, 2023.
190. Invited Speaker, ***IBS Conference: Emerging Technologies for Molecular- and Nano-Modulations for Neuro- and Cell-engineering***, IBS Hall, Yonsei University, Seoul, South Korea, April 24, 2023.
191. Invited Speaker, ***Symposium on New Trends in Nanomaterials, The University of Tokyo***, Tokyo, Japan, May 29, 2023.
192. Plenary Speaker, ***Biosensors 2023: 33rd Anniversary World Congress on Biosensors (Elsevier)***, Busan, South Korea, June 5-8, 2023.
193. Invited Seminar, ***KoBioLabs***, Gyeonggi-do, South Korea, July 6, 2023.
194. Physical Chemistry Lecture, ***Department of Chemistry, University of California, Berkeley****,* CA, USA, October 10, 2023.
195. Frontiers in Nanotechnology Seminar, ***International Institute for Nanotechnology,*** Northwestern University, Evanston, IL, USA, November 14, 2023.
196. Invited Seminar, ***Department of Chemistry, The University of Chicago,*** Chicago, IL, USA, November 16, 2023.
197. Invited Seminar, ***Department of Chemistry, Columbia University,*** New York, USA,November 20, 2023.
198. BioE Seminar, ***Department of Bioengineering, UC Berkeley***, CA, USA, January 24, 2024.
199. Invited Speaker, ***Stanford-SNU Joint Chemistry Symposium***, Stanford University, CA, USA, January 29, 2024.
200. Invited Seminar, ***Department of Chemistry, Hanyang University***, Seoul, South Korea, March 20, 2025.
201. Great Scholar Career Decisions Lecture, ***The Korean Academy of Science and Technology***, March 25, 2024.
202. Invited Speaker, ***Nanomaterials Chemistry Workshop, Kyoto University***, April 5, 2024.
203. Invited Speaker, ***KCS-ACS JACS Summit (ACS Publications Summit)***, Suwon Convention Center, April 24, 2024.
204. Invited Seminar, ***Institute for Molecular Medicine, Shanghai Jiao Tong University***, Shanghai, China, May 10, 2024.
205. Invited Speaker, ***School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University***, Shanghai, China, May 11, 2024.
206. Invited Keynote Speaker, ***Joint Symposium on Functional Nanomaterials, Westlake University***, Hangzhou, China, May 13, 2024.
207. Invited Seminar, ***Department of Chemistry, Zhejiang University***, Hangzhou, China, May 14, 2024.
208. Invited Seminar, ***Hangzhou Institute for Medicine, Chinese Academy of Sciences***, Hangzhou, China, May 14, 2024.
209. Invited Seminar, ***Department of Chemistry, Fudan University***, Shanghai, China, May 16, 2024.
210. Invited Keynote Speaker, ***Advances in Materials for Sustainable Energy 2024, Shanghai Normal University***, Shanghai, China, May 19, 2024.
211. Invited Seminar, ***Samsung Electro-Mechanics***, Suwon, South Korea, May 28, 2024.
212. IBS Seminar, ***Center for Cognition and Sociality, Institute for Basic Science***, Daejeon, South Korea, May 29, 2024.
213. Invited Speaker, ***Biointerface Science Gordon Research Conference***, Tuscany, Italy, June 16-21, 2024.
214. Invited Speaker, ***The 36th*** ***Prestige Workshop, The Korean Academy of Science and Technology***, Westin Josun Hotel, Seoul, South Korea, July 2, 2024.
215. Invited Speaker, ***ACS-IBS Symposium, School of Chemical and Biological Engineering, Seoul National University***, Seoul, South Korea, July 5, 2024.