

Ki-Bum Lee

Dept. of Chemistry & Chemical Biology
Inst. for NanoBiomedical Research
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ACADEMIC POSITION

2016 - Present Professor

2013 - 2016 Associate Professor (with tenure)

2008 - 2013 Assistant Professor

Rutgers, The State University of New Jersey, Piscataway, NJ
Department of Chemistry and Chemical Biology

Rutgers faculty in the following Programs, Depts, and Institutes:

Biomedical Engineering Dept. Graduate Program	(2008- present)
Graduate Program in Molecular Biosciences	(2009-present)
The Rutgers Stem Cell Research Center	(2008- present)
Human Genetics Institute of New Jersey	(2014- present)
Rutgers Brain Health Institute	(2015- present)
New Jersey Center for Biomaterials (RUNEG)	(2015- present)
Center for Integrative Proteomics Research	(2016- present)
Quantitative Biomedicine Graduate Program	(2016- present)
Cancer Institute of New Jersey (Full Member)	(2018- present)
Chemical and Biochemical Engineering Dept.	(2019- present)

2017 Visiting Professor

Kyoto University, Kyoto, Japan [Japan Society for the Promotion of Science (**JSPS**) Fellowship]

2013/Summer Visiting Professor

Princeton University (Princeton Neuroscience Institute)
Biophysics and Computation in Neurons and Networks

2007 Visiting Professor

UCLA Medical School, Los Angeles, CA
Dept. of Molecular and Medical Pharmacology

EDUCATION

PostDoc Chemical Biology, (Advisor: **Peter G. Schultz**) The Scripps Research Institute, La Jolla, CA, 2004~2007.

Ph. D. Bioinorganic/Nano Chem, (Advisor: **Chad A. Mirkin**) Northwestern University, Evanston, IL, Aug, 2004.

M. S. Physical Chemistry, KAIST (Korea Advanced Institute of Science and Technology), Taejon, Korea, Feb. 2000.

B. S. Chemistry, Kyung Hee University, Seoul, Korea, Feb. 1998, graduated summa cum laude.

AWARDS AND HONORS

NIH Nanotechnology Study Section-NANO (Standing Member, 2020-2024)

Nano Convergence, *Executive Editor* (2020- present)

Singapore National Medical Research Council (NMRC)-International Expert Review Panel (2020-2022)

Burroughs Wellcome Fund Collaborative Research Award (2019- 2020)

Busch Biomedical Grant Award (2020- 2022)

Rutgers TechAdvance Award (2020)

Rutgers TechAdvance Award (2019)

Rutgers Patent Award (2019)

American Chemical Society New Directions (ND) Award (2015- 2017)

Japan Society for the Promotion of Science (JSPS) Fellowship (2017)

Rutgers Global Research Grant (2018-2020)

Rutgers Brain Health Institute (BHI) Grant Awards (2017 and 2019)

Rutgers Patent Award (2017)

NSF I-Corps Award (2015- 2016)

The University City Science Center's QED Award (2016)

Burroughs Wellcome Fund Collaborative Research Award (2014- 2015)

New Jersey Spinal Cord Research Award (2009, 2013, 2016, and 2017)

Busch Biomedical Grant Award (2013- 2014)
 Early Career Investigator Travel Fellowship, Nanotechnologies in Cancer at Memorial Sloan-Kettering Cancer Center (2013)
Board of Trustees Research Award for Scholarly Excellence (2013)
 Faculty Research Award, Rutgers University (2012- 2013)
 Johnson and Johnson Proof-of-Concept Award (2011- 2012)
NIH Director's New Innovator Award (2009- 2014)
 Grant Proposal Development Award, Rutgers University (2008)
 CIRM (California Institute for Regenerative Medicine) Post-doctoral Fellowship (2006- 2007)
 NSEC (Nanoscale Science and Engineering Center) Outstanding Research Award, Northwestern University (2004)
 MRS (Materials Research Society) Graduate Student Research Award (2003)
 Korean-American Scholarship (2003)
 L. Carroll King Award for Excellence Chemistry Teaching, Northwestern University (2001)
 University Presidential Fellowship, Northwestern University (2001)
 NSEC Board of Student Advisors (2000- 2004)
 Honor scholarship, Kyung Hee University (1995-1997)

OTHER EXPERIENCE AND PROFESSIONAL MEMBERSHIPS

Research Scientist, SAMSUNG SDI CO., LTD (2000)
 NSEC Board of Student Advisors (2000-2004)
 American Chemical Society (2000 – present)
 Material Research Society (2002 – present)
 The New York Academy of Sciences (2005 – present)
 International Society for Stem Cell Research (ISSCR) (2010 – present)
 NSF Panel Reviewer, Biomaterials Programs (2011)
 Ad hoc reviewer, National Research Foundation of Korea (Korea) (2011)
 Ad hoc reviewer, Medical Research Council (MRC, UK) (2011-2013)
 Ad hoc reviewer, National Science Center (Poland) (2012)
 Ad hoc reviewer, Portuguese Foundation for Science and Technology (FCT, Portugal) (2012)
 NSF Panel Reviewer, NanoEHS (2013)
 NSF Panel Reviewer, Stem Cell Tissue-Engineering (2013), NSF Panel Reviewer, Stem Cell Tissue-Engineering (2015)
 Ad hoc reviewer, Congressionally Directed Medical Research Programs [CDMRP, X2] (2015)
 NIH Panel Reviewer (X2), BMBI (2016), NIH/NIEHS Special Emphasis Panel Reviewer, NHIR (2016) CDMRP Ad hoc reviewer (2016)
 NIH Panel Reviewer (X3), BMBI (2017); NIH Panel Reviewer, NANO (2017), NIH/NIBIB Panel Reviewer (2017)
 CDMRP Ad hoc reviewer (2017)
 NIH Panel Reviewer (X4), BMBI (2018); NIH Panel Reviewer, MTE (2018); NIH Panel Reviewer, GDD, NIH/NIBIB (2018)
 CDMRP Ad hoc reviewer (2019)
 NIH Panel Reviewer (X4), BMBI (2019); NANO (2019); MTE (2019); GDD (2019) Director's New Innovator Award (2019)
 CDMRP Ad hoc reviewer (X2, 2020), NIH Panel Reviewer (X2): MTE and SARS-CoV-2 Emergency Awards (2020), NSF CASIS Review Panel (2020)
Singapore National Medical Research Council (NMRC)-International Expert Review Panel (2020-2022)
NIH Nano Study Section (Standing Member) (2000-2024)

PROFESSIONAL RESEARCH EXPERIENCE

Professor, Dept. of Chem. & Chemical Biology, Rutgers, The State University of New Jersey (Jan. 2008 to present)

- ❖ **Area:** Analytical and Inorganic Chemistry, Chemical Biology, Nanotechnology, Drug/Gene Delivery, Microfluidics Biomaterials/Tissue Engineering, Regenerative Medicine, Molecular Imaging, Synthetic Biology, Functional Genomics
- ❖ **Research Topic:** *Develop and integrate nanotechnologies and chemical functional genomics to modulate signaling pathways in cells (e.g. stem cells and cancer cells) and to investigate cell behaviors (e.g. self-renewal, differentiation, apoptosis, and migration)*

Post-doctoral research with Prof. Peter G. Schultz, The Scripps Research Institute (Sep. 2004 to Aug. 2007)

- ❖ Area: Chemical biology, High throughput screening, Stem cell biology, Drug discovery, Phospho- Proteomics, Synthetic Biology, Regenerative Medicine, Functional Genomics
- ❖ Research Topic: *Chemical and functional genomic approaches for regulating stem cell fate*

Graduate research with Prof. Chad A. Mirkin, Northwestern University (Aug. 2000 to Aug. 2004)

- ❖ Area: Nanobiotechnology, Biomaterials, Bio-surface science, Biosensors, Synthesis of nanocomposites
 - ❖ Ph.D. Thesis: "Nanostructures for Biomolecular Assays"
- Research Scientist at SAMSUNG SDI CO., LTD, Suwon, Korea. (2000)

PUBLICATIONS [TOTAL PUBLICATIONS (~ # 105) AND CITATION #: ~11, 000 UPDATED ON MAR 2021]-----**Publications submitted or under revision**-----

116. Rathnam, C.; Yang, L.; Castro-Pedrido, S.; Cai, L.; **Lee, K.-B.**[†], " Hybrid SMART Spheroids for Enhanced Stem Cell-based Cell Replacement Therapy ", *Science Advance*, **2021**, under the *1st revision*. (*minor revision*)
115. Yi, S. A.; Zhang, Y.; Rathnam, C.; Pongkulapa, T.; **Lee, K.-B.**[†], " Biomaterial-based Approaches for the Advancement of Organoid Research", *Advanced Materials*, **2021**, under the *1st revision*.
114. Choi, J.-H.; Kim, Shin, M.; Yang, L.; Conley, B. M.; Yoon, J.; Lee, S. -N.; **Lee, K.-B.**[†]; Choi, J.-W.[†], "CRISPR-Cas12a-mediated Amplification-free Detection of Multi-Viral DNAs Using SERS-active Graphene Oxide/Triangle Au nanoflower Array", *ACS Nano*, **2021**, under the *1st revision*. (*minor revision*)
113. Choi, H.; *et. al.* **Lee, K.-B.**[†]; Kim, Y. K.[†]; Kang, H[†], " Magnetic Control of the Vertical Position of Hierarchic Ligand Nanoassembly Regulates the Mechanosensing-Mediated Differentiation of Stem Cells", *Small*, **2021**, under the *1st revision*. (*minor revision*)
112. Wang, S.; Yang, L.; Cai, B.; Liu, F.; Hou, Y.; Zahng, H.; Kong, L.; **Lee, K.-B.**[†]; Zhang, Q.[†], "3D Nano-Hybrid Stem Cell Gel for Rapid Cartilage Regeneration", *Advanced Materials*, **2021**, *Submitted*.
111. Yang, L.; Conley, B. M.; Rathnam, C.; Cho, H.-Y.; Pongkulapa, T.; Conklin, B.; **Lee, K.-B.**[†], " Predictive Biophysical Cue Mapping for Cellular Differentiation and Reprogramming Using Combinatorial Nanoarrays", *Advanced Materials*, **2021**, *Under the review*.
110. Li, Y.; Biswas, R.; Kopcha, W. P.; Sun, Y.; Crichton, R.; Rathnam, C.; Yang, L.; Yeh, Y.-W.; Wu, S.; **Lee, K.-B.**; Zhang, J., " Metallotribuckyspheres as A Platform for Water-soluble Molecules with Endohedral Metal Ions", *Nature Chemistry*, **2021**, *Submitted*.
109. Atashgah, R. ; Ghasemi, A.; Raoufi, M.; Abdollahifar, M.; Zanganeh, S.; Nejadnik, H.; Abdollahi, A.; Sharifi, S.; Lea, B.; Cuerva, M.; Akbarzadeh, M.; Alvarez-Lorenzo, C.; Ostad, S.; Theus, A.; LaRock, D.; LaRock, C.; Serpooshan, V.; **Lee, K.-B.**; Vali, H.; Schönherr, H.; Gould, L.; Taboada, P.; Mahmoudi, M., "Restoring endogenous repair mechanisms to heal chronic wounds with a multi-functional wound dressing", *Nano Letter*, **2021**, *Submitted*.
108. Hajipour, M. J; Saei, A. A.; Walker, E. D.; Conley, B.; **Lee, K.-B.**; Mahmoudi, M., "Nanotechnology for Targeted Identification and Eradication of Bacteria: Opportunities and Challenges ", *Advanced Science*, **2021**, under the *1st revision*. (*minor revision*)
107. Choi, H.; *et. al.* **Lee, K.-B.**[†]; Kim, Y. K.[†]; Kang, H[†], "Magnetic Control of Bidirectional Nanoscale Motion of Hierarchic Ligand Nanoassembly Regulates the Adhesion and In Situ Monitorable Differentiation of Stem Cells", *Materials Horizons*, **2021**, *Submitted*.
106. Patel, M.; Li, Y.; Anderson, J.; Lei, S; Risman Rebecca; **Lee, K.-B.** ; Lyu, Y. L.; Cai, L., "Nkx6.1 promotes neurogenesis and attenuates glial scar formation in the injured spinal cord", **2021**, *Submitted*.

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105. Thangam, R. *et. al.* **Lee, K.-B.**; Paulmurugan, R.; Kim, Y. K.[†]; Kang, H[†], "Remote Switching of Elastic Movement of Decorated Ligand Nanostructures Controls the Adhesion-Regulated Polarization of Host Macrophages", *Advanced Functional Materials*, **2021**, 2008698, <https://doi.org/10.1002/adfm.202008698>
104. Min. S.; Ko, M.J. *et. al.* **Lee, K.-B.**; Wei, Q.; Kim, D.-H.; Han, S. M.; Paulmurugan, R.; Kim, Y. K.[†]; Kang, H[†], "Remote Control of Time-Regulated Stretching of Ligand-Presenting Nanocoils In Situ Regulates the Cyclic Adhesion and Differentiation of Stem Cells", *Advanced Materials*, **2021**, 33, 2008353.
103. Patel, M.; Anderson, J.; Kutcher, N.; Finkel Z.; Castro-Pedrido, S.; Lei, S; **Lee, K.-B.** ; Lyu, Y. L.; Cai, L., "Gsx1 Promotes Locomotor Functional Recovery After Spinal Cord Injury", *Molecular Therapy*, **2021**, <https://doi.org/10.1016/j.ymthe.2021.04.027>.

102. Bae, G. *et al.* **Lee, K.-B.**; Wei, Q.; Bian, L.; Paulmurugan, R.; Kim, Y. K.†; Kang, H.†, "Immunoregulation of Macrophages by Controlling Winding and Unwinding of Nanohelical Ligands", *Advanced Functional Materials*, **2021**, Accepted.
101. Yang, L.; Kim, T.-H.; Cho, H.-Y.; Chueng, S. –T.; Lee, J.-M; Luo, J.; Yin, P. T.-T.; Han, J.; Kim, J. H.; Chung, B. G.; Choi, J.-W.; **Lee, K.-B.**†, "Hybrid Graphene Oxide/Gold Nanoparticle-based Cancer-Specific Multimodal Imaging and Combined Therapeutics", *Advanced Functional Materials*, **2020**, 2006918.
100. Yang, C; Lue, J.; Pounas, M.; Bosnjak, N.; Chueng, S. –T.; Chadwick, M.; Sabaawy, H.E.; Chester, S. A.; **Lee, K.-B.**†; Lee, H.†, "4D Printed Transformable Tube Array for High-throughput 3D Cell Culture and Histology", *Advanced Materials*, **2020**, 32, 2004285. *Highlighted and selected as ("This month in pictures" in Advanced Science News)*
99. Yang, L.; Conley, B. M.; Cerqueira, S. R.; Pongkulapa, T.; Wang, S.; Lee, J.K†; **Lee, K.-B.**†, " Effective Modulation of CNS Inhibitory Microenvironment using Bio-inspired Hybrid Nanoscaffold-based Therapeutic Interventions", *Advanced Materials*, **2020**, 32, 2002578. *Highlighted and selected as (the Cover in Advanced Materials)*
Highlighted worldwide by many science magazines/websites (>21) including EurekAlert!, ScienceDaily, and MSN.
98. Conley, B. M.; Pongkulapa, T.; **Lee, K.-B.**†, "Multi-Phase Drug Release in Hollow Multi-shelled Structures", *Chem*, **2020**, Accepted. DOI:<https://doi.org/10.1016/j.chempr.2020.10.00>.
97. Choi, J.-H.; Kim, T.-H.; El-said, W. A.; Lee, J.-H.; Yang, L.; Conley, B. M.; Choi, J.-W.†; **Lee, K.-B.**†, "Sensing Neurotransmitters From Stem Cell-derived Neural Interface at the Single-Cell Level Using Graphene Oxide-Hybrid Nano-SERS Array", *Nano Letter*, **2020**, 20, 7670–7679.
96. Zhang, Y.; Wiesholler, L. M.; Rabie, H.; Jiang, P.; Lai, J.; Hisch T.; **Lee, K.-B.**†, "Remote Control of Neural Stem Cell Fate Using NIR-Responsive Photoswitching Upconversion Nanoparticle Constructs", *ACS Applied Materials & Interfaces*, **2020**, 12, 40031–40041.
95. Lee, J. M.; Kang, W. S.; Lee, K. G.; Cho, H.-Y.; Conley, B.; Ahrberg, C. D.; Lim, J. H.; Mo, S. M.; Kim, E.-J; Choi, J.-W; **Lee, K.-B.**†; Lee, S. J.†; Chung, B. G.†; "Combinatorial biophysical cue sensor array for controlling neural stem cell fate", *Biosensors and Bioelectronics*, **2020**, 15, 112125.
94. Lee, J.-H.; Lue, J.; Choi, H. K.; Chueng, S. –T.; **Lee, K.-B.**†; Choi, J.-W.†, "Functional nanoarrays for investigating stem cell fate and function", *Nanoscale*, **2020**, 12, 9306.
93. Patel, A.; Lima, M. R.; Cho, H.-Y.; **Lee, K.-B.**; Murthy, N. S.; Kohn, J., "Disassembly of Nanospheres with a PEG Shell upon Adsorption onto PEGylated Substrates", *Langmuir*, **2020**, 36, 232.
92. Yang, L.; Lee, J.H; Rathnam, C.; Choi, J.-W.†; **Lee, K.-B.**†, " Dual-Enhanced Raman Scattering-Based Characterization of Stem Cell Differentiation Using Graphene-Plasmonic Hybrid Nanoarray", *Nano Letters*, **2019**, 19, 8138.
Highlighted worldwide by many science magazines/websites (>18) including ScienceDaily, EurekAlert!, NanoWerk, and Phys Org.
91. Rathnam, C.; Chueng, S. –T.; Ying. Y. M.; **Lee, K.-B.**†; Kwan, K.†, "Bio-Inspired Nanomaterials for Delivery of Therapeutics to Treat Hearing Loss", *Frontiers in Cellular Neuroscience*, **2019**, 13, 493.
90. Lee, J.-H.; Choi, J.-H.; Chueng, S. –T.; Pongkulapa, T.; Yang, L.; Cho, H.-Y.; Choi, J.-W.†; **Lee, K.-B.**†, "Nondestructive Characterization of Stem Cell Neurogenesis By a Magneto-Plasmonic Nanomaterial-based Exosomal miRNA Detection", *ACS Nano*, **2019**, 13, 8793. *Highlighted worldwide by many science magazines/websites (>10) including EurekAlert!, Newswise, and Science Bulletin.*
89. Wang, S.; Yang, L.; Cho, H.-Y.; Chueng, S. –T.; Zhang, H.; Zhang, Q.†; **Lee, K.-B.**†, "Developing Redox and Light Responsive Core-shell Nanoparticle for Photo-Chemical Enhanced Chemodynamic Therapy", *Biomaterials*, **2019**, 224, 119498.
88. Wang, H.; Dardir, K.; **Lee, K.-B.**; Fabris, L., "The Impact of Protein Corona in Nanoflare-based Biomolecular Detection and Quantification", *Bioconjugate Chemistry*, **2019**, 30, 2555.
87. Koh, M.; Cho, H.-Y.; Yu, C.; Choi, S.; **Lee, K.-B.**†; Schultz P.G.†; "Site-specific Incorporation of a Dithiolane Containing Amino Acid in-to Proteins", *Bioconjugate Chemistry*, **2019**, 30, 2102.

86. Song, X.; Wang Y.; Zhao, F.; Li, Q.; Ta, H.Q.; Ruemmel, M. H.; Li, Z.; Yin, W.; Yang, L.; **Lee, K.-B.**; Yang, J.; Bozkurt, I.; Liu, S.; Zhang, W.; Chhowalla, M., "Plasmon free surface enhanced Raman spectroscopy using metallic 2D materials", *ACS Nano*, **2019**, *13*, 8312.
85. Rabie, H.; Zhang, Y.; Pasquale, N.; Lagos, M.; Batson, P.; **Lee, K.-B.**†, "NIR Biosensing of Neurotransmitters in Stem Cell-derived Neural Interface Using Advanced Core-shell Upconversion Nanoparticles", *Advanced Materials*, **2019**, *31*, 1806991. *Highlighted and selected as (the Cover in Advanced Materials)*
84. Suryaprakash, S.; Lao, Y.-H.; Cho, H.-Y.; Li, M.; Ji, H. Y.; Mintz, R. L.; Bago, J. R.; Hingtgen, S. D.; **Lee, K.-B.**; Leong, K. W., "Engineered Mesenchymal Stem Cell/Nanomedicine Spheroid as an Active Drug Delivery Platform for Combinational Glioblastoma Therapy", *Nano Letters*, **2019**, *19*, 17701-1705.
83. Mavi, A.; Cho, H.-Y.; Chueng, S. -T.; Pasquale, N.; Rabie, H.; Han, J.; Kim, J.-H.; Kim, T.; Choi, J.-W.†; **Lee, K.-B.**†, "Tumor Homing Reactive Oxygen Species Nanoparticle for Enhanced Cancer Therapy", *ACS Applied Materials & Interfaces*, **2019**, *10*, 23909.
82. Yang, L.; Chueng, S. -T.; Li, Y.; Rathnam, C.; Dey, G.; Wang, L.; Cai, L.; **Lee, K.-B.**†, "A Biodegradable Hybrid Inorganic Nanoscaffold for Advanced Stem Cell Therapy ", *Nature Communications*, **2018**, *9*, 3147. *Highlighted in (Nature Bioengineering Blog)*.
81. Lee, J.-H.; Cho, H. K.; Yang, L.; Chueng, S. -T.; Choi, J.-W.†; **Lee, K.-B.**†, "Non-destructive Real-Time Monitoring of Enhanced Stem Cell Differentiation using a Graphene-Au Hybrid Nanoelectrode Array", *Advanced Materials*, **2018**, *30*, 1802762. *Highlighted and selected as (the Cover in Advanced Materials)*.
80. Bhamidipati, M.; Choi, J.-H.; **Lee, K.-B.**; Fabris, L., "SERS-based Quantification of Biomarker Expression at the Single Cell Level Enabled by Gold Nanostars and Truncated Aptamers", *Bioconjugate Chemistry*, **2018**, *29*, 2970-2981.
79. Calderón, L.; Yang, L.; **Lee, K.-B.**; Mainelis, G. , "Characterization of Airborne Particle Release from Nanotechnology-enabled Clothing Products", *Journal of Nanoparticle Research*, **2018**, *20*:330.
78. Dey, G; Yang, L.; **Lee, K.-B.**; Wang, L, "Characterizing Molecular Adsorption on Biodegradable MnO₂ Nanoscaffolds", *Journal of Physical Chemistry*, **2018**, *122*, *50*, 29017-29027.
77. Yin, P.T.; Pongkulapa, T.; Cho, H.-Y.; Han, J.; Pasquale, N.; Rabie, H.; Kim, J.-H.; Choi, J.-W.; **Lee, K.-B.**†, "Overcoming Chemoresistance in Cancer via Combined microRNA Therapeutics with Anti-Cancer Drugs using Multifunctional Magnetic Core-Shell Nanoparticles", *ACS Applied Materials & Interfaces*, **2018**, *10*, 26954-26963.
76. Han, T†; Yang, L.; **Lee, K.-B.**; Mainelis, G. , "Design and development of a novel nanofiber nasal filter (NNF) to improve respiratory health, *Aerosol and Air Quality Research*", *Aerosol and Air Quality Research*, **2018**, *18*, 2064-2076.
75. Lee, J.M; Park, D. Y.; Yang, L.; Kim, E. J.; Ahrberg, C. D.; **Lee, K.-B.**† ; Chung, B. G.†, " Generation of uniform-sized multicellular tumor spheroids using hydrogel microwells for advanced drug screening", *Nature Scientific Reports*, **2018**, *8*, 17145.
74. Cho, H.-Y.; Lee, T.; Yoon, J.; Han, Z.; Rabie, H.; **Lee, K.-B.**; Su, W.W†; Cho, J.-W. †, "Magnetic Oleosome as a Functional Lipophilic Drug Carrier for Cancer Therapy ", *ACS Applied Materials & Interfaces*, **2018**, *10* , 9301–9309.
73. Cho, H.-Y.; Hossain, M. K.; Lee, J.-H.; Han, J.; Lee, H.J.; Kim, K.-J.; Kim, J.-H.; **Lee, K.-B.**† ; Cho, J.-W. †, "Selective isolation and noninvasive analysis of circulating cancer stem cells through Raman imaging", *Biosensors and Bioelectronics*, **2018**, *102*, 372-382.
72. Rathnam, C.; Chueng, S. -T.; Yang, L.; **Lee, K.-B.**†, "Advanced Gene Manipulation Methods for Stem Cell Theranostics", *Theranostics*, **2017**, *7*, 2775.
71. Li, Y.; Hao, H.; Swerdel, M.; Cho, H.-Y.; **Lee, K.-B.**; Hart, R.; Lyu, Y.; Cai, L., "Top2b is involved in the formation of outer segment and synapse during late-stage photoreceptor differentiation by controlling key genes of photoreceptor transcriptional regulatory network", *Journal of Neuroscience Research*, **2017**, *95*, 1951.
70. Calderon L.; Han, T; McGilvery, C.; Yang, L.; Zhang, J.; Subramaniam, P.; **Lee, K.-B.**; Schwander, S.; Tetley, T.; Porter, A.; Ryan, M.; Smith R.; Chung, K; Liou, P.J.; Zhang, J.; Mainelis, G. , " Release of airborne particles and Ag and Zn

- compounds from nanotechnology-enabled consumer sprays: Implications for inhalation exposure”, *Atmospheric Environment*, **2017**, 115, 85.
69. Shah, S.; Solanki, A.; **Lee, K.-B.**[†], “Nanotechnology-based Approaches for Guiding Neural Regeneration”, *Accounts of Chemical Research*, **2016**, 49, 17-26.
68. Saleh, T.; Wojciech Jankowski, W.; Sriram, G.; Rossi, P.; Shah, S.; **Lee, K.-B.**; Cruz, L. A.; Rodriguez, A. J.; Birge, R. B.; Kalodimos, C. G., “Cyclophilin A promotes cell migration via the Abl-Crk signaling pathway”, *Nature Chemical Biology*, **2016**, 12, 117-123.
67. Yin, P.T.; Shah, S.; Pasquale, N.; Garbuzenko, O. B.; Minko, T.; **Lee, K.-B.**[†], “Stem cell-based gene therapy activated using magnetic hyperthermia to enhance the treatment of cancer”, *Biomaterials*, **2016**, 81, 46-57.
66. Chueng, S. –T.; Yang, L.; Zhang, Y.; **Lee, K.-B.**[†], “Multidimensional nanomaterials for the control of stem cell fate”, *Nano Convergence*, **2016**, 3, 23.
65. Lai, J.; Yu, A.; Yang, L.; Zhang, Y.; Shah, B.; **Lee, K.-B.**[†], “The Development of Photoactivated Fluorescent N-Hydroxyoxindoles and Its Application for Cell-Selective Imaging”, *Chem. Eur. J.*, **2016**, 22, 6361-6367.
64. Zhang, J.; **Lee, K.-B.**; He, L.; Seiffert, J.; Subramaniam, P.; Yang, L.; Chen, S.; Maguire, P.; Mainelis, G.; Schwander, S.; Tetley, T.; Porter, A.; Ryan, M.; Shaffer, M.; Hu, S.; Gong, J.; Chung, K. F.; “Effects of a Nanoceria Fuel Additive on The Physicochemical Properties of Diesel Exhaust Particles”, *Environmental Science: Processes & Impacts*, **2016**, 18, 1333-1342.
63. Kim, T.; Yea, C.; Jung, D.; Yin, P. T.; Brian, C.; Pak, Y.; Jung, G.; Choi, J.-W.[†]; **Lee, K.-B.**[†], “Large-scale nanoelectrode arrays to monitor the dopaminergic differentiation of human neural stem cells”, *Advanced Materials*, **2015**, 27, 6356-6362. *Highlighted in (the Cover in Advanced Materials)*.
62. Patel, S.; Chueng, S. –T.; Yin, P.T.; Dardir, K.; Song, Z.; Pasquale, N.; Kwan, K.; Sugiyama, H.; **Lee, K.-B.**[†], “Induction of stem cell-derived Functional Neurons via NanoScript-based Gene Repression”, *Angew. Chem. Int. Ed.*, **2015**, 54, 1-7.
61. Patel, S.; Yin, P.T.; Sugiyama, H.; **Lee, K.-B.**[†], “Inducing Stem Cell Myogenesis using NanoScript”, *ACS Nano*, **2015**, 9, 6909-6917. *Highlighted worldwide by many science magazines/websites (>10) including ScienceDaily, ACS News, and Phys.org.*
60. Lai, J.; Shah, B.; Zhang, Y.; Yang, L.; **Lee, K.-B.**[†], “Real-Time Monitoring of ATP-Responsive Drug Release using Mesoporous-Silica-Coated Multicolor Upconversion Nanoparticles”, *ACS Nano*, **2015**, 9, 5234-5245.
59. Kim, T.; Shah, S.; Letao, Y.; Yin, P.T.; Hossain, M.; Brian, C.; Choi, J.-W.[†]; **Lee, K.-B.**[†], “Controlling Differentiation of Adipose-Derived Stem Cells Using Combinatorial Graphene Hybrid-Pattern Arrays”, *ACS Nano*, **2015**, 9, 3780-3790. *Highlighted in Faculty of 1000Prime, 16 Apr 2015 TOP STORY in Mesenchymal Cell News 7.13 Apr 7*
58. Patel, S.; Pongkulapa, T.; Yin, P.T.; Pandian, G.; Rathnam, C.; Bando, T.; Vaijyanthi, T.; Sugiyama, H.[†]; **Lee, K.-B.**[†], “Integrating Epigenetic Modulators into NanoScript for Enhanced Chondrogenesis of Stem Cells”, *J. Am. Chem. Soc.*, **2015**, 137, 4598-4601.
57. Yin, P.T.; Shah, S.; Chhowalla, M.; **Lee, K.-B.**[†], “Design, Synthesis, and Characterization of Graphene-Nanoparticle Hybrid Materials for Bio-applications”, *Chemical Reviews*, **2015**, 115, 2483-2531. *Highlighted in (the Cover in Chemical Reviews), Most Read Articles, Highlighted in (the Cover in Chemical Reviews)*
56. Shah, S.; Liu J.; Pasquale, N.; Lai, J.; McGowan, H.; Pang, Z. P. [†]; **Lee, K.-B.**[†], “Hybrid Upconversion Nanomaterials for Optogenetic Neuronal Control”, *Nanoscale*, **2015**, 7, 16571-16577.
55. Deibert, B. J.; Zhang, J.; Smith, P.; Chapman, K. W.; Rangan, S.; Banerjee, D.; Tan, K.; Wang, H.; Pasquale, N.; Chen, F.; **Lee, K.-B.**; Dismukes, G. C.; Chabal, Y. J.; Li, J., “Surface and Structural Investigation of MnOx Birnessite-type Water Oxidation Catalyst Formed under Photocatalytic Conditions”, *Chem. Eur. J.*, **2015**, 21, 1-12.
54. Yin, P.T.; Han, E.; **Lee, K.-B.**[†], “Engineering Stem Cells for Biomedical Applications”, *Advanced Healthcare Materials*, **2015**, 5, 10-55.

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20. "Pharmaceutical composition for treating or preventing ischemic cardiovascular disease", *PCT/KR2018/013278*, **2018**. (Rutgers University-YonSei University)
21. "A novel biodegradable hybrid inorganic nanoscaffold for drug delivery and tissue engineering (ff)", *PCT/US18/61301*, **2017**. (Rutgers University)
22. "Spatial dopant separation using core-shell architecture for upconversion luminescent enhancement in the erbium-doped system", *PCT/US2019/040387*, **2018**. (Rutgers University)
23. "Nanoscript-based non-viral transient repression of PTEN for axonal regeneration in the CNS", *U.S. Patent Provisional Application No. 62/847,596*, **2019**. (Rutgers University)
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25. "A biodegradable porous membrane for generating scaffold-free biological assemblies (ff)", *U.S. Patent Provisional Application No. 62/850,217*, **2019**. (Rutgers University)
26. "Nanoparticle-based synthetic transcription factor (NanoScript) for functional hair cells regeneration (ff)", *U.S. Patent Provisional Application No. 62/840,673*, **2019**. (Rutgers University)
27. "Nondestructive characterization of stem cell neurogenesis by a magneto-plasmonic nanomaterial-based exosomal miRNA detection (ff)", *U.S. Patent Provisional Application No. 62/958,166*, **2020**. (Rutgers University)
28. "3D-porous hybrid anti-inflammatory nanoscaffold for drug delivery and tissue engineering", merged with *PCT/US18/61301*, **2020**. (Rutgers University)
29. "Dual-enhanced raman scattering-based biosensing using graphene oxide-plasmonic hybrid nanoarray (ff)", *U.S. Patent Provisional Application No. 63/037,725*, **2020**. (Rutgers University)
30. "Synthetic Matrix Assembles and Rapidly Templated (SMART) spheroids, organoids, and 3D-cell culture: biodegradable nanomaterial-templated 3D stem cell assembly for advanced", *U.S. Patent Provisional Application No. 63/066,440*, **2020**. (Rutgers University)

SELECTED INVITED PRESENTATIONS [TOTAL INVITED SEMINAR (~ # 210)]

1. (Keynote Speaker) Biosensors 2020/2021, July 2021 (Busan, Korea)
2. Invited Speaker, International Conference on "Materials for Humanity (MH 21), Singapore (MRS-S)
3. Sogang University, Engineering School, June 2021 (Seoul, Korea)
4. Invited Speaker, K-BioX, May 2021 (eTalk)
5. Invited Speaker, Association of Korean Neuroscientists, May 2021 (eTalk)
6. Clarkson University, Department of Chemistry, Mar 2021 (Potsdam, New York)
7. University of Rhode, Department of Chemistry, Feb 2021 Island (Kingston, RI)
8. Seoul National University, Medical School, Jan 2021 (Seoul, Korea)
9. (Keynote Speaker) Korean Biospine Society, Dec 2020 (Seoul, Korea)
10. (Keynote Speaker) 2020 KSBB Fall Meeting and International Symposium, Oct 2020 (Seoul, Korea)
11. IBE (The Institute for Biomedical Entrepreneurship), Nov 2019 (Boston, MA)
12. Sungkyunkwan University, School of Medicine, Nov 2019 (Suwon, Korea)
13. Sungkyunkwan University, Dep. Biophysics, Nov 2019 (Suwon, Korea)
14. KangWon National University of Medicine, Nov 2019 (CHUNCHEON, Korea)
15. The Fifth Annual BHI (Brain Health Institute) Symposium, Nov 2019 (Murray Hill, NJ)
16. (Keynote Speaker) 2019 KSBB Fall Meeting and International Symposium, Oct 2019 (DaeGu, Korea)
17. (Plenary Speaker) Korea Spinal Cord Research Society, Sep 2019 (Seoul, Korea)
18. (Plenary Speaker) Bundang CHA Medical center CGbio Regenerative Medicine Symposium, Sep 2019 (Bundang, Korea)
19. KIST Gangneung, Institute of Advanced Composite Materials, July 2019 (Gangeung, Korea)
20. Hanyang University, Department of Bioengineering, May 2019 (Seoul Korea)
21. UNC Charlotte, Dept of Chemistry, Apr 2019 (Charlotte, USA)
22. (Plenary Speaker) 45th Annual Northeast Bioengineering Conference 2019, Mar 2019 (New Brunswick, USA)
23. Kyoto Univ-Spirits International Symposium, Jan 2019 (Kyoto, Japan)
24. CHA University, CHA Bundang Medical Center, Department of Neurosurgery, Nov 2018 (Seoul, Korea)
25. Kyung Hee University, College of Pharmacy, BK program (Nanomedicine) Nov 2018 (Seoul, Korea)
26. Univ. of Ulsan College of Medicine (ASAN Medical Center), Dept of Neurological Surgery, Nov 2018 (Seoul Korea)
27. Seoul National University, College of Pharmacy, Nov 2018 (Seoul Korea)
28. Ajou University School of Medicine, Departments of Brain Science and Neurology, Nov 2018 (Seoul, Korea)
29. Cancer Pharmacology Seminar, Cancer Institute of New Jersey (CINJ), Nov 2018 (Piscataway, USA)
30. Neuroscience 2018, Society of Neuroscience Annual Meeting, Nov 2018 (San Diego, USA)
31. Rutgers University, Materials Science and Engineering Dept, Oct 2018 (Piscataway, USA)
32. (Plenary Speaker) The International Association of Neurorestoratology (IANR), Oct 2018 (Piscataway, USA)
33. UKC 2018 (US-Korea Conference), Chemistry Symposium, Aug 2018 (Queens, NY)
34. (Invited Speaker) ACS, Fall National Meeting, Aug 2018 (Boston, NY)
35. UKC 2018 (US-Korea Conference), Biomedical Research Symposium, Aug 2018 (Queens, NY)
36. Dongguk University, Dept of Biomedical Engineering, July 2018 (Seoul, Korea)

37. NanoKorea 2017, Nano Convergence Special Session: Frontiers in Nanotechnology, July 2018 (Seoul, Korea)
38. Gwangju Institute of Science and Technology (GIST), Dept. of Materials Science & Eng., July 2018 (Gwangju, Korea)
39. The 10th US-Japan Workshop on Advances in organic-inorganic Hybrid Materials, June 2018 (Newark, NJ)
40. Kyung Hee University, Department of Chemistry, May 2018 (Seoul, Korea)
41. Sogang University, Department of Mechanical Engineering, May 2018 (Seoul, Korea)
42. Kyung Hee University, College of Pharmacy, May 2018 (Seoul, Korea)
43. The Gail F. Beach Memorial Visiting Lectureship- The Miami Project to Cure Paralysis (Miami Medical School), Mar 2018 (Miami, FL)
44. (Plenary Speaker) [KSEA] Northeast Regional Conference, Mar 2018 (Montclair, NJ)
45. Emory University, Chemistry Department, Mar 2018 (Atlanta, GA)
46. Kyoto Univ-Spirits Symposium, Mar 2018 (Kyoto, Japan)
47. Access Bio Inc, Feb 2018 (NJ, USA)
48. (Keynote Speaker) The 11th International Symposium on Nanomedicine, Dec 2017 (Sendai, Japan)
49. (Keynote Speaker) The Scripps-Japan Symposium, Dec 2017 (Osaka, Japan)
50. The 10th Institute for Integrated Cell-Material Sciences (iCeMS)-Kyoto Univ. Symposium, Oct 2017 (Kyoto, Japan)
51. The 3rd Japan Stem Cell/Cell Differentiation Conference, Awaji-Shima, Aug 2017 (Awaji-Shima, Japan)
52. Yonsei Stem cell and Cardiovascular Regeneration Symposium (YSCR) Yonsei University, Medical School, May 2017 (Seoul, Korea)
53. (Keynote Speaker) 2017 KSBB Fall Meeting and International Symposium, Mar 2017 (KyungJu, Korea)
54. Drug Discovery Symposium, Kyoto University, Feb 2017 (Kyoto, Japan)
55. International Symposium for the Drug-Discovery of the Pyrrole-Imidazole Polyamides as Novel Biomedicines, Feb 2017 (Tokyo, Japan)
56. Seminars in Endocrinology and Animal Biosciences, Rutgers School of Environmental and Biological Sciences, Jan 2017 (Piscataway, USA)
57. The Second International Conference on Materials Chemistry Frontiers, Jan 2017 (Xian, China)
58. Yale University, Medical School (Department of Genetics), Dec 2016 (New Haven, USA)
59. Rutgers University, Proteomics, Institute for Quantitative Biomedicine and CABM, Nov 2016 (Piscataway, USA)
60. Duke University, Department of Chemistry, Nov 2016 (Durham, USA)
61. (Keynote Speaker) 2016 KSBB Fall Meeting and International Symposium, Oct 2016 (Gwangju, Korea)
62. Annual Meeting of Korean Society for Stem Cell Research, Aug 2016 (Seoul, Korea)
63. Sogang University, Department of Biology, Aug 2016 (Seoul, Korea)
64. CHA University Department of Biomedical Science, Aug 2016 (Bundang, Korea)
65. UKC 2016 (US-Korea Conference), Convergence Technology Symposium, Aug 2016 (Dallas, TX)
66. Nano Korea 2016, Nano Convergence Special Session: Frontiers in Nanotechnology, July 2016 (Seoul, Korea)
67. Chung-Ang University, School of Pharmacy, July 2016 (Seoul, Korea)
68. Wake Forest Institute for Regenerative Medicine Annual RME Course, July 2016 (Winston-Salem, NC)
69. Pan Pacific Symposium on Stem Cells and Cancer Research (PPSSC), May 2016 (Taichung, Taiwan)
70. Seoul National University, Department of Chemical and Biochemical Engineering, Dec 2015 (Seoul, Korea)
71. IEEE-Nanomedicine, Nov 2015 (Waikiki, Hawaii), Session Chair
72. Indiana University, Department of Chemistry, Nov 2015 (Bloomington, IN)
73. Yonsei University, Department of Biotechnology, Oct 2015 (Seoul, Korea)
74. Sungyunkwan University School of Medicine, Department of Molecular Cell Biology (Suwon, Korea)
75. Chung-Ang University, School of Integrative Engineering (Seoul, Korea)
76. Sogang University, Department of Mechanical Engineering (Seoul, Korea)

77. (Keynote Speaker)2015 KSBB Fall Meeting and International Symposium, Oct 2015 (Songdo, Korea)
78. Rutgers University, Materials Science and Engineering, Sep 2015 (Piscataway, NJ)
79. ACS Workshop, Polymers in Medicine and Biology, Sep 2015 (Santa Rosa, CA)
80. UKC 2015 (US-Korea Conference), Convergence Technology Symposium, July/Aug 2015(Atlanta, GA)
81. UKC 2015 (US-Korea Conference), GIST Symposium, July/Aug 2015(Atlanta, GA)
82. Kyoto University, Department of Chemistry, July 2015 (Kyoto, Japan)
83. Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, July 2015 (Kyoto, Japan)
84. Duke University, NICHOLAS SCHOOL OF THE ENVIRONMENT, Ramnuc Workshop, May 2016 (Durham, NC)
85. Purdue University, School of Biomedical Engineering, Apr 2015 (West Lafayette, IN)
86. NSF I-Corps Workshop, Apr 2015 (Reston, VA)
87. Army Research Lab (ARL) Open House, Dec 2014 (DC, DC)
88. The 8th Tripartite Workshop for Sustainable Technology Innovations, Nov 2014 (NewBrunswick, NJ)
89. NSF Center for Sensory Sciences and Innovation Planning Workshop, Nov 2014 (Piscataway, NJ)
90. Gwangju Institute of Science and Technolgy, School of Materials Science and Engineering, July 2014 (Gwangju, Korea)
91. Hanyang University, Department of Bionano Engineering, July 2014 (Ansan, Korea)
92. Yonsei University, Department of Chemistry, July 2014 (Seoul, Korea)
93. The Chinese University of Hong, Biomedical Engineering Department, July 2014 (HongKong, HongKong)
94. The 15th International Conference on Organized Molecular Films (ICOMF15-LB15), July 2014 (Jeju, Korea)
95. Korean American Society in Biotech and Pharmaceuticals (KASBP) Spring Symposium, June 2014 (Edison, NJ)
96. Cancer Institute of New Jersey Center for Cancer Prevention Research, Ernest Mario School of Pharmacy at Rutgers, May 2014 (Piscataway, NJ)
97. American Society for Nanomedicine meeting, Universities at Shady Grove campus, Mar 2014 (Rockville, MD)
98. School of Medicine, Sungkyungwan University, Samsung Medical Center, Mar 2014 (Seoul, Korea)
99. Ulsan National Institute of Science and Technology (UNIST), School of Nano-Bioscience, Mar 2014 (Ulsan, Korea)
100. Korea Research Institute of Bioscience & Biotechnology, Stem Cell Center, Mar 2014 (Daejeon, Korea)
101. Gifu University, Department of Applied Bioorganic Chemistry, Feb 2014 (Gifu, Japan)
102. Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Feb 2014 (Kyoto, Japan)
103. Kyoto University, Department of Chemistry, Feb 2014 (Kyoto, Japan)
104. Seoul National University, Department of Chemistry, Feb 2014 (Seoul, Korea)
105. International Symposium of Molecular Medicine and Biopharmaceutical Science on "Biomedical Applications of Graphene", Winter International Symposium of Korean Society for Nanomedicine, Feb 2014 (Seoul, Korea)
106. Rutgers University at Newark, Department of Chemistry, Oct 2013 (Newark, NY)
107. University of Texas at Dallas, Department of Chemistry, Sep 2013 (Dallas, TX)
108. University of Missouri at Columbia, Department of Chemistry, Aug 2013 (Columbia, MO)
109. Ataturk University, Department of Chemistry and Biochemistry, Aug 2013 (Erzurum, Turkey)
110. Yeditepe University, Department of Genetics and Bioengineering, Aug 2013 (Istanbul, Turkey)
111. Biology Technical Symposium "Neuroscience, Stem Cells, Immunology and Developmental Biology" at the 2013 US-Korea Conferences, Aug 2013 (East Rutherford, NJ)
112. Chemistry Symposium "Frontiers of Interdisciplinary Sciences" at the 2013 US-Korea Conferences, Aug 2013 (East Rutherford, NJ)
113. BioTronics, International Conference on Biosensors, Biochips and Bioelectronic Devices, July 2013 (Seoul, Korea)
114. The New York Academy of Sciences Conference (Nanotechnologies in Cancer Diagnosis, Therapy, and Prevention) at Memorial Sloan-Kettering Cancer Center 2013, (New York, NY)
115. International Biotechnology Symposium (IBS) 2012, Oct 2012 (Daegu, Korea)

116. Gwangju Institute of Science and Technolgy, BK21 program, Aug 2012 (Gwangju, Korea)
117. Sogang University, Center for Bioelectronic Device, Aug 2012 (Seoul, Korea)
118. Hanyang University, BK21 program, Aug 2012 (Ansan, Korea)
119. Annual Spring Meeting of The Korean BioChip Society, May 2012 (Hanyang University, Korea)
120. Jilin University, Department of Chemistry, State Key Lab of Supramolecular Structure and Materials, May 2012 (Changchun, China)
121. University of Pennsylvania, Department of Chemistry, May 2012 (Philadelphia, PA)
122. University of Illinois at Urbana-Champaign, Biotechnology Seminar Series of CCM/IGERT/M-CNT, Apr 2012 (Urbana-Champaign, IL)
123. University of California at Los Angeles (UCLA), NanoSystems Institute, Apr 2012 (Los Angeles, CA)
124. University of California at San Diego (UCSD), Department of Chemistry, Apr 2012 (San Diego, CA)
125. Rutgers Cancer Diagnostics and Therapeutic Symposium, Mar 2012 (Piscataway, NJ)
126. University of Central Florida, College of Medicine, Mar 2012 (Orlando, FL)
127. Florida State University, Department of Biological Science and Integrative NanoScience Institute, Mar 2012 (Tallahassee, FL)
128. University of Washington, Center of NanoTechnology, Feb 2012 (Seattle, WA)
129. University of Florida, Department of Chemistry, Feb 2012 (Gainesville, FL)
130. University of Maryland, Department of Chemistry and Biochemistry, Feb 2012 (College Park, MD)
131. SU International Symposium 2011, Shizuoka University, Nov 2011 (Shizuoka, Japan)
132. ACS, Fall Meeting (Three Invited Talks), Aug 2011 (Denver, CO)
133. MIRKUNITE (Invited talk at "a 20-year celebration of the Mirkin Research Group), Aug 2011 (Northwestern Univ., IL)
134. Gordon Research Conferences (Cancer Nanotechnology), July 2011 (Colby College, Waterville, ME)
135. Kyoto University, Institute for Integrated Cell-Material Sciences (iCeMS), July 2011 (Kyoto, Japan)
136. Kang Dong KyungHee Medical Center, June 2011 (Seoul, Korea)
137. National University of Singapore, Department of Chemistry, June 2011 (Singapore)
138. Nanyang Technological University, School of Chemical and Biomedical Engineering, June 2011 (Singapore)
139. ICMAT (International Conference on Materials for Advanced Technologies) (Two Invited Talks), June 2011 (Suntec, Singapore)
140. Scripps Korea Antibody Institute, June 2011 (Seoul, Korea)
141. Cha University, Medical School and Stem Cell Center, June 2011 (Seoul, Korea)
142. SoGang University, Department of Chemical and Biological Engineering, June 2011 (Seoul, Korea)
143. KunKuk University, Medical School and Stem Cell Center, June 2011 (Seoul, Korea)
144. Kyung Hee University, Medical School, June 2011 (Seoul, Korea)
145. ISSCR (International Society for Stem Cell Research) 9th Annual Meeting, June 2011 (Toronto, Canada)
146. Institute Pasteur Korea, 3rd International Collaborative Symposium on Stem Cell Research, Apr 2011 (Seoul, Korea)
147. Johns Hopkins University, BLSA (Baltimore Life Scientists Association), Stem Cell: Past, Present, and Future, Nov 2010 (Baltimore, MD)
148. Boston University, Department of Chemistry, Oct 2010 (Boston, MA)
149. MRS Workshop, Functionalized Nanobiomaterials for Medical Applications, Oct 2010 (Denver, CO)
150. The Sixth Annual NIH Director's Pioneer Award Symposium, Sep, 2010 (Washington, DC)
151. RAMNUC Meeting, Sep, 2010 (Imperial College, London, UK)
152. Kyoto University, Institute for Integrated Cell-Material Sciences (iCeMS), Aug 2010 (Kyoto, Japan)
153. IEEE NANO 2010, Nano-Bio Fusion, Nano-Biology and Nanomedicine, Aug 2010 (Seoul, Korea)

154. Gordon Research Conferences (Signal Transduction by Engineered Extracellular Matrices), Jul 2010 (University of New England, Biddeford, ME)
155. Columbia University, NYKB (New York Korean Biologists) Symposium, Mar 2010 (New York, NY)
156. University of Connecticut, Department of Chemistry, Mar 2010 (Storrs, CT)
157. Rutgers Energy Institute/Princeton University, Solar Energy Seminar, Apr 2010 (Princeton, NJ)
158. Gwangju Institute of Science and Technology (GIST), Department of Materials Science and Engineering, Jan 2010 (Gwangju, Korea)
159. Korea Advanced Inst. of Science and Technology (KAIST), Medical Science and Engineering, Jan 2010 (Taejeon, Korea)
160. Fudan University, Department of Chemistry, Jan 2010 (Shanghai, China)
161. Zhejiang University, Department of Chemistry, Jan 2010 (Hangzhou, China)
162. USTC, Department of Chemistry, Jan 2010 (Hefei, China)
163. Nanjing University, School of Chemistry & Chemical Engineering, Jan 2010 (Nanjing, China)
164. Nankai University, College of Chemistry, Jan 2010 (Tianjin, China)
165. Peking University, College of Chemistry and Molecular Engineering, Jan 2010 (Peking, China)
166. MRS 2009 Fall Meeting, Dec 2010 (Boston, MA)
167. The Laboratory Robotics Interest Group Mid-Atlantic Chapter (LRIG), Nov 2009 (New Brunswick, NJ)
168. NIH Workshop for Junior Faculty in Organic Chemistry and Chemical Biology, Oct 2009 (Irvine, CA)
169. Ajou University, Department of Molecular Science and Technology, Oct 2009 (Suwon, Korea)
170. BIOCHIP 2009, "Recent Trends in Nanomedicine", Oct 2009 (Seoul, Korea)
171. BioTronics, International Conference on Biosensors, Biochips and Bioelectronic Devices, Oct 2009 (Seoul, Korea)
172. The Fifth Annual NIH Director's Pioneer Award Symposium, Sep, 2009 (Washington, DC)
173. ACS, IACIS International Conference and ACS Colloid & Surface Science Symposium (Three Talks), Jun 2009 (New York, NY)
174. Universidade de São Paulo (Brazil), Departamento de Bioquímica Instituto de Química, May 2009
175. Naval Research Laboratory, Surface Nanoscience and Sensor Technology, Apr 2009
176. Rutgers University, IAMDN(Inst. of Adv. Mat. Dev. and Nanotech.)/LSM, Apr 2009
177. Seoul National University, NANO System Institute, May 2009 (Seoul, Korea)
178. Gwangju Institute of Science and Technology, Department of Life Science, Mar 2009
179. Sogang University, Department of biochemical engineering, Mar 2009 (Seoul, Korea)
180. Korea Research Institute of Bioscience and Biotechnology, Bio-Monitoring Res. Center, Mar 2009
181. KAIST, Department of Bio and Brain Engineering, Mar 2009
182. Korea Research Institute of Chemical Technology, Bio-Organic Science Division, Mar 2009
183. POSTECH, Department of Chemistry, Mar 2009
184. Kyung Hee University, College of Science, Mar 2009 (Seoul, Korea)
185. Brookhaven National Lab, The Center for Functional Nanomaterials, Jan 2009
186. Rutgers University, BioMaPS Institute for Quantitative Biology, May 2008
187. The Cancer Institute of New Jersey, New Jersey stem cell conference, Apr 2008
188. Rutgers University, LSM (Laboratory for Surface Modification), Feb 2008
189. Kyung Hee University, Department of Chemistry, Sep 2007 (Seoul, Korea)
190. University of California at Los Angeles, Department of Molecular & Medical Pharmacology, Aug 2007
191. University of Illinois at Urbana-Champaign, Department of Bioengineering, Apr 2007
192. University of California at San Francisco, Departments of Pharmaceutical Chemistry, Mar 2007
193. Duke University, Biomedical Engineering, Mar 2007

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194. Purdue University, Department of Chemistry, Feb 2007
 195. Rutgers, The State University of New Jersey, Chemistry & Chemical Biology, Feb 2007
 196. University of Wisconsin at Madison, School of Pharmacy, Feb 2007
 197. University of North Carolina at Chapel Hill, School of Pharmacy, Feb 2007
 198. University of Texas at Austin, Nano Science and Technology & Dept. of Chemistry, Feb 2007
 199. University of California at Riverside, Department of Bioengineering, Feb 2007
 200. University of California at Berkeley, Nanoscience & Nanoengineering Institute, Feb 2007
 201. University of Michigan at Ann Arbor, Department of Chemistry & LSI, Feb 2007
 202. University of Southern California, Department of Chemistry, Jan 2007
 203. KAIST, Department of Biological Sciences, Dec 2006
 204. POSTECH, Interdisciplinary Bioscience and Bioengineering, Dec 2006
 205. University of Massachusetts at Amherst, Department of Chemistry, Dec 2006
 206. University of Texas Southwestern Medical Center, Simmons Comprehensive Cancer Center, Nov 2006
 207. University of California at San Diego, Department of Bioengineering, Oct 2006
 208. BWF Career Awards at the Scientific Interface (finalist, award competition talk), Oct 2006
 209. **Lee, K. -B.**; Park, S. H.; Mirkin, C. A., "Nanostructures for Detection and Separation of Biomolecules" Joint Regional Meeting of the Northwest and Rocky Mountain sections of ACS, Logan, Utah, United States, June 6-9, 2004.
 210. **Lee, K. -B.**; Mirkin, C. A.; Smith, J. C.; Mrksich, M., "Biomolecular Arrays Formed by Dip-Pen Nanolithography (DPN) " Presentation, MRS meeting, Spring 2003, San Francisco, CA, April 22-25, 2003. (Award Talk)
 211. **Lee, K. -B.**; Park, S. -J.; Mirkin, C. A., "Protein nanoarrays generated by Dip-Pen Nanolithography" Presentation, 223rd ACS National Meeting, Orlando, FL, United States, April 7-11, 2002.