# CURRICULUM VITAE

**SungWoo Nam**
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SungWoo Nam is an Associate Professor and Anderson Faculty Scholar in the Department of Mechanical Science and Engineering, and an Associate in the Center for Advanced Study at University of Illinois at Urbana-Champaign. His research interest is at the intersection between advanced materials and mechanics.

**(a) Education and Training**

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|---|---|---|---|
| 1998/3-2002/2 | Seoul National University | Materials Science & Engineering | B.S. 2002 |
| 2002/9-2005/8 | Yonsei University | Materials Engineering | M.Eng. 2005 |
| 2005/9-2007/5 | Harvard University | Physics | M.A. 2007 |
| 2005/9-2011/3 | Harvard University | Applied Physics | Ph.D. 2011 |
| 2011/3-2012/7 | Univ. of California, Berkeley | Bioengineering | Postdoc |

**(b) Research and Professional Experience**

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|---|---|
| 2020/8-Present | Associate, Center for Advanced Study, UIUC |
| 2020/8-2020/12 | Visiting Associate Professor, Physics and Astronomy (w/ W. Ho), University of California, Irvine |
| 2020/4-Present | Anderson Faculty Scholar, The Grainger College of Engineering, UIUC |
| 2018/8-Present | Associate Professor, Mechanical Science and Engineering, UIUC |
| 2019/9-Present | Associate Professor, The Carle Illinois College of Medicine, UIUC |
| 2018/8-2019/1 | Visiting Associate, Applied Physics & Materials Science (w/ H. Atwater), California Institute of Technology |
| 2013/8-Present | Associate Professor, Materials Science and Engineering, UIUC |
| 2012/8-2018/7 | Assistant Professor, Mechanical Science and Engineering, UIUC |
| 2002/1-2005/4 | Research Associate, ILJIN Nanotech Co. Ltd. (currently Hanwha Chemical Co. Ltd., Seoul, Korea) |

**(c) Honors and Awards**

**Teaching Honors and Awards**

1. **Rose Award for Teaching Excellence**, College of Engineering, UIUC (2018)
2. **List of Teachers Ranked as Excellent/Outstanding** by Their Students, UIUC (2013, 2014, 2015, 2016, 2017, 2018, 2019 & 2020)
3. **Engineering Council Award for Excellence in Advising**, UIUC (2013, 2015 & 2017)
4. **Provost's Initiative on Teaching Advancement (PITA) Award**, UIUC (2013)
5. **Certificate of Distinction in Teaching**, Harvard University (2009)

**Research Honors and Awards**

1. **Center for Advanced Study (CAS) Associate**, UIUC (2020-2021)

2. **Anderson Faculty Scholar**, UIUC (2020-)
3. **Campus Distinguished Promotion Award**, UIUC (2018)
4. **Early Career Faculty Fellow,** The Minerals, Metals & Materials Society (TMS) (2018)
5. **Dean's Award for Excellence in Research**, College of Engineering, UIUC (2017)
6. **Young Investigator Program (YIP) Award**, Office of Naval Research (ONR) (2017)
7. **Early Career Faculty (ECF) Award**, National Aeronautics and Space Administration (NASA) (2016)
8. **Hanwha Advanced Materials Non-Tenured Faculty Award** (2017)
9. **Young Investigator Research Program (YIP) Award**, Air Force Office of Scientific Research (AFOSR) (2016)
10. **Faculty Early Career Development Program (CAREER) Award**, National Science Foundation (NSF) (2016)
11. **Invited Participant and Frontiers Fellowship**, 2016 Arab-American (AA) Frontiers of Science, Engineering, and Medicine Symposium, U.S. National Academy of Sciences (2016)
12. **New Innovators Lectureship,** IEEE EMBS Micro and Nanotechnology in Medicine Conference (2014)
13. **Young Investigator Award**, Korean-American Scientists and Engineers Association (KSEA) (2014)
14. **Doctoral New Investigator Award**, American Chemical Society (ACS) (2013)
15. **Gold Award**, Materials Research Society (2011)
16. **GSAS Merit Fellowship**, Harvard University (2009)
17. **The Samsung Scholarship**, Samsung Foundation of Culture (2005)
18. **Humantec Award**, Samsung Electronics Co., Ltd. (2002)
19. **Valedictorian Prize (*Graduated 1st in Engineering*)**, Seoul National University (2002)

**(d) Publications**

1. M. F. Haque, P. Snapp, J. M. Kim, M. C. Wang, H. J. Bae, C. Cho, and **S. Nam**, "Strongly Enhanced Electromechanical Coupling in Atomically Thin Transition Metal Dichalcogenides," ***Materials Today*** DOI: 10.1016/j.mattod.2020.12.021 (2021).
2. J.-P. So, K.-Y. Jeong, J. M. Lee, K.-H. Kim, S.-J. Lee, W. Huh, H.-R. Kim, J.-H. Choi, J. M. Kim, Y. S. Kim, C.-H. Lee, **S. Nam**, and H.-G. Park, "Polarization Control of Deterministic Single-Photon Emitters in Monolayer $WSe_2$," ***Nano Letters*** **21**, 1546 (2021).
3. C. Cho, P. Kang, A. Taqieddin, Y. Jing, K. Yong, J. M. Kim, M. F. Haque, N. R. Aluru, and **S. Nam**, "Strain-resilient Electrical Functionality in Thin-film Metal Electrodes using Two-dimensional Interlayers," ***Nature Electronics*** **4**, 126 (2021).
4. N. N. Nguyen, H. C. Lee, K. Baek, M. S. Yoo, H. Lee, H. Lim, S. Choi, C.-J. Kim, **S. Nam**, and K. Cho, "Atomically Smooth Graphene-Based Hybrid Template for the Epitaxial Growth of Organic Semiconductor Crystals," ***Advanced Functional Materials*** 202008813 (2021).
5. C. Choi, J. Leem, M. S. Kim, A. Taqieddin, C. Cho, K. W. Cho, G. J. Lee, H. Seung, H. J. Bae, Y. M. Song, T. Hyeon, N. R. Aluru, **S. Nam**, and D.-H. Kim, "Curved Neuromorphic Image Sensor Array using a MoS2-organic Heterostructure Inspired by the Human Visual Recognition System," ***Nature Communications*** 11, 5934 (2020).
6. P. Snapp, C. Cho, D. Lee, M. F. Haque, **S. Nam**, and C. Park, "Tunable Piezoelectricity of Multifunctional Boron Nitride Nanotube/Polydimethylsiloxane Stretchable Composites," ***Advanced Materials*** 32, 2004607 (2020).

7. P. Snapp, M. Heiranian, M. T. Hwang, R. Bashir, N. R. Aluru, and **S. Nam**, “Current Understanding and Emerging Applications of 3D Crumpling Mediated 2D Material-Liquid Interactions,” ***Current Opinion in Solid State & Materials Science*** **24**, 100836 (2020).
8. H. C. Lee, E. Y. Hsieh, K. Yong, and **S. Nam**, “Multiaxially-Stretchable Kirigami-Patterned Mesh Design for Graphene Sensor Devices,” ***Nano Research*** **13**, 1406 (2020).
9. J. Son, J.-Y. Lee, N. Han, J. Cha, J. Choi, J. Kwon, **S. Nam**, K.-H. Yoo, G.-H. Lee, and J. Hong, “Tunable Wettability of Graphene through Non-destructive Hydrogenation and Wettability-based Patterning for Bio-applications,” ***Nano Letters*** **20**, 5625 (2020).
10. J. M. Kim, C. Cho, E. Y. Hsieh, and **S. Nam**, “Heterogeneous Deformation of Two-dimensional Materials for Emerging Functionalities,” ***Journal of Materials Research*** **35**, 1369 (2020).
11. K. Yong, S. De, E. Y. Hsieh, J. Leem, N. R. Aluru, and **S. Nam**, “Kirigami-Inspired Strain-Insensitive Sensors based on Atomically-Thin Materials,” ***Materials Today*** **34**, 58 (2020).
12. M. Hwang, M. Heiranian, Y. Kim, S. You, J. Leem, A. Taqieddin, V. Faramarzi, Y. Jing, I. Park, A. van der Zande, **S. Nam**, N. Aluru, and R. Bashir, “Ultrasensitive Detection of Nucleic Acids using Deformed Graphene Channel Field Effect Biosensors,” ***Nature Communications*** **11**, 1543 (2020).
13. Y. Kim, G. Pagan-Diaz, L. Gapinske, Y. Kim, J. Suh, E. Solomon, J. F. Harris, **S. Nam**, and R. Bashir, “Integration of Graphene Electrodes with 3D Skeletal Muscle Tissue Models,” ***Advanced Healthcare Materials*** **9**, 1901137 (2020).
14. P. Snapp, J. M. Kim, C. Cho, J. Leem, M. F. Haque, and **S. Nam**, “Interaction of 2D Materials with Liquids: Wettability, Electrochemical Properties, Friction, and Emerging Directions,” ***NPG Asia Materials*** **12**, 22 (2020).
15. G. Wang, S.-K. Kim, M. C. Wang, T. Zhai, S. Munukutla, G. S. Girolami, P. J. Sempsrott, **S. Nam**, P. V. Braun, J. W. Lyding, “Enhanced Electrical and Mechanical Properties of Chemically Cross-Linked Carbon Nanotube-Based Fibers and Their Application in High-Performance Supercapacitors,” ***ACS Nano*** **14**, 632 (2020).
16. S. K. Alen, **S. Nam**, and S. A. Dastgheib, “Recent Advances in Graphene Oxide Membranes for Gas Separation Applications,” ***International Journal of Molecular Sciences*** **20**, 5609 (2019).
17. J. Kim, J. Leem, H. N. Kim, P. Kang, J. Choi, M. F. Haque, D. Kang, and **S. Nam**, “Uniaxially Crumpled Graphene as a Platform for Guided Myotube Formation,” ***Microsystems & Nanoengineering (Nature)*** **5**, 53 (2019).
18. A. Krishna, J. M. Kim, J. Leem, M. C. Wang, **S. Nam**, and J. Lee, “Ultraviolet to Mid-Infrared Emissivity Control by Mechanically Reconfigurable Graphene,” ***Nano Letters*** **19**, 5086 (2019).
19. J. Leem, Y. Lee, M. C. Wang, J. M. Kim, J. Mun, M. F. Haque, S.-W. Kang, and **S. Nam**, “Crack-assisted, Localized Deformation of van der Waals Materials for Enhanced Strain Confinement,” ***2D Materials*** **6**, 044001 (2019).
20. S. S. Kwon, J. Choi, M. Heiranian, Y. Kim, W. J. Chang, P. Knapp, M. C. Wang, J. M. Kim, N. R. Aluru, W. I. Park, and **S. Nam**, “Electrical Double Layer of Supported Atomically-thin Materials,” ***Nano Letters*** **19**, 4588 (2019).
21. P. Snapp, P. Kang, J. Leem, and **S. Nam**, “Colloidal Photonic Crystal Strain Sensor Integrated with Deformable Graphene Phototransducer,” ***Advanced Functional Materials*** **33**, 1902216 (2019). ****Selected as the Frontispiece.***
22. R. H. Kim, J. Leem, C. Muratore, **S. Nam**, R. Rao, A. Jawaid, M. Durstock, M. McConney, L. Drummy, R. Rai, A. Voevodin, and N. Glavin, “Photonic Crystallization of Two-dimensional

$MoS_2$ for Stretchable Photodetectors," ***Nanoscale* 11**, 13260 (2019). ***Selected as the Inside Front Cover.***

23. J. Mun, H. Park, J. Park, D. H. Joung, S.-K. Lee, J. Leem, J.-M. Myoung, J. Park, S.-H. Jeong, W. Chegal, **S. Nam**, and S.-W. Kang, "High-Mobility $MoS_2$ Directly Grown on Polymer Substrate with Kinetics-Controlled Metal–Organic Chemical Vapor Deposition," ***ACS Applied Electronic Materials* 1**, 608 (2019). ***Selected as the Front Cover.***
24. Y. Diao, G. Greenwood, M. C. Wang, **S. Nam**, and R. M. Espinosa-Marzal, "Slippery and Sticky Graphene in Water," ***ACS Nano* 13**, 2072 (2019).
25. P. Kang, K.-H. Kim, H.-G. Park, and **S. Nam**, "Mechanically Reconfigurable Architectured Graphene for Tunable Plasmonic Resonances," ***Light: Science & Applications (Nature)* 7**, 17 (2018).
26. S. S. Kwon, J. H. Shin, J. Choi, **S. Nam**, and W. Park, "Nanotube-on-graphene Heterostructures for Three-dimensional Nano/bio-interface," ***Sensors & Actuator B: Chemical* 254**, 17 (2018).
27. M.C. Wang, W. Moestopo, S. Takekuma, S. Barna, R. Haasch, and **S. Nam**, "A Sustainable Approach to Large Area Transfer of Graphene and Recycling of the Copper Substrate," ***Journal of Materials Chemistry C* 5**, 11226 (2017). ***Selected as the Back Cover.***
28. M. R. Rosenberger, M. W. Wang, X. Xie, J. A. Rogers, **S. Nam**, and W. P. King, "Measuring Individual Carbon Nanotubes and Single Graphene Sheets using Atomic Force Microscope Infrared Spectroscopy," ***Nanotechnology* 28**, 355707 (2017).
29. Y. J. Yun, J. Ju, J. H. Lee, Y. H. Kim, W. G. Hong, D. H. Ha, H. Jang, G. H. Lee, S.-H. Moon, S.-J. Park, H.-M. Chung, J. Choi, **S. Nam**, Y. Jun, and S.-H. Lee, "Highly Elastic Graphene-based Electronics Toward Electronic Skin," ***Advanced Functional Materials* 1701513** (2017).
30. S. S. Kwon, J. H. Shin, J. Choi, **S. Nam**, and W. Park, "Defect Mediated Molecular Interaction and Charge Transfer in Graphene Mesh Glucose Sensors," ***ACS Applied Materials & Interfaces* 9**, 14216 (2017).
31. M. C. Wang, J. Leem, P. Kang, J. Choi, P. Knapp, K. Yong, and **S. Nam**, "Mechanical Instability Driven Self-assembly and Architecturing of 2D Materials," ***2D Materials* 4**, 022002 (2017).
32. J. Choi, J. Mun, M. C. Wang, A. Ashraf, S.-W. Kang, and **S. Nam**, "Hierarchical, Dual Scale Structures of Atomically Thin $MoS_2$ for Tunable Wetting," ***Nano Letters* 17**, 1756 (2017).
33. M. Kim, P. Kang, J. Leem, and **S. Nam**, "Stretchable Crumpled Graphene Photodetector with Plasmonically-enhanced Photoresponsivity," ***Nanoscale* 9**, 4058 (2017). ***Selected as the Front Cover.***
34. P. Kang, M. C. Wang, P. Knapp, and **S. Nam**, "Crumpled Graphene Photodetector with Enhanced, Strain-tunable and Wavelength-selective Photoresponsivity," ***Advanced Materials* 28**, 4639 (2016). ***Selected as the Front Cover.***
35. A. Ashraf, Y. Wu, M. C. Wang, K. Yong, T. Sun, Y. Jing, R. Haasch, N. Aluru, and **S. Nam**, "Doping-Induced Tunable Wettability and Adhesion of Graphene," ***Nano Letters* 16**, 4708 (2016).
36. K. Yong, A. Ashraf, P. Kang, and **S. Nam**, "Rapid Stencil Mask Fabrication Enabled One-Step Polymer-Free Graphene Patterning and Direct Transfer for Flexible Graphene Devices," ***Scientific Reports (Nature)* 6**, 24890 (2016).

37. A. Ashraf, H. Salih, **S. Nam**, and S. Dastgheib, "Robust Carbon Nanotube Membranes Directly Grown on Hastelloy Substrates and Their Potential Application for Membrane Distillation," ***Carbon*** **106**, 243 (2016).
38. P. Kang, M.C. Wang, and **S. Nam**, "Bioelectronics with two-dimensional materials," ***Microelectronic Engineering*** **161**, 18 (2016). ***Invited Review Article**.*
39. S. S. Kwon, J. Yi, W. W. Lee, J. H. Shin, S. H. Kim, S. H. Cho, **S. Nam**, and W. Park, "Reversible and Irreversible Responses of Defect-engineered Graphene-based Electrolyte-gated pH Sensors," ***ACS Applied Materials & Interfaces*** **8**, 834 (2016).
40. J. Yi, S. Kim, W. Lee, S. Kwon, **S. Nam**, and W. Park, "Graphene Meshes Decorated with Palladium Nanoparticles for Hydrogen Detection," ***Journal of Physics D: Applied Physics*** **48**, 475103 (2015).
41. J. Leem, M. C. Wang, P. Kang, and **S. Nam**, "Mechanically Self-assembled, Three-dimensional Graphene-Gold Hybrid Nanostructures for Advanced Nanoplasmonic Sensors," ***Nano Letters*** **15**, 7684 (2015).
42. J. Choi, H. Kim, M. C. Wang, J. Leem, W. King, and **S. Nam**, "Three-Dimensional Integration of Graphene via Swelling, Shrinking, and Adaptation," ***Nano Letters*** **15**, 4525 (2015).
43. M. C. Wang, S. Chun, R. Han, A. Ashraf, P. Kang, and **S. Nam**, "Heterogeneous, Three-dimensional Texturing of Graphene," ***Nano Letters*** **15**, 1829 (2015).
44. H. Kim, J. Choi, **S. Nam**, and W. King, "Batch Fabrication of Transfer-Free Graphene-Coated Microcantilevers," ***IEEE Sensors Journal*** **15**, 2717 (2015).
45. A. Ashraf, Y. Wu, M. C. Wang, N. Aluru, S. Dastgheib, and **S. Nam**, "Spectroscopic Investigation of the Wettability of Multilayer Graphene using Highly Ordered Pyrolytic Graphite as a Model Material," ***Langmuir*** **30**, 12827 (2014).
46. J. Bang, J. Choi, F. Xia, S. S. Kwon, A. Ashraf, W. I. Park, and **S. Nam**, "Assembly and Densification of Nanowire Arrays via Shrinkage," ***Nano Letters*** **14**, 3304 (2014).
47. **S. Nam**, I. Choi, C. Fu, K. Kim, S. G. Hong, Y. Choi, A. Zettl, and L. P. Lee, "Graphene Nanopore with a Self-Integrated Optical Antenna," ***Nano Letters*** **14**, 5584 (2014).
48. S. Chun, J. Choi, A. Ashraf, and **S. Nam**, "Three-dimensional, Flexible Graphene Bioelectronics," ***Proc. of IEEE Engineering in Medicine and Biology Society (EMBS) Conference*** **2014**, 5268 (2014).
49. M.-S. Lee, K. Lee, S.-Y. Kim, H. Lee, J. Park, K.-H. Choi, H.-K. Kim, D.-G. Kim, D.-Y. Lee, **S. Nam**, and J.-U. Park, "High-performance, Transparent and Stretchable Electrodes using Graphene-Metal Nanowire Hybrid Structures," ***Nano Letters*** **13**, 2814 (2013).
50. J. Choi, M. C. Wang, R. Y. S. Cha, W. I. Park, and **S. Nam**, "Graphene Bioelectronics," ***Biomedical Engineering Letters*** **3**, 201 (2013).
51. S. Chun, J. Choi, and **S. Nam**, "All-Carbon Graphene Bioelectronics," ***Proc. of IEEE Engineering in Medicine and Biology Society (EMBS)*** **2013**, 5654 (2013).
52. J. U. Park*, **S. Nam***†, M.-S. Lee, and C. M. Lieber, "Synthesis of Monolithic Graphene-Graphite Integrated Electronics," ***Nature Materials*** **11**, 120 (2012).
    *Authors with equal contributions. †***Corresponding author.***
53. **S. Nam**, M.-S. Lee, and J.-U. Park, "Monolithic Graphene Transistor Biointerface," ***Proc. of IEEE Engineering in Medicine and Biology Society (EMBS)*** **2012**, 5678 (2012).
54. H. Yan*, H. Choe*, **S. Nam***, Y. Hu, S. Das, J. F. Klemic, J. C. Ellenbogen, and C. M. Lieber, "Programmable Nanowire Circuits for Nanoprocessors," ***Nature*** **470**, 240 (2011).

*Authors with equal contributions.

55. **S. Nam**, X. Jiang, Q. Xiong, D. Ham, and C. M. Lieber, "Vertically Integrated, Three-Dimensional Nanowire Complementary Metal-Oxide-Semiconductor Circuits," ***Proc. Natl. Acad. Sci. (PNAS) USA*** **106**, 21035 (2009).
56. X. Jiang, Q. Xiong, **S. Nam**, F. Qian, Y. Li, and C. M. Lieber, "InAs/InP Radial Nanowire Heterostructures as High Electron Mobility Devices," ***Nano Letters*** **7**, 3214 (2007).
57. A. Javey*, **S. Nam***, R. S. Friedman, H. Yan, and C. M. Lieber, "Layer-by-Layer Assembly of Nanowires for Three-Dimensional, Multi-functional Electronics," ***Nano Letters*** **7**, 773 (2007). *Authors with equal contributions.

**(e) Patents**

1. K. Yong, S. De, N. R. Aluru and **S. Nam**, "Kirigami-Inspired Strain-Insensitive Sensors," U.S. Non-Provisional Patent Application 17/010,202, September 2, 2020.
2. P. Kang, C. Cho and **S. Nam**, "Mechanically Robust Flexible Hybrid Electrode," U.S. Non-Provisional Patent Application 16/357,722, March 19, 2019.
3. C. M. Wang and **S. Nam**, "Three-dimensional (3D) Texturing of Two Dimensional Materials," U.S. Patent US 9,908,285 B2, issued March 6, 2018.
4. S. Dastgheib, A. Ashraf, **S. Nam** and H. H. Salih "Robust Carbon Nanotube Membranes and Methods of Making the Same," U.S. Non-Provisional Patent Application 15/344,697, November 7, 2016.
5. C. M. Lieber, J.-U. Park and **S. Nam**, "Controlled Synthesis of Monolithically-Integrated Graphene Structures," U.S. Patent 9,029,836, issued May 12, 2015.
6. Y. Park, J. Hahn, and **S. Nam**, "Method for Synthesizing Carbon Nanotube Powder with Improved Dispersibility," South Korea Patent 10-0733569-0000, issued June 22, 2007.

**(f) Invited Presentations**

1. "Integrated Nanowire Electronics and Multiplexed Biosensor Arrays Based on Contact Printing of Nanowires," POSTECH, South Korea, June 2010.
2. "Building Up Nanomaterials for Flexible Nanoelectronics and Nanobiotechnology," Arizona State University, Tempe, AZ, January 2012.
3. "Building Up Nanomaterials: Applications to Nanoelectronics and Nanobiotechnology," University of Illinois at Urbana-Champaign, Urbana, IL, January 2012.
4. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," Georgia Institute of Technology, Atlanta, GA, February 2012.
5. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," University of Michigan at Ann Arbor, Ann Arbor, MI, February 2012.
6. "Building Up Nanomaterials for Flexible Nanodevices and Bioelectronics," Rice University, Houston, TX, February 2012.
7. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," Michigan State University, East Lansing, MI, March 2012.
8. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," North Carolina State University, Raleigh, NC, April 2012.
9. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," Yonsei University, South Korea, June 2012.

10. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," KAIST, South Korea, June 2012.
11. "Building Up Nanomaterials for Flexible Nanodevices and Nanobiotechnology," Hanyang University, South Korea, June 2012.
12. "Monolithic Graphene Transistor Biointerface," IEEE Engineering in Medicine & Biology Conference (EMBC), San Diego, August 2012.
13. "All-Carbon Graphene Electronics," Nano-EP Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, January 2013.
14. "Functional Graphene Bio-Interface: From Nanoelectronic Bioprobes to Nanophotonic Nanopore Sensors," Bioengineering Department Seminar, University of Illinois at Urbana-Champaign, Urbana, IL, January 2013.
15. "Functional Graphene Bio-Interface," Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea, June 2013.
16. "Programmable Nanowire Nanoelectronics," The 14th International Conference on the Formation of Semiconductor Interfaces, Gyeongju, South Korea, June 2013.
17. "All-Carbon Graphene Bioelectronics," IEEE Engineering in Medicine & Biology Conference (EMBC), Osaka, Japan, July 2013.
18. "Nanoplasmonic Fabrication of Optofluidic Graphene Nanopores," NanoKorea Symposium, Seoul, South Korea, July 2013.
19. "Functional Graphene Bio-Interface," Seoul National University, Seoul, South Korea, July 2013.
20. "Nanoelectronics Meets Biology: From Biomolecular Detection, Nano-electrophysiology to Hybrid Device-Tissue Interfaces," 2013 GEM4 BioNanotechnology Summer Institute, University of Illinois at Urbana-Champaign, Urbana, IL, August 2013.
21. "All-Carbon Graphene Bioelectronics," Interdisciplinary Symposium on Advanced Nano/Biosystems, University of Illinois at Urbana-Champaign, Urbana, IL, September 2013.
22. "All-Carbon Graphene Electronics," Center for Nanoscale Science and Technology (CNST) Annual Nanotechnology Workshop, University of Illinois at Urbana-Champaign, Urbana, IL, April 2014.
23. "Graphene Bioelectronics," Construction Engineering Research Laboratory (CERL), Engineer Research & Development Center, U.S. Army Corps of Engineers, Champaign, IL, April 2014.
24. "Heterogeneous, Three-Dimensional Texturing of Graphene," Graphitic Carbon Materials, Chemistry and Physics of Gordon Research Seminar (GRS), Lewiston, ME, June 2014.
25. "Texturing Graphene Toward 3-Dimensional Biosensors," Korea Institute of Science and Technology (KIST), Seoul, South Korea, July 2014.
26. "All Carbon, Flexible Graphene Bioelectronic Sensors," US-Korea Conference (UKC) 2014, San Francisco, CA, August 2014.
27. "Three-dimensional, Flexible Graphene Bioelectronics," IEEE Engineering in Medicine & Biology Conference (EMBC), Chicago, USA, August 2014.
28. "Multi-scale Graphene for Advanced Bio-Interfaces," New Innovators Track, IEEE Micro and Nanotechnology in Medicine Conference (MNMC), Hawaii, USA, December 2014.
29. "Multi-scale Graphene for Advanced Bio-Interfaces," University of California, Irvine, January 2015.
30. "Multi-scale Graphene for Advanced Bio-Interfaces," Texas Tech University, February 2015.

31. "Multi-scale Graphene for Advanced Bio-Interfaces," Lawrence Livermore National Laboratory, March 2015.
32. "Three-Dimensional Graphene Micro/Nano Structures for Advanced Devices," Massachusetts Institute of Technology (MIT), May 2015.
33. "Crumpled Two-Dimensional Materials for Multifunctional Sensor Devices," 2015 BioNanotechnology Summer Institute, University of Illinois at Urbana-Champaign, August 2015.
34. "Folded and Crumpled Two-dimensional Materials for Stretchable, Multifunctional Sensor Devices," 3M, St. Paul, MN, September 2015.
35. "Three-dimensional Graphene Micro/Nano Structures for Advanced Devices," University of Michigan at Ann Arbor, October 2015.
36. "Folded and Crumpled Two-dimensional Materials for Stretchable, Multifunctional Sensor Devices," Hanyang University, Seoul, South Korea, October 2015.
37. "Crumpled Two-Dimensional Materials for Multifunctional Sensor Devices," University of California, Berkeley, November 2015.
38. "Folded and Crumpled Two-dimensional Materials for Stretchable, Multifunctional Sensor Devices," Air Force Research Laboratory (AFRL), Dayton, OH, December 2015.
39. "Folded and Crumpled Two-dimensional Materials for Stretchable, Multifunctional Sensor Devices," Korea Research Institute of Standards and Science (KRISS), Daejeon, South Korea, December 2015.
40. "Folded and Crumpled Two-Dimensional Materials for Stretchable, Strain-tunable Optoelectronics," Materials Research Society (MRS) Spring Meeting, Phoenix, AZ, March 2016.
41. "Folded and Crumpled Two-Dimensional Materials for Advanced Sensor Devices," Graphene 2016, Genoa, Italy, April 2016. *[Largest conference in 2D materials]*
42. "Folded and Crumpled Two-Dimensional Materials for Stretchable Electronics," Nature Conference on Flexible Electronics, Nanjing, China, June 2016. *[Conference organized by Nature Publishing Group]*
43. "Folded and Crumpled Two-Dimensional Materials for Stretchable Electronics," Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea, June 2016.
44. "Folded and Crumpled Two-Dimensional Materials for Stretchable Electronics," Department of Mechanical and Aerospace Engineering, Seoul National University, Seoul, South Korea, June 2016.
45. "Folded and Crumpled Two-Dimensional Materials for Stretchable Electronics," Department of Mechanical and Aerospace Engineering, University of California, Los Angeles (UCLA), Los Angeles, CA, June 2016.
46. "Folded and Crumpled 2D Materials – Where Shape Enables New Functions," NASA Langley Research Center, Hampton, VA, October 2016.
47. "Folded and Crumpled 2D Materials – Where Shape Enables New Functions," NASA Goddard Space Flight Center, Greenbelt, MD, November 2016.
48. "Folded and Crumpled 2D Materials – Where Shape Enables New Functions," University of Michigan, Ann Arbor, December 2016.
49. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Georgia Institute of Technology, Atlanta, January 2017.

50. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of California, Berkeley, January 2017.
51. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of California, San Diego, January 2017.
52. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Stanford University, February 2017.
53. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Carnegie Mellon University, April 2017.
54. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of Pennsylvania, April 2017.
55. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," IEEE Nano/Micro Engineered and Molecular Systems (NEMS), April 2016.
56. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Caltech, April 2017.
57. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Department of Chemical and Biological Engineering, Seoul National University, May 2017.
58. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Department of Materials Science and Engineering, Yonsei University, May 2017.
59. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Hanwha Advanced Materials, South Korea, June 2017.
60. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," NanoKorea 2017, South Korea, July 2017.
61. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," SES 2017, Boston, July 2017.
62. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Young Scientist Workshop, Seoul National University, September 2017.
63. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Jiangsu Industrial Technology Research Institute (JITRI), Nanjing, China, September 2017.
64. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of Notre Dame, October 2017.
65. "Designing and Shaping Nano-materials via Controlled Mechanical Deformations," The Minerals, Metals & Materials Society (TMS) 2018 Annual Meeting & Exhibition, Phoenix, March 2018.
66. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of California, Berkeley, March 2018.
67. "2D to 3D," Gordon Research Conferences (GRC) on 2D Materials Beyond Graphene, Easton, June 2018.
68. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," IUMRS-ICEM 2018, South Korea, August 2018.

69. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," Portland State University, October 2018.
70. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of California, Riverside, October 2018.
71. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," NASA Jet Propulsion Laboratory, November 2018.
72. "Tailoring Instability at the Atomic Limit for Novel Material Properties," Caltech, February 2019.
73. "Tailoring Instability of Atomically-thin Materials for Unconventional Material Properties," Rice University, March 2019.
74. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of Texas, Austin, May 2019.
75. "Mechanical Instability-driven Architecturing of Atomically-thin Materials – Where Shape Enables New Functions," University of California, Los Angeles, May 2019.
76. "Two-dimensional Materials: Deformation, Strain and Interfaces," Los Alamos National Laboratory, June 2019.
77. "Atomically-thin Origami and Kirigami for Advanced Electronics," IEEE Research and Applications of Photonics in Defense (RAPID), Miramar Beach, FL, August 2019.
78. "Two-dimensional Materials: Deformation, Strain and Interfaces," KAST Frontier Scientists Workshop, Cambridge, MA, December 2019.
79. "Straintronics in Two-dimensional Semiconductors," Washington University in St. Louis, St. Louis, March 2020.
80. "Mechanically Coupled Properties in Two-dimensional Van der Waals Materials," University of California, Irvine, Irvine, May 2020.
81. "Mechanically Coupled Properties in Two-dimensional Van der Waals Materials," Michigan State University, October 2020.
82. "Flexible and Deformable Electronics Using Strain-Engineered Van der Waals Materials," Georgia Institute of Technology, December 2020.
83. "Mechanically Coupled Properties in Two-dimensional Van der Waals Materials," North Carolina State University, February 2021.

**(g) Conference or Workshop Organization**

1. Symposium Organizer and Chair, Materials Research Society (MRS) Fall 2020, MT06 − Strain and Defect-Driven Transport Properties in van der Waals Solids, Boston, December 2020.
2. Symposium Organizer and Chair, Society of Engineering Science (SES) 2020, Track 6 − Mechanically-Coupled and Defect-Enabled Functionality in Atomically Thin Materials, Minneapolis, September 2020.
3. Symposium Organizer and Chair, Materials Research Society (MRS) Fall 2019, MS02 − Mechanically-Coupled and Defect-Enabled Functionality in Atomically Thin Materials, Boston, December 2019.
4. Symposium Organizer and Chair, Society of Engineering Science (SES) 2019, Symposium 8.2 – Mechanics of Deformable Atomically-thin Materials, St. Louis, October 2019.
5. Symposium Organizer and Chair, Materials Research Society (MRS) Spring 2019, QN3 − Tunable Physical Properties, Heterostructures and Device Applications, Phoenix, April 2019.

6. Symposium Organizer and Chair, The Minerals, Metals & Materials Society (TMS) 2019, 2019 Symposium on Functional Nanomaterials: Synthesis, Integration, and Application of Emerging Nanomaterials, San Antonio, March 2019.
7. Symposium Organizer and Chair, Materials Research Society (MRS) Spring 2018, NM11 − Deformable Two-dimensional Materials: Mechanics, Materials and Devices, Phoenix, April 2018.
8. Session Organizer and Chair, ASME International Mechanical Engineering Congress and Exposition (IMECE), 2D Materials Nano-manufacturing, Tampa, November 2017.
9. Session Organizer and Chair, IEEE Nano/Micro Engineered and Molecular Systems (NEMS), Two-dimensional Materials – Mechanics, Materials and Functional Devices, Los Angeles, April 2017.
10. Session Organizer and Chair, ASME International Mechanical Engineering Congress and Exposition (IMECE), 2D Materials Nano-manufacturing, Phoenix, November 2016.
11. Session Organizer and Chair, ASME International Mechanical Engineering Congress and Exposition (IMECE), Micro and Nano Forum, Houston, November 2015.
12. Session Organizer and Chair, IEEE Engineering in Medicine & Biology Conference (EMBC), Electronic Bio-interfaces, Chicago, August 2014.
13. Journal Liaison Chair, Technical Committee on Bio-Micro-Electro-Mechanical Systems (BioMEMS), IEEE Engineering in Medicine & Biology Society, 2016-Present.
14. Member, Nanoengineering For Energy and Sustainability (NEES) Committee, American Society of Mechanical Engineers (ASME), 2015-Present.