CURRICULUM VITAE

SungWoo Nam
Department of Mechanical Science and Engineering (MechSE)
Department of Materials Science and Engineering (MatSE)
University of Illinois at Urbana-Champaign (UIUC)
Phone: (217) 300-0267; Email: swnam@illinois.edu
Webpage: http://nam.mechse.illinois.edu
https://mechanical.illinois.edu/directory/faculty/swnam

SungWoo Nam is an Assistant Professor in the Department of Mechanical Science and Engineering at University of Illinois at Urbana-Champaign (UIUC). His current research program pursues innovations in **controlled deformation (i.e., 'architecturing') of atomically-thin, two-dimensional (2D) materials to explore how unique shapes of atomically-thin materials enable new functionalities**. In particular, his research group studies mechanical self-assembly of folded and crumpled graphene and two-dimensional materials for strain-tolerant and flexible/stretchable forms of sensors for biotic and abiotic investigations.

(a) Education and Training

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 (w/ Charles Lieber)	Ph.D. 2011
2011/3-2012/7	Univ. of California, Berkeley	Bioengineering (w/ Luke Lee)	Postdoc 2012

(b) Research and Professional Experience

2012/8- Assistant Professor, Mechanical Science and Engineering, UIUC
2002/1-2005/4 Research Associate, ILJIN Nanotech Co. Ltd. (*Carbon Nanotube Manufacturer*) (currently Hanwha Chemical Co. Ltd., Seoul, Korea)

(c) Publications

1. 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). ***[Back Cover]***
2. 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).
3. 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).
4. 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," ***Adv. Fun. Mater.* 1701513** (2017).
5. 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).

6. 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).
7. 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).
8. M. Kim, P. Kang, J. Leem, **S. Nam**, "Stretchable Crumpled Graphene Photodetector with Plasmonically-enhanced Photoresponsivity," ***Nanoscale* 9**, 4058 (2017). ***[Front Cover]***
9. 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). ***[Front Cover]***
   - *Highlighted by (Engineering @ Illinois) (MechSE) (AAAS EurekAlert) (NSF) (Phys.org) (ScienceDaily) (ScienceDaily) (ECN Mag) (Nanowerk)*
10. 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).
    - *Highlighted by (Engineering @ Illinois) (MechSE @ Illinois) (AAAS EurekAlert) (Phys.org) (ScienceDaily) (Nanotechnology Now) (ECN Mag) (Science Newsline) (eScience News) (Materials Gate)*
11. 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).
    - *Highlighted by (Engineering @ Illinois) (ScienceBlog.com) (AAAS EurekAlert) (Phys.org) (ScienceDaily) (ECN Mag) (Nanowerk) (R&D Mag) (Nanotechnology Now) (Controlled Environments) (Chem Europe) (Materials Gate)*
12. 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).
13. P. Kang, M.C. Wang and **S. Nam**, "Bioelectronics with two-dimensional materials," ***Microelectronic Engineering* 161**, 18 (2016). ***[Invited Review Article]***
14. 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).
15. 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).
16. 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).
    - *Highlighted by (Nature Nanotechnology) (Materials Today) (Engineering @ Illinois) (Nanowerk) (MechSE) (R&D Mag) (Nanotechnology Now) (ECN Mag) (Phys.org) (ScienceDaily) (AAAS EurekAlert) (MNT)*
17. 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).

- *Highlighted by (Engineering @ Illinois) (Phys.org) (Nanowerk Spotlight) (MechSE News) (ScienceDaily) (Nanowerk) (R&D Mag) (Controlled Environments) (Science Newsline) (Nanotechnology Now) (AAAS EurekAlert) (EIPC) (AAAS EurekAlert) (TechFragments)*

18. 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).
    - *Highlighted by (MechSE @ Illinois) (Engineering@Illinois) (IEEE Spectrum) (Phys.org) (Science Daily) (R&D Magazine) (NanoWerk) (Engineering.com) (Solid State Technology) (Semiconductor Manufacturing & Design) (New Material News) (Scicasts) (2D Research) (ECS) (AAAS EurekAlert)*
19. H. Kim, J. Choi, **S. Nam** and W. King, "Batch Fabrication of Transfer-Free Graphene-Coated Microcantilevers," ***IEEE Sensors Journal* 15**, 2717 (2015).
20. M. C. Wang, J. Choi, J. Bang, S. G. Chun, B. Smith and **S. Nam**, "Monolithic Graphene–Graphite Integrated Electronics," ***Nanomaterials, Polymers, and Devices: Materials Functionalization and Device Fabrication***, Ed. Eric Kong, John Wiley & Sons, Inc, 2015, 523–538, Print.
21. 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).
22. 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).
23. **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).
24. 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).
25. 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).
    - *Highlighted by MIT Technology Review and Electronics 360*
26. J. Choi, M. C. Wang, R. Y. S. Cha, W. I. Park and **S. Nam**, "Graphene Bioelectronics," ***Biomedical Engineering Letters* 3**, 201 (2013).
27. S. Chun, J. Choi and **S. Nam**, "All-Carbon Graphene Bioelectronics," ***Proc. of IEEE Engineering in Medicine and Biology Society (EMBS) Conference* 2013**, 5654 (2013).
28. 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.***
29. **S. Nam**, M.-S. Lee and J.-U. Park, "Monolithic Graphene Transistor Biointerface," ***Proc. of IEEE Engineering in Medicine and Biology Society (EMBS) Conference* 2012**, 5678 (2012).
30. 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.
31. **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).

32. 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).
33. 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.

(d) Patents

1. 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.
2. C. M. Wang and **S. Nam**, "Three-dimensional (3D) Texturing of Two Dimensional Materials," U.S. Non-Provisional Patent Application 14/716,303, May 19, 2015.
3. 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.
4. 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.

(e) Honors and Awards

Research Honors and Awards

1. **The Minerals, Metals & Materials Society (TMS) 2018 Early Career Faculty Fellow Award** (2018)
2. **Young Investigator Program (YIP) Award**, Office of Naval Research (ONR) (2017)
3. **Dean's Award for Excellence in Research**, College of Engineering, University of Illinois (2017)
4. **Arab-American Frontiers Fellowship**, U.S. National Academy of Sciences (2017)
5. **Poster Award**, ASME IMECE 2016 Micro & Nano Technology Forum (2016)
6. **Invited Participant**, 2016 Arab-American Frontiers of Science, Engineering, and Medicine Symposium, U.S. National Academy of Sciences (2016)
7. **Early Career Faculty (ECF) Award**, National Aeronautics and Space Administration (NASA) (2016)
8. **Young Investigator Research Program (YIP) Award**, Air Force Office of Scientific Research (AFOSR) (2016)
9. **Faculty Early Career Development Program (CAREER) Award**, National Science Foundation (NSF) (2016)
10. **Poster Award**, ASME IMECE 2015 Micro & Nano Technology Forum (2015)
11. IEEE EMBS Micro and Nanotechnology in Medicine Conference **New Innovators Lectureship** (2014)
12. **Young Investigator Award**, Korean-American Scientists and Engineers Association (KSEA) (2014)
13. **Doctoral New Investigator Award**, American Chemical Society (ACS) (2013)
14. **Gold Award**, Materials Research Society (2011)
15. **Outstanding Student Designer Award** at ISSCC, Analog Devices (2010)
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. Summa Cum Laude with the **Valedictorian Prize (*1st in Engineering*)**, Seoul National University (2002)

Teaching Honors and Awards

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

(f) Professional Memberships

1. Member, Materials Research Society (MRS), 2008-Present
2. Member, Institute of Electrical and Electronics Engineers (IEEE), 2013-Present
3. Member, Engineering in Medicine and Biology Society (EMBS), 2013-Present
4. Member, Biophysical Society, 2013-Present
5. Member, American Society of Mechanical Engineers (ASME), 2013-Present

(g) Research Grants/Contracts Received (PI's share: >$5 Million)

1. **Source:** *UIUC Campus Research Board*
   Title: Synthesis of Intracellular Nano-Electrophysiology Platform
   PI: SungWoo Nam **Period of Performance:** August 2013 – July 2014
2. **Source:** *Air Force Office of Scientific Research (AFOSR)/Asian Office of Aerospace Research and Development (AOARD)*
   Title: Nanotube-on-Graphene Heterostructures for Smart Nano/Bio-Interface
   PI: SungWoo Nam **Period of Performance:** August 2013 – July 2016
3. **Source:** *American Chemical Society (ACS) Petroleum Research Fund (PRF)*
   Title: Rapid-Thermal Catalytic Conversion of Petroleum Products into Multilayer Graphene
   PI: SungWoo Nam **Period of Performance:** August 2013 – July 2015
4. **Source:** *Samsung Global Research Outreach (GRO)*
   Title: Mesoporous Graphene Transistor Olfactory Biosensors
   PI: SungWoo Nam **Period of Performance:** Nov 2013 – January 2015
5. **Source:** *Beckman Institute*
   Title: NanoStrong: Ultra-strong Nanostructured Carbon-Based Materials *(Collaborative)*
   PI: Joe Lyding; **Co-PI:** SungWoo Nam **Period of Performance:** May 2014 – April 2016
6. **Source:** *Brain Research Foundation (BRF)*
   Title: Gel-like Nano-devices for Non-invasive, Electrical and Chemical Recording of Neural Activities
   PI: SungWoo Nam **Period of Performance:** May 2014 – April 2015
7. **Source:** *Korean-American Scientists and Engineers Association (KSEA)*
   Title: Monolithic Synthesis of Graphene-Graphite Nanoprobe Platform
   PI: SungWoo Nam **Period of Performance:** May 2014 – April 2015
8. **Source:** *Department of Energy (DOE)*
   Title: AOI: 1-B: An Integrated Supercritical System for Efficient Produced Water Treatment and Power Generation *(Collaborative)*

PI: Seyed Dastgheib; **Co-PI:** SungWoo Nam **Period of Performance:** Jan 2015 – May 2017

9. **Source:** *Lawrence Livermore National Laboratory (LLNL)*
   Title: Carbon-based Electrodes
   PI: SungWoo Nam **Period of Performance:** Oct 2015 – Sept 2018
10. **Source:** *National Science Foundation (NSF)*
    Title: CAREER: Corrugated Graphene Superlattice Structures by Strain-induced Shrink Nanomanufacturing
    PI: SungWoo Nam **Period of Performance:** Feb 2016 – January 2021
11. **Source:** *OSF Healthcare*
    Title: Graphene Coated Catheters
    PI: SungWoo Nam **Period of Performance:** Feb 2016 – January 2017
12. **Source:** *Korean Ministry of Trade, Industry and Energy (MOTIE) (through Korean Research Institute of Standards and Science (KRISS))*
    Title: Direct Low-temperature Synthesis of Two-dimensional Materials and Heterostructure on Flexible Substrate for Next-generation High-mobility Electronic Devices
    PI: SungWoo Nam **Period of Performance:** Mar 2016 – Dec 2017
13. **Source:** *Air Force Office of Scientific Research (AFOSR)*
    Title: Reconfigurable, Corrugated Graphene Plasmonics
    PI: SungWoo Nam **Period of Performance:** May 2016 – April 2019
14. **Source:** *Air Force Office of Scientific Research (AFOSR)/Asian Office of Aerospace Research and Development (AOARD)*
    Title: Nanotube-on-Graphene Heterostructures for Smart Nano/Bio-Interface
    PI: SungWoo Nam **Period of Performance:** August 2016 – July 2017
15. **Source:** *National Aeronautics and Space Administration (NASA)*
    Title: Strain Sensors Based on Sandwich Structures of Crumpled Graphene for Structural Health Monitoring
    PI: SungWoo Nam **Period of Performance:** August 2016 – July 2020
16. **Source:** *National Aeronautics and Space Administration (NASA)*
    Title: Corrugated Two-dimensional Material Enabled Flexoelectricity for Cryogenic Actuator Technology
    PI: SungWoo Nam **Period of Performance:** Oct 2016 – Sept 2019
17. **Source:** *Intel Corporation*
    Title: A Ultra-Low-Power, Versatile Wearable Bio-Sensing System *(Collaborative)*
    PI: Nam Sung Kim; **Co-PI:** SungWoo Nam **Period of Performance:** Dec 2016 – Nov 2017
18. **Source:** *Defense Threat Reduction Agency (DTRA) (through Los Alamos National Laboratory (LANL))*
    Title: Optogenetically Patterned-NMJs Using Graphene Interfaces For Screening Of CWAs *(Collaborative)*
    PI: Rashid Bashir; **Co-PI:** SungWoo Nam **Period of Performance:** Feb 2017 – Jan 2020
19. **Source:** *Office of Naval Research (ONR)*
    Title: Energy Harvesting, Structural Monitoring Sensor Based on Corrugated Atomically-thin Semiconductors
    PI: SungWoo Nam **Period of Performance:** June 2017 – May 2020
20. **Source:** *National Aeronautics and Space Administration (NASA)*
    Title: Frequency Tunable Piezoelectric Energy Harvester based on Crumpled MoS2 and Graphene

PI: SungWoo Nam **Period of Performance:** August 2017 – July 2021

21. **Source:** *Hanwha Advanced Materials*
    Title: Mechanical Instability-driven Architecturing of Atomically-thin Materials
    PI: SungWoo Nam **Period of Performance:** June 2017
22. **Source:** *Air Force Office of Scientific Research (AFOSR)/Asian Office of Aerospace Research and Development (AOARD)*
    Title: Single Quantum Emitters based on Strained Quantum Dots in Two-dimensional Semiconductors
    PI: SungWoo Nam **Period of Performance:** August 2017 – July 2021
23. **Source:** *National Science Foundation (NSF)*
    Title: Electrically-Tunable Surface Energy and Reactivity of Graphene *(Collaborative)*
    PI: SungWoo Nam; **Co-PI:** Narayana Aluru **Period of Performance:** Jul 2017 – Jun 2020
24. **Source:** *National Science Foundation (NSF)*
    Title: Illinois Materials Research Center *(Collaborative)*
    PI: Nadya Mason; **Senior Personnel:** SungWoo Nam **Period of Performance:** Sep 2017 – Aug 2023
25. **Source:** *Army Research Laboratory (ARL)*
    Title: Mechanically Robust, High Temperature Nanomaterial Based Sensors for Development of Next-Generation Small Scale UAV Turbines *(Collaborative)*
    PI: Tonghun Lee; **Co-PI:** SungWoo Nam **Period of Performance:** Oct 2017 – Sep 2019

(h) 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.

(i) Students and Postdocs Advised

PhD Students (graduation date)

1. Ali Ashraf, Ph.D. (graduated March 2016)
   - Current Position: Process Technology Development Engineer at Intel Corporation, Portland, OR
   - Ph.D. Thesis Title: Wettability of Graphitic Materials and Their Application in Separation
2. Michael Cai Wang (Canadian NSERC Postgraduate Doctoral Scholarship Fellow)
3. Jonghyun Choi (FMC Fellow) – *Jonghyun will join Intel Corp as a Device Engineer once he completes his Ph.D.*
4. Juyoung Leem (Korean Government Scholarship Program Fellow)
5. Keong Yong
6. Peter Knapp (NASA Space Technology Research Fellowships (NSTRF) Fellow & NASA Pathways Intern at Goddard Space Flight Center (GSFC)) – *Peter will join NASA GSFC as a civil servant once he completes his Ph.D.*

7. Chullhee Cho (NASA Space Technology Research Fellowships (NSTRF) Fellow)
8. Farhad Haque
9. Yeageun Lee
10. Yerim Kim
11. Zhichao Zhang
12. Jin Myung Kim
13. Saif Alen

Master Students (graduation date)

1. Jaehoon Bang (May 2014)
   - Current Position: Ph.D. student at Purdue University
2. SungGyu Chun (May 2014)
   - Current Position: Researcher at Agency for Defense Development (ADD), Republic of Korea
   - M.S. Thesis Title: A Detailed Study on Controlled Synthesis and Device Integration of Monolithic Graphene-Graphite Structures
3. Michael Cai Wang (May 2014)
   - Current Position: Ph.D. student at UIUC in Nam research group
   - M.S. Thesis Title: Formation of Three-dimensional Graphene Structures by Controlled Thermal Activation of Polymeric Shape Memory Substrates
4. Jonghyun Choi (May 2014)
   - Current Position: Ph.D. student at UIUC in Nam research group
   - M.S. Thesis Title: Three-dimensional Graphene/Graphite Structure for Ultra-sensitive Biosensor
5. Minsu Kim (December 2016) in Materials Science and Engineering
   - Current Position: Researcher at Korean Research Institute of Chemical Technology
   - M.S. Thesis Title: Stretchable Crumpled Graphene Photodetector with Plasmonically-enhanced Photoresponsivity
6. Thomas Stofko (May 2017) in M.Eng
   - Current Position: Engineer at Sandia National Laboratory

Postdoctoral Research Associates

1. Dr. Hyung Jong Bae (Ph.D. in Electrical Engineering, Seoul National University) (2017-)
2. Dr. Pilgyu Kang (Ph.D. in Mechanical Engineering, Cornell University) (2014-2017)
   - Current Position: Assistant Professor, Department of Mechanical Engineering at George Mason University
3. Dr. Junghoon Kim (Ph.D. in Electrical Engineering, Seoul National University) (2016-2017)
   - Current Position: Research Engineer, Samsung Electronics

Visiting Scholars

1. Xuejin Li, PhD Student, China University of Petroleum (supported by Chinese Scholarship Council) (2016-2017)
2. Jeong Woo Yun, Professor, Chonnam National University (2017-2018)
3. Changsoon Choi, PhD Student, Seoul National University (2017-2018)

(j) Community and Outreach Activities

1. Mentoring undergraduate student researchers: Student Veteran (Thomas Michael Jr Stofko, United States Marine Corps), Nano@illinois REU student (Ernesto Garcia), TRiO McNair Scholars (Mahmoud Fouly), Illinois Scholars Undergraduate Research Program (Ryan Han, Satoshi Takekuma, Widianto Moestopo, David Lisk), James Scholars Program (Advika Battini).
2. Nano@illinois Research Experiences for Teachers (RET)/Research Experiences for Undergraduates (REU), Lecturer ("All Carbon Graphene Bioelectronics"), Champaign, IL (2014-2016).
3. Experience Illinois 2014, Lecturer and activity module development ('Making a Circuit with a Pencil') for Lindblom Math and Science Academy, Champaign, IL (2014).
4. Girls Adventures in Mathematics, Engineering, and Science (G.A.M.E.S.), Lecturer and activity module development ('Making a Circuit with a Pencil') for high school students, Champaign, IL (2013 & 2014).
5. Developed new curricular materials for Nanoscience and Nanotechnology (ME 498 Introduction to Nanoscience and Nanotechnology) for undergraduate students at College of Engineering, University of Illinois at Urbana-Champaign (2012).

(k) University Services

1. Faculty Senate (2017-2018)
2. MechSE Departmental Advisory Committee (2017-2019)
3. Faculty Recruiting Committee (2016-2018)
4. Graduate Program Committee (2015-2017)
5. Seminar Committee (2012-2017)

(l) Conference or Workshop Organization

1. Session Organizer and Chair, Materials Research Society (MRS) Spring 2018, Deformable Two-dimensional Materials: Mechanics, Materials and Devices, Phoenix, April 2018.
2. Session Organizer and Chair, IEEE Nano/Micro Engineered and Molecular Systems (NEMS), Two-dimensional Materials – Mechanics, Materials and Functional Devices, Los Angeles, April 2017.
3. Session Organizer and Chair, ASME International Mechanical Engineering Congress and Exposition (IMECE), 2D Materials Nano-manufacturing, Phoenix, November 2016.
4. Session Organizer and Chair, ASME International Mechanical Engineering Congress and Exposition (IMECE), Micro and Nano Forum, Houston, November 2015.
5. Session Organizer and Chair, IEEE Engineering in Medicine & Biology Conference (EMBC), Electronic Bio-interfaces, Chicago, August 2014.
6. Journal Liaison Chair, Technical Committee on Bio-Micro-Electro-Mechanical Systems (BioMEMS), IEEE Engineering in Medicine & Biology Society, 2016-Present.
7. Member, Nanoengineering For Energy and Sustainability (NEES) Committee, American Society of Mechanical Engineers (ASME), 2015-Present.

(m) Reviewer or Editorship Activities

1. Associate Editor, Proceedings of IEEE EMBC (2015 & 2016)
2. Journal reviewer for Nature, Nano Letters and ACS Nano (reviewed more than 100 articles combined); ACS Applied Materials & Interfaces; Nanoscale; Langmuir; The Journal of Physical Chemistry Letters; The Journal of Physical Chemistry; NPG Asia Materials; Advanced Materials; Advanced Functional Materials; Advanced Electronic Materials; Extreme Mechanics Letters; Applied Physics Letters; Analyst; Physical Chemistry Chemical Physics; Theranostics; Journal of Vacuum Science & Technology B; Microelectronic Engineering; ASME Journal of Micro and Nano-Manufacturing; MRS Conference Proceedings; ASME IMECE Conference Proceedings; IEEE EMBC Conference Proceedings.
3. Proposal reviewer for National Science Foundation (NSF), American Chemical Society, National Research Foundation of Singapore, and Foundation for Polish Science