

Stanford



Juyoung Leem

Postdoctoral Research Fellow, Mechanical Engineering

Bio

HONORS AND AWARDS

- The Carbon Journal Prize 2020, Carbon (Scientific journal) (2020)
- TomKat Center Postdoctoral Fellowship in Sustainable Energy, TomKat Center for Sustainable Energy, Stanford University (2020)
- Graduate Student Travel Award, Graduate College, University of Illinois at Urbana-Champaign (2019)
- MRS Graduate Student Award (GSA) Gold Award, Materials Research Society (MRS) (2019)
- Materials Research Society Arthur Nowick Graduate Student Award, Materials Research Society (MRS) (2019)
- Graduate Teaching Fellowship (for course instructor), Mechanical Science and Engineering Department, University of Illinois at Urbana-Champaign (2018)

PROFESSIONAL EDUCATION

- Ph.D., University of Illinois at Urbana-Champaign, Mechanical Engineering (2020)
- M.S., KAIST (Korea Advanced Institute of Science and Technology), Mechanical Engineering (2013)
- B.S., KAIST (Korea Advanced Institute of Science and Technology), Mechanical Engineering (2011)

STANFORD ADVISORS

- Xiaolin Zheng, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Curved neuromorphic image sensor array using a MoS₂-organic heterostructure inspired by the human visual recognition system** *NATURE COMMUNICATIONS*
Choi, C., Leem, J., Kim, M., Taqieddin, A., Cho, C., Cho, K., Lee, G., Seung, H., Jong, H., Song, Y., Hyeon, T., Aluru, N. R., Nam, et al
2020; 11 (1): 5934
- **Kirigami-inspired strain-insensitive sensors based on atomically-thin materials** *MATERIALS TODAY*
Yong, K., De, S., Hsieh, E. Y., Leem, J., Aluru, N. R., Nam, S.
2020; 34: 58–65
- **Ultrasensitive detection of nucleic acids using deformed graphene channel field effect biosensors** *NATURE COMMUNICATIONS*
Hwang, M., Heiranian, M., Kim, Y., You, S., Leem, J., Taqieddin, A., Faramarzi, V., Jing, Y., Park, I., van der Zande, A. M., Nam, S., Aluru, N. R., Bashir, et al
2020; 11 (1): 1543
- **Interaction of 2D materials with liquids: wettability, electrochemical properties, friction, and emerging directions** *NPG ASIA MATERIALS*
Snapp, P., Kim, J., Cho, C., Leem, J., Haque, M., Nam, S.
2020; 12 (1)

- **A snapshot review on exciton engineering in deformed 2D materials** *MRS ADVANCES*
Leem, J.
2020; 5 (64): 3491–3506
- **Uniaxially crumpled graphene as a platform for guided myotube formation** *MICROSYSTEMS & NANOENGINEERING*
Kim, J., Leem, J., Kim, H., Kang, P., Choi, J., Haque, M., Kang, D., Nam, S.
2019; 5: 53
- **Crack-assisted, localized deformation of van der Waals materials for enhanced strain confinement** *2D MATERIALS*
Leem, J., Lee, Y., Wang, M., Kim, J., Mun, J., Haque, M., Kang, S., Nam, S.
2019; 6 (4)
- **Colloidal Photonic Crystal Strain Sensor Integrated with Deformable Graphene Phototransducer** *ADVANCED FUNCTIONAL MATERIALS*
Snapp, P., Kang, P., Leem, J., Nam, S.
2019; 29 (33)
- **Ultraviolet to Mid-Infrared Emissivity Control by Mechanically Reconfigurable Graphene** *NANO LETTERS*
Krishna, A., Kim, J., Leem, J., Wang, M., Nam, S., Lee, J.
2019; 19 (8): 5086–92
- **Photonic crystallization of two-dimensional MoS₂ for stretchable photodetectors** *NANOSCALE*
Kim, R., Leem, J., Muratore, C., Nam, S., Rao, R., Jawaid, A., Durstock, M., McConney, M., Drummy, L., Rai, R., Voevodin, A., Glavin, N.
2019; 11 (28): 13260–68
- **High-Mobility MoS₂ Directly Grown on Polymer Substrate with Kinetics-Controlled Metal-Organic Chemical Vapor Deposition** *ACS APPLIED ELECTRONIC MATERIALS*
Mun, J., Park, H., Park, J., Joung, D., Lee, S., Leem, J., Myoung, J., Park, J., Jeong, S., Chegal, W. C., Nam, S., Kang, S.
2019; 1 (4): 608–16
- **Mechanical instability driven self-assembly and architecturing of 2D materials** *2D MATERIALS*
Wang, M., Leem, J., Kang, P., Choi, J., Knapp, P., Yong, K., Nam, S.
2017; 4 (2)
- **A stretchable crumpled graphene photodetector with plasmonically enhanced photoresponsivity** *NANOSCALE*
Kim, M., Kang, P., Leem, J., Nam, S.
2017; 9 (12): 4058–65
- **Mechanically Self-Assembled, Three-Dimensional Graphene-Gold Hybrid Nanostructures for Advanced Nanoplasmonic Sensors** *NANO LETTERS*
Leem, J., Wang, M., Kang, P., Nam, S.
2015; 15 (11): 7684–90
- **Three-Dimensional Integration of Graphene via Swelling, Shrinking, and Adaptation** *NANO LETTERS*
Choi, J., Kim, H., Wang, M., Leem, J., King, W. P., Nam, S.
2015; 15 (7): 4525–31
- **Photoinduced synthesis of Ag nanoparticles on ZnO nanowires for real-time SERS systems** *RSC ADVANCES*
Kang, H., Leem, J., Sung, H.
2015; 5 (1): 51–57
- **Controllable Ag nanostructure patterning in a microfluidic channel for real-time SERS systems** *NANOSCALE*
Leem, J., Kang, H., Ko, S., Sung, H.
2014; 6 (5): 2895–2901
- **Continuous synthesis of zinc oxide nanoparticles in a microfluidic system for photovoltaic application** *NANOSCALE*
Kang, H., Leem, J., Yoon, S., Sung, H.
2014; 6 (5): 2840–46
- **Vacuum-assisted microcontact printing (mu CP) for aligned patterning of nano and biochemical materials** *JOURNAL OF MATERIALS CHEMISTRY C*
Kang, H., Leem, J., Ko, S., Yoon, S., Sung, H.
2013; 1 (2): 268–74