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Educations:

Ph.D. Department of Materials Science and Engineering, POSTECH, Korea (1997 –2001)
M.A. Department of Materials Science and Engineering, POSTECH, Korea (1995 –1997)
B.A. Department of Materials Science and Engineering, POSTECH, Korea (1991 –1995)

Appointments:

- School of Electrical & Electronic Engineering, College of Engineering, Yonsei University, Korea (Full Professor, Underwood Distinguished Professor, Yonsei Fellow) (2015 ~ present)
- School of Electrical & Electronic Engineering, College of Engineering, Yonsei University, Korea (Associate Professor, Underwood Distinguished Professor) (Jan. 2013 ~ Feb. 2015)
- Department of Materials Science and Engineering, Sungkyunkwan University, Korea (Assistant/Associate Professor, SKKU fellow) (Mar. 2008 ~ Dec. 2012)
- Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, USA (Post-doctor) (Nov. 2004 ~Jan. 2008)

Awards/Honors:

- Member of the Korean Academy of Science and Technology (2022~)
- The 3.1 Prize form the Samil Foundation (2021).
- The Ministry of Science and ICT Award (2020).
- The National Academy Science Award (2018).
- Yonsei University, Underwood distinguished professor (2013~present).
- Ministry of Future, Science and Technology, ICT Innovation Award (April 2015)
- Korean Academy of Science and Technology, Young Scientist Award (Dec 2011).
- The Electron Devices Society, George E. Smith Award (April 2009)

Major Technical Accomplishments:

- Invited Talks at Major International Conferences (> 100)
- Patents (~70 issued or pending),
- Over 250 publications (3 in Science, 1 in Nature, 2 in Nature Materials, 7 in Nature Nanotechnology, 1 in Nature Photonics, 6 in Nature Communications, 5 Science Advances) with over 55,000 citations (H index is 87).

Professional Service Accomplishments:

- President of Korean Graphene Society (2019 ~ 2021)
- Associate Editor of “NPG Asia Materials” published by Nature Publishing Co. UK.
- The Executive Editorial board member of “2D Materials” published by IOP, UK.
- The Editorial board member of “Advanced Electronic Materials” published by Wiley, Germany

Selected Publication list (2010 ~)

1. J. Kang *et al*., “Monolithic 3D integration of 2D materials based electronics towards ultimate edge computing solutions”, *Nature Materials*, 22, 1470 (2023)
2. A. Hoang. *et al*., "Low temperature growth of MoS_2 on polymer and thin glass substrates for flexible electronics", *Nature Nanotechnology*, 18, 1439 (2023)
3. J. Chen. *et al*., "Optoelectronic graded neurons for bioinspired in-sensor motion perception", *Nature Nanotechnology*, 18, 882 (2023)
4. J. Choi *et al.*, "Wafer-scale monolithic integration of full-colour micro-LED display using MoS_2 transistor", *Nature Nanotechnology,* 17, 500 (2022)
5. F. Liao *et al*., "Bio-inspired in-sensor visual adaptation for accurate perception", *Nature Electronics,* 5, 84 (2022)
6. Katiyar *et al.*, "Breaking the absorption limit of Si towards SWIR wavelength range via strain engineering", *Science Advances*, 6, eabb0576, (2020)
7. M. Choi *et al.*, "Full color active-matrix organic-light emitting diode display on human skin based on a large area MoS_2 backplane", *Science Advances*, 6, eabb5898 (2020)
8. S. Lim *et al*., "Assembly of Foldable 3D Microstructures Using Graphene Hinges", *Advanced Materials **32***, 2001303 (2020)
9. J.-B. Lee *et al*., "Direct Synthesis of Self-Assembled WSe_2/ MoS_2 Heterostructure Array and Its Optoelectrical Properties", *Advanced Materials* **31**, 1904194 (2019)
10. Y.J. Park, et al., "All MoS_2 Based Large Area, Skin-Attachable Active-Matrix Tactile Sensor" *ACS Nano*, 13, 3023 (2019).
11. S.W. Park, et al., "Epidural electrotherapy for epilepsy", *Small,* 14, 1801732 (2018)
12. W. Lee, et al., "Two-Dimensional Materials in Functional Three-Dimensional Architectures with Applications in Photodetection and Imaging", *Nature Communications*, 9, 1417 (2018)
13. X. Chen et al., "CVD-Grown Monolayer MoS_2 in Bioabsorbable Electronics and Biosensors", *Nature Communications*, 9,1690 (2018)
14. M. Choi et al., "Flexible Active-Matrix Organic Light-Emitting Diode Display Enabled by MoS_2 Thin-Film Transistor", *Science Advances*, 4, eaas8721 (2018)
15. J. Shim *et al*, "Controlled crack propagation for atomic precision handling of wafer-scale two-dimensional materials" *Science*, **11**, eaat8126 (2018)
16. S. Shinde et al., "Surface-functionalization-mediated Direct Transfer of Molybdenum Disulfide for Large-area Flexible Devices", *Advanced Functional Materials,* 28(23), 1706231 (2018)
17. M. Kang et al., "Graphene-based Three Dimensional Capacitive Touch Sensor for Wearable Electronics", *ACS Nano*, 11, 7950 (2017)
18. M. Choi et al., "Stretchable Active Matrix Inorganic Light-Emitting Diode Display Enabled by Overlay-Aligned Roll-Transfer Printing", *Advanced Functional Materials,* 27, 11, 1606005, (2017)
19. M. Park et al., "MoS2 based tactile sensor for electronic skin applications", *Advanced Materials.*, 28, 2556 (2016)
20. S. K. Lee et al., "Drying-mediated Self-assembled Growth of Transition Metal Dichalcogenide Wires and Their Heterostructures", *Advanced Materials.*, 27, 4142-4149 (2015)
21. Y.J. Park et al., "Graphene Based Conformal Devices", *ACS Nano* ,8(8), 7655-7662 (2014)
22. J. H. Son et al., "Detection of graphene domains and defects using liquid crystals", *Nature Commun.,* 5:3484, doi: 10.1038/ncomms4484(2014)
23. B. K. Sharma, et al., "Load-Controlled Roll Transfer of Oxide Transistor for Stretchable Electronics", Adv. Func. Mat., 23, 2024-2032, (2013) (selected as cover).
24. S.H. Bae, et al., "Graphene-P(VDF-TrFE) multilayer film for flexible applications", ACS Nano, 7(4), 3130-3138, (2013).
25. J.E. Lee, et al., "Thermal Stability of Metal Ohmic Contacts in indium-gallium-zinc-oxide Transistors Using a Graphene Barrier Layer", Applied Physics Letters, 102, 113112, (2013).
26. S.H. Bae, et al., "Graphene-based transparent strain sensor", Carbon, 51, 236, (2013)
27. B. J. Kim, et al., "Coplanar-Gate Transparent Graphene Transistors and Inverters on Plastic", ACS Nano, 6, 8646-8651, (2012).
28. J. Kwon, et al., "A High Performance PZT Ribbon-Based Nanogenerator using Graphene Transparent Electrodes", Energy & Environmental Science, 5, 8970-8975, (2012).

29. S.K. Lee, et al., "All Graphene based Thin Film Transistors on Flexible Plastic Substrates", Nano Lett., 12(7), 3472–3476, (2012).
30. T.H. Han, et al., "Extremely Efficient Flexible Organic Light-emitting Diodes with Modified Graphene Anode" Nature Photonics, 6, 105–110, (2012).
31. S.-K. Lee, et al., "Stretchable Graphene Transistors with Printed Dielectrics and Gate Electrodes", Nano Lett., 11, 4642–4646, (2011).
32. S.-E. Zhu, et al., "Graphene-Based Bimorph Microactuators", Nano Letters, 11, 977-981, (2011).
33. B. J. Kim, et al., "High-Performance Flexible Graphene Field Effect Transistors with Ion Gel Gate Dielectrics", Nano Letters, 10, 3464, (2010).
34. S. Bae, et al., "Roll-to-roll production of 30-inch graphene film for transparent electrodes", Nature Nanotechnology, 5, 574, (2010) (selected as cover).
35. Y. Lee, et al., “Wafer Scale Synthesis and Transfer of graphene films”, Nano Letters, 10, 490-493, (2010).