

## LEE Young Hee

Professor  
Department of Physics



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**Key Words** Nanocarbons, 2D van der Waals layered materials, carrier dynamics, quantum tunneling, thermoelectric, energy harvesting

**Research Area** Materials synthesis of 2D layered materials and exploration of unprecedented new physics from van der Waals heterostructures and their devices for quantum carrier dynamics, tunneling phenomena, thermoelectric and energy harvesting.

- Education**
- 1982 - Feb. 1986 PhD Physics, Kent State University, U. S. A.
  - MSc
  - 1976 - Feb. 1982 BSc Physics, Chonbuk National University, Korea

- Experience**
- 1987 - 2001 Assistant Professor - Full Professor in Physics, Chonbuk National University
  - 1996 - 1997 Visiting Professor in Physics, Michigan State University, U. S. A
  - 1993 - 1993 Visiting Researcher, Zurich IBM Research Center, Switzerland
  - 1989 - 1990 Visiting Professor in Physics, State University Ames National Laboratory, U.S.A

- Position**
- 2012. 12 ~ Present Director, Center for Integrated Nanostructure Physics, Institute for Basic Science, Sungkyunkwan University
  - 2009. 3 ~ Present Professor in Energy Science, Sungkyunkwan University
  - 2001. 3 ~ Present Professor in Physics, Sungkyunkwan University, SKKU fellow

- Selected Publication**
- 'Probing graphene grain boundaries with optical microscopy', Nature, 490, 231-239 (2012).
  - Transferred wrinkled Al<sub>2</sub>O<sub>3</sub> for highly stretchable and transparent graphene/carbon nanotube transistors', Nature Materials 12, 403-409 (2013).
  - Phase patterning for ohmic homojunction contact in MoTe<sub>2</sub>', Science 349, 621-628 (2015).
  - Bandgap opening in few-layered monoclinic MoTe<sub>2</sub>', Nature Physics 11, 482-486 (2015).
  - High-performance n-type black phosphorus transistors with type control via thickness and contact-metal engineering', Nature Communications 6, 7809 (2015)
  - 'Misorientation-angle-dependent electrical transport across molybdenum disulfide grain boundaries', Nature communications 7, 10426 (2016)
  - Efficient Reduction of Graphite Oxide by Sodium Borohydride and Its Effect on Electrical Conductance', Adv. Functional Materials 19, 1987 (2009).
  - 'Fully sealed, high-brightness carbon-nanotube field-emission display', Appl. Phys. Lett. 75, 3129-3131 (1999).

**Others**

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