

1. Personal Data

- Name in full : Young Hee Lee
- Date of Birth : July 28, 1955
- Gender : Male
- Position : Professor, SKKU fellow
 - Member of Korea Academy of Science and Technology (KAST)
 - Director of IBS, Center for Integrated Nanostructure Physics (CINAP)
 - Fellow of The Third World Academy of Sciences (TWAS)
- Address : Department of Physics, Department of Energy Science, SUNGKYUNKWAN University (SKKU), Suwon, 16419, Korea
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- Homepage : <http://shb.skku.edu/nanotube>
- Homepage : <http://cinap.ibs.re.kr/>
- Nationality : Republic of Korea



2. Educational background

- 1976 ~ Feb. 1982 : B. S. in Physics, Chonbuk National University, Korea,
- 1982 ~ Feb. 1986 : Ph. D. in Physics, Kent State University, U. S. A.
Ph.DThesis: Classical and Quantum Computer Simulation Studies:Molecular Dynamics of the Kerr Effect in CS₂ and Green's Function Monte Carlo Calculation of the Electronic Correlation Energy in Atoms(thesis advisor: Michael A. Lee)

3. Research interests

- **Material synthesis:** Carbon nanotubes, large-area monocrystalline graphene CVD, graphene oxides, van der Waals h-BN, transition metal dichalcogenides, and metals
- **Properties interests:** Optoelectronic/thermal/photo-thermoelectric properties, topological insulators, valleytronics, carrier multiplications/hot carrier dynamics, van der Waals Coulomb drag, 2D magnetism, energy harvesting (asymmetric supercapacitors, ORR/OER/HER)

4. Work History

- 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
- 2007 ~ Present: Korea Academy of Science and Technology (KAST), Fellow
- 1987 ~ 2001. 2: 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, Iowa State University Ames National Laboratory, U.S.A.

5. Scientific Activities

- 2016.01 ~ Present. : Associate Editor of ACS Nano
- 2016.01 ~ 2017.12. : Associate Editor of European Physics Letters
- 2015.05 ~ 2017.12. : Associate Editor of Energy Storage Materials.
- 2015.05 ~ 2017.12. : Associate Editor member of Scientific Reports.
- 2009.11 ~ 2015. : Associate Editor of European Physical Journal: Appl. Phys.
- 2000 ~ Present : Associate Editor of Carbon Letters
- 2006 ~ 2010 : Managing Editor of NANO
- 2009 ~ present : International Advisory Committee of nanotube conference
- 2008 ~ 2010: Conference chair of SPIE conference
(Carbon Nanotubes, Graphene, and Associated Devices III)
- 2010 ~ 2010: Program Committee of IEEE NANO 2010
- 2012: Organizer of 2012 MRS Fall Meeting Symposium W(Carbon Nanomaterials)
- 2015: Organizer of 2015 MRS Fall Meeting Symposium EE(Beyond Graphene-2D Materials and Their Applications)
- 2008 ~ Present: Program Committee of IWEPM
- 2010 ~ Present: Materials Research Society Member
- 2009 ~ Present: Program Committee of Korea Carbon Society
- 2001~ Present: The Korean Physical Society Fellow
- 2001 ~ 2006 : Associate Editor of Journal of Nanoscience and Nanotechnology

6. Honors and Awards

- 1997. 05. Award from Foundation of Korea Science and Technology for

' The Best Paper in Physics '

- 1997. 06. Nominated for 'Man of Jeonbuk National University' in 50th Anniversary in Science
- 1999. 09. Nominated for 'Man of Jeonbuk State', in Academia and public press.
- 2004. 09. First fellow of Sungkyunkwan University
- 2005. 04. Science Award from Korean Physical Society
- 2005. 12. Nominated as 'The National scholar', by Ministry of Education
- 2006. 08. Nominated as 'The Most Respectable Scientists & Engineers', by Ministry of Education
- 2007. 09. Fellow of Sungkyunkwan University
- 2007. 12. Lee Hsun Research Award, IMR, Chinese Academy of Sciences, China
- 2008. 05. Presidential Award in Science and Education
- 2012. 12. SKKU Family Award from Sungkyunkwan University
- 2014. 05. Award from ' The 23rd SUDANG Prize'
- 2016. 12.
- 2017. 05 : Einstein Award, Distinguished Scientists Award 2017 (CAS President's International Fellowship Initiative, China)
- 2018.11 : 2018 Highly Cited Researchers(top 1% by citation for field and year, Web of Science) Clarivate Analytics
- 2019.11 : 2019 Highly Cited Researchers(top 1% by citation for field and year, Web of Science) Clarivate Analytics
- 2019.11 : Award from ' The 15th KYUNG AM Prize'

7. Research projects conducted(recent ten years, representatives only)

- 2009. 10 ~ 2010. 12 : High mechanical strength Al/CNT composites for car wheel/
₩138,000,000 /MKE
- 2005. 12 ~ 2010. 11 : Design of electronic structures of carbon nanotubes and their applications/ ₩248,000,000/ Star-Faculty Project, MEST
- 2010. 03 ~ 2011. 03 : Development of heat sink plate using vertically aligned multiwalled carbon nanotubes for LED / ₩ 60,000,000 /MK Electron co. Ltd.
- 2010. 06 ~ 2011. 06 : Synthesis of large-scale graphene of low defect and low temperature/ ₩120,000,000 / Samsung Advanced Institute of Nanotechnology
- 2010. 10 ~ 2011. 09 : Improvement of the Electrical Conductivity of Carbon Nanotubefilm / ₩80,000,000/ MKE
- 2010. 12 ~ 2011. 11 : Development of Flexible CNT-TCF/CNT-TFT/₩70,000,000/ Samsung SMD
- 2009. 10 ~ 2012. 10 : Nanocomposite / ₩ 50,000,000(1year)/Daeyoo Co.
- 2010. 12 ~ 2012. 11 : Design of electronic structures of carbon nanotubes and their

- applications/ ₩260,000,000(1year)/ Star-Faculty Project, MEST
- 2008. 12 ~ 2012. 11 : New paradigm of energy science convergence/ ₩ 50,000,000(1year) / WCU Project, MEST
 - 2011.12 ~ 2012. 11 : bandgap engineering in bilayer graphene via chemical doping / ₩80,000,000/ Samsung Advanced Institute of Nanotechnology
 - 2011.12 ~ 2012. 11 : Observation of graphene grain boundary through optical microscopy / ₩80,000,000/ Samsung Advanced Institute of Nanotechnology
 - 2010. 05 ~ 2013. 04 : Large area graphene synthesis and its applications/ ₩70,400,000(1year) / US-Airforce, MEST
 - 2010. 06 ~ 2013. 05 : Development of thermal insulating window frames using nanocomposite material / ₩240,000,000(1year) / MKE
- 2012- present : Center for Integrated Nanostructure Physics (CINAP), 10M USD per year

8. Publications and patents

Domestic / International	Papers		Patents		Presentation		Book chapter
	Domestic (SCI)	International (SCI)	Domestic (registered)	International (registered)	Domestic (invited)	International (invited)	
	48 (25)	523 (503)	132 (91)	60 (17)	554 (63)	864 (202)	7

- Nature 1, Nature Materials 1, Science 4, Nature Physics 2, Nature Communications 12, Proc. Nat. Acad. Sci. 1, Nano Letters 18, Physical Review Letters 9, Journal of American Chemical Society 16, Advanced Materials 30, Advanced Functional Materials 12, ACS NANO 46, Applied Physics Letters 32, Phys. Rev. B 28
- Cover page papers : Adv. Mater. 4, AFM 2, PSSB 1, JPCC 1, NANO 3, JMC 1
- Total number of papers cited more than 100 times (WoS, Jan. 2020): 90
- Total number of SCI citations: over 38,317 (WoS, Jan. 2020)
- H-index : 95 (WoS, Jan. 2020)

Prof. Lee has been a full professor of the Physics Department at SKKU, since 2001. He received Ph. D. from Kent State University in Ohio (1986) in physics. Prior to joining SKKU in 2001, Prof. Lee was a full professor in the Physics Department at Chonbuk National University since 1986. He was a visiting scholar at Ames Laboratory, Iowa State University in 1989, IBM, Zurich in 1993, and Michigan State University in 1996. Currently, he is the Director of Center for Integrated Nanostructure Physics, Institute for Basic Science at SKKU. He serves for an Associate Editor of ACS Nano. He was awarded the first SKKU fellow in

2004 at SKKU, Science award from Korean Physical Society in 2005, Lee Hsun Research Award, IMR, Chinese Academy of Sciences, China in 2007, Presidential Award in Science and Education in 2008 and Einstein Award IMR, Chinese Academy of Sciences, China in 2017. He was also nominated as a National Scholar by Ministry of Education in 2006 and has been a fellow of Korean Academy of Science and Technology since 2007. He recently got Sudang prize in 2015 and Kyung Am prize in 2019.

Prof. Lee's work has focused on understanding the fundamental properties of nanostructures in 0D, 1D, 2D and their hybrid heterostructures, design and synthesis of various heterostructures to implement unique physical and chemical properties. His research covers carrier dynamics, carrier multiplication phenomena, hot carrier solar cell, thermoelectrics, quantum mechanical tunneling phenomena, and nanocarbon-based soft electronics. His pioneering works on synthesis and engineering of electronic and atomic structures of carbon nanotubes and graphene, other 2D materials and their applications to electronic devices, and energy harvesting have led not only nanoscience but also nanotechnology industry in Korea. He has published more than 523 scientific papers in international journals and his total citation number exceeds over 91,000 times with H-index of 125 (Google Scholar, January 2020).