PHILIP KIM

Harvard University Department of Physics
11 Oxford Street, LISE 410, Cambridge, MA 02138
Tel: (617) 496-0714; Fax: (617) 495-0416
E-mail: pkim@physics.harvard.edu; Webpage: kim.physics.harvard.edu

Education and Training

Seoul National University	Physics	B.S.	1990
Harvard University	Applied Physics	M.A.	1996
Harvard University	Applied Physics	Ph.D.	1999
University of California, Berkeley	Physics	Post-Doctoral Fellow	1999-2001

Appointments

2014 –	Professor, Department of Physics, Harvard University
2009 – 2014	Professor, Department of Physics, Columbia University
2006 – 2009	Associate Professor, Department of Physics, Columbia University
2002 – 2006	Assistant Professor, Department of Physics, Columbia University
1999 – 2001	Miller Postdoctoral Fellow in Physics, University of California, Berkeley

Honors and Awards

Elected member of the American Academy of Arts and Science (2020); Tomassoni-Chisesi Prizes (2018); Vannevar Bush Faculty Fellowship (2018); Experimental Investigator in Quantum Materials Award, Moore Foundation (2014); Oliver E. Buckley Prize, American Physical Society (2014); Dresden Barkhausen Award (2012); Member of Korean Academy of Science and Technology (2011); Scientist of the Year, Korean-American scientists and Engineers Association (2011); Proud Korean Award, Korean American Leadership Foundation (2011); IBM Faculty Award (2009); Ho-Am Science Prize (2008); American Physical Society Fellow (2007); Columbia University Distinguished Faculty Award (2007); Recipient Scientific American 50 (2006); National Science Foundation Faculty Career Award (2004); Outstanding Young Researcher Award, Association of Korean Physicists in America (2002); Miller Research Fellowship, University of California at Berkeley (1999-2001);

Publications

Total Publications (More than 256 publications including Nature (10), Science (18), Nature Phys. (11), Nature Nanotech (12), Nature Materials (3), Phys. Rev. Letts (43), Nano Lett. (32), PNAS (6).
Total Citation (More than 110,000, h-index: 111 according to Google Scholar).

Selected Recent Publications:

1. Y . Ronen, T. Werkmeister, D. Najafabadi, A. T. Pierce, L. E. Anderson, Y. J. Shin, S. Y. Lee, Y. H. Lee, B. Johnson, K. Watanabe, T. Taniguchi, A. Yacoby, P. Kim, "Aharonov Bohm Effect in Graphene Fabry Perot Quantum Hall Interferometers," Nature Nano, *in press* (2021).
2. Z. Hao, A. M. Zimmerman, P. Ledwith, E. Khalaf, D. H. Najafabadi, K. Watanabe, T. Taniguchi, A. Vishwanath, P. Kim, "Electric field tunable unconventional superconductivity in alternating twist magic-angle trilayer graphene," Science **371**, 1133-1138 (2021).
3. X. Liu, Z. Hao, E. Khalaf, J. Y. Lee, Y. Ronen, H. Yoo, D. H. Najafabadi, K. Watanabe, T. Taniguchi, A. Vishwanath, P. Kim, "Tunable Spin-polarized Correlated States in Twisted Double Bilayer Graphene," Nature **583**, 221-225 (2020).
4. L. A. Jauregui, A. Y. Joe, K. Pistunova, D. S. Wild, A. A. High, Y. Zhou, G. Scuri, K. De Greve, A. Sushko, C.-H. Yu, T. Taniguchi, K. Watanabe, D. J. Needleman, M. D. Lukin, H. Park, P. Kim, "Electrical control of interlayer exciton dynamics in atomically thin heterostructures," Science **366**, 870-875 (2019).

5. X. Liu, Z. Hao, K. Watanabe, T. Taniguchi, B. Halperin, P. Kim, "Interlayer fractional quantum Hall effect in a coupled graphene double-layer," Nature Physics **15**, 893-897 (2019).
6. S.Y. F. Zhao, N. Poccia, M. G. Panetta, C. Yu, J. W. Johnson, H. Yoo, R. Zhong, G.D. Gu, K. Watanabe, T. Taniguchi, S. V. Postolova, V. M. Vinokur, P. Kim, "Sign reversing Hall effect in atomically thin high temperature superconductors," Phys. Rev. Lett. **122**, 247001 (2019).
7. H. Yoo, R. Engelke, S. Carr, S. Fang, K. Zhang, P. Cazeaux, S. H. Sung, R. Hovden, A. W. Tsen, T. Taniguchi, K. Watanabe, G.-C. Yi, M. Kim, M. Luskin, E. B. Tadmor, E. Kaxiras and P. Kim, "Atomic and electronic reconstruction at van der Waals interface in twisted bilayer graphene," Nature Materials **18**, 448–453 (2019).
8. K. Wang, A. Harzheim, J. U. Lee, T. Taniguchi, K. Watanabe, P. Kim, "Tunneling Spectroscopy of Quantum Hall States in Bilayer Graphene PN Networks," Phys. Rev. Lett. **122**, 146801 (2019).
9. D. K. Bediako, M. Rezaee, H. Yoo, D. T. Larson, S. Y. F. Zhao, T. Taniguchi, K. Watanabe, T. L. Brower-Thomas, E. Kaxiras, P. Kim, "Heterointerface effects in the electro-intercalation of van der Waals heterostructures," Nature **558**, 425–429 (2018)
10. K. Wang, K. De Greve, L. A. Jauregui, A. Sushko, A. High, Y. Zhou, G. Scuri, T. Taniguchi, K. Watanabe, M. D. Lukin, H. Park, P. Kim, "Electrical Control of Charged Carriers and Excitons in Atomically Thin Materials," Nature Nanotechnology **13**, 128–132 (2018)

Synergistic activities:

1. More than 300 keynote speeches, plenary speakers, and invited presentations in academic institutes, industrial institutes, international conferences.
2. Symposium Organizers: the focus session, APS March Meeting, 2004; the focus session, "Thermal, thermoelectric and mass transport at nanoscale" at APS March Meeting, 2006 and the Tutorial session "Graphene Physics;" APS March Meeting, 2007, Advocator of Carbon Electronics; Focused Session Organizers APS March Meeting 2010, Graphene Week 2012. Nano Architech Panel Discussion member 2012, Valleytronics Workshop 2017
3. Advisory Board: ITRS Workshop in 2008, International Advisory Board of ICPS 2010, 2012; Nanotube 2012, Elected Members at Large in APS, 2013-15
4. Associate Editor: Nano Letter, American Chemical Society
5. Visiting Chaired Professor in Sungkyunkwan University (SKKUU) (3/2019-present), Seoul National University (3/2012-2/2019) and Ulsan National Institute of Science and Technology, Korea (3/2012-2/2019); Member of Korean Academy of Science and Technology (2011-); Consulting Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering (2018-).

Collaborators and Co-Editors (48 months): Amir Yacoby (Harvard); Tina Brower-Thomas (Howard); Ke Wang (Minnesota); Robert Westervelt (Harvard); Abhay Pasupathy (Columbia); Kenji Watanabe (NIMS); Takashi Taniguchi (NIMS): Mikito Koshino (Osaca); Federico Capasso (Harvard); Mikhail Lukin (Harvard) Hongkun Park (Harvard); Luis Brus (Columbia); Xavier Roy (Columbia); Cory Dean (Columbia); Dimitry Basov (Columbia); Misha Fogler (UCSD); Dmitri Efetov (IFCO); Kin Chung Fong (BBN); James Hone (Columbia); Bertrand Halperin (Harvard); Gil-Ho Lee (POSTECH); Moon-Ho Jo (POSTECH); Colin Nuckolls (Columbia); Chery Kagan (UPenn); Sang-Jin Sin (Hanyang); Subir Sachdev (Harvard); Jayakanth Ravichandran (USC); Robert Hovden (Michigan); Gyu-Chul Yi (SNU); Pulickel Ajayan (Rice); Kaustav Banerjee (UCSB); Luigi Colombo (Texas Instrument); Rodney Ruoff (UNIST); Mathew Foster (Rice); Boris Yakobson (Rice) Richard Heller (Harvard)

Graduate student advisor: Charles M. Lieber (Harvard).

Postgraduate-scholar sponsor: Paul L. McEuen (Berkeley, now at Cornell).