

## Short Curriculum Vitae

### Steven G. Louie

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### PERSONAL DATA:

Born March 26, 1949, in Taishan, Guangdong, China; naturalized U.S. citizen, 1961; married with three children

### EDUCATION:

- University of California at Berkeley, Ph.D. in Physics, 1976
- University of California at Berkeley, A.B. in Physics and Mathematics, 1972

### SCIENTIFIC CAREER:

- Professor of Physics, University of California, Berkeley, 1984-present
- Founding Director, Center for Computational Study of Excited-State Phenomena in Energy Materials (C2SEPEM), Lawrence Berkeley National Laboratory, 2016-present
- Senior Faculty Scientist, Lawrence Berkeley National Laboratory, 1993-present
- Scientific Director, Theory Facility, the Molecular Foundry, 2001-2011
- Faculty Scientist, Lawrence Berkeley National Laboratory, 1981-93
- Associate Professor of Physics, University of California, Berkeley, 1980-84
- Assistant Professor of Physics, University of Pennsylvania, 1979-80
- Visiting Scientist, AT&T Bell Laboratories, Murray Hill, 1979
- Postdoctoral Fellow, I.B.M. Watson Research Center, 1977-79
- NSF Postdoctoral Fellow, University of California, Berkeley, 1976

### SELECTED HONORS/AWARDS (reversed chronological order):

- H.C. Ørsted Lecturer, Technical University of Denmark, Denmark, 2017
- 2017 Jubilee Professorship, Chalmers University of Technology, Sweden, 2016
- Materials Theory Award of the Materials Research Society (MRS), 2015
- Inaugural Simons Fellow in Theoretical Physics, Simons Foundation, 2012
- Member, American Academy of Arts & Sciences, 2009
- Academician, Academia Sinica, Republic of China (Taiwan), 2008
- Mork Family Distinguished Lecturer, University of Southern California, 2008
- Distinguished Research Chair Professor, National Taiwan University, Taiwan, 2007-10
- Fellow, American Association for the Advancement of Science, 2006
- Closs Lecturer, University of Chicago, 2006
- Member, National Academy of Sciences, 2005
- Richard P. Feynman Prize in Nanotechnology (Theory), Foresight Institute, 2003
- Davisson-Germer Prize in Surface Physics, American Physical Society, 1999
- Aneesur Rahman Prize for Computational Physics, American Physical Society, 1996
- Sustained Outstanding Research in Solid State Physics Award, U.S. Dept of Energy, 1993
- Municipal Chair Professor, Joseph Fourier University, France, 1990
- John S. Guggenheim Foundation Fellow, 1989-90
- Eminent Visiting Scholar, University of Tokyo, 1989
- Professor, Miller Institute for Basic Research in Science, 1986-87, 1995
- Fellow, American Physical Society, 1985
- Alfred P. Sloan Foundation Fellow, 1980-82

## PRINCIPAL RESEARCH INTERESTS

Theoretical condensed matter physics and nanoscience: electronic and structural properties of solids, surfaces, interfaces and clusters; quasiparticle and optical excitations; many-body effects in bulk and reduced-dimensional systems; graphene and graphene nanoribbons; carbon and BN nanotubes; quasi-2D materials beyond graphene; superconductivity; topological phases in matter; electron transport through nanostructures.

## SCHOLARLY CONTRIBUTIONS

- More than **600** scientific publications, with over **60,900** ISI Web of Science citations and an **h-index** of **120**, as of November 2017 (over **85,000** citations and **h-index** of **140** on Google Scholar). Yearly number of WofS citations is currently at >4,500/year.
- Identified by the ISI Web of Science as one of the most highly cited researchers in physics, and one of the 25 most highly cited authors in nanoscience.
- Publications include **11** *Nature*, **8** *Science*, **129** *Phys. Rev. Lett.*, **5** *Nature Phys.*, **5** *PNAS*, **3** *Nature Materials*, **7** *Nature Nanotech.*, **4** *Nature Commun.*, **26** *Nano Lett.*, **5** *ACS Nano*, **4** *Applied Phys. Lett.*, **232** *Phys. Rev. B* articles, etc.
- Awarded **7** U.S. patents
- Authored the textbook (with M.L. Cohen): *Fundamentals of Condensed Matter Physics* (Cambridge University, 2016). Co-editor of **3** additional books: *Quantum Theory of Real Materials* (Kluwer, 1996); *The Optical Properties of Materials*, MRS Symp. Proceed. Vol. 579 (MRS, 2000); *Conceptual Foundations of Materials: A Standard Model for Ground- and Excited-State Properties* (Elsevier, 2006).
- Originator of **3** widely-use *ab initio* computational materials software packages: the density functional theory code “PARATEC”, the many-body excited-state properties code “BerkeleyGW”, and the Wannier functions electron-phonon coupling code “EPW”. All are available freely to users worldwide.
- More than **500** invited talks at conferences, universities and research institutions.
- Supervised **36** PhD students and over **50** postdoctoral fellows.

## SELECTED PROFESSIONAL AND SERVICE ACTIVITIES (SINCE 2005)

Professor Louie is the Founding Director of the Center for Computational Study of Excited-State Phenomena in Energy Materials (C2SEPEM) at LBNL. He was a founding scientific director of the Molecular Foundry until 2011, and an editor of *Solid State Communications*, 1994-2011. He served on numerous national/international committees, panels, and boards. Selected recent activities include: Executive Committee of the American Physical Society (APS) Div. of Materials Physics, 2005-08; APS Adler Award Committee, 2005; Visiting Committee, ISSP, U of Tokyo, 2005; Class Membership Committee, National Academy of Sciences (NAS), 2006-09; Organizer, U.S.-Taiwan Workshop on Nanoscience, 2006; Advisory Committee of the Inst. of Atomic and Molecular Sciences, Academia Sinica, Taiwan, 2007-2010, chair 2010-; Science Council, Asia Pacific Center for Theoretical Physics, Korea, 2009 -; Scientific Committee, Cariplo Foundation (Italy), 2009–2014; DOE-BES Review Panel, Ames National Lab, 2010; Physical Sciences Panel, Research Grants Council, Hong Kong, 2010 - 2017; Visiting Member, Inst. of Advanced Study, Hong Kong U of Science & Techn., 2011 -; Chair, NAS Class III International Temporary Nominating Group, 2011-; Organizer, 15th Intern. Conf. on Science and Application of Nanotubes (NT14), 2012–14; Senior Advisory Council, Molecular Foundry, LBNL, 2012–; Search Committee, President of Asian Pacific Center for Theoretical Physics, South Korea, 2012-2013; External Review Board, Area of Excellence Centers, Hong Kong, 2012—; DOE-BES Review Panel, Oak Ridge National Lab, 2012; NAS Baker Award Committee, 2013; Organizer, 17<sup>th</sup> Int. Workshop on Computational Physics & Materials Science, ICTP, Italy, 2015; Int. Scientific Advisory Board of the Institut Catala de Nanociencia i Nanotecnologia (ICN2), Spain, 2015-; Staff Committee, Materials Sciences Division, LBNL, 2016-; Chair, Int. Advisory Committee, Center for Theoretical and Computational Physics, University of Hong Kong, 2016-present; Int. Advisory Committee, National Center for Theoretical Sciences, Taiwan, 2016-present; External Visiting Committee, Department of Physics, Hong Kong Baptist University, Hong Kong, 2016; Search Committee, Director of Institute for Atomic and Molecular Sciences, Academia Sinica, Taiwan, 2016-17; Co-organizer, NSF-MoSSI Workshop on Materials Software, 2016-2017; Chair, Senior Staff Scientist Ad Hoc Review Committee, LBNL, 2017; among others.