

Chenming Hu

TSMC Distinguished Professor Emeritus
University of California, Berkeley
<http://www.eecs.berkeley.edu/~hu/>



Education

B.S., EE, National Taiwan University 1968
M.S./Ph.D., University of California, Berkeley 1970/73

Occupational Experiences

- 1973-1976, Assistant Professor, Massachusetts Institute of Technology
- 1976-Present, Professor of Electrical Engineering, Univ. of California, Berkeley
- 1995-2003, Founder and Chairman of Board, Celestry Design Technologies Inc.
- 2001-2004, Chief Technology Officer, TSMC (Taiwan Semiconductor Manufacturing Company)
- 2009-Present, Member of Board of Directors, SanDisk, Inc. and other public companies.

Volunteer Leadership

- 1990-1992 Chairman of nonprofit East Bay Chinese School, Oakland, CA.
- 2009-2015 Board Member of 80-20 National Asian American PAC
- 2007-Present, Board Member and Chair, non-profit Friends of Children with Special Needs, Fremont, CA.

Highlights

- [Received from Pres. Obama](#) the US National Medal of Technology and Innovation in May 2016 "For pioneering innovations in microelectronics including reliability technology, the first industry-standard model for circuit design, and the first 3-dimensional transistor, which radically advanced semiconductor technology". See [video](#).
- Developed 3D transistor FinFET in [1999](#) and [FDSOI\(UTBSOI\)](#) in 2000 under DARPA support. Intel began to use FinFET in 2011 calling it the [most radical](#) shift in semiconductor technology in over 50 year. Today, all top computers, servers and cell phones use FinFET processors. FDSOI is gaining attraction.
- 2013 Kaufmann Award [cites](#) "a tremendous career of creativity and innovation that fueled the past four decades of the semiconductor industry including the recent adoption of FinFETs by major semiconductor manufacturers, which will propel the industry to its next decade" .
- [Honorary Doctoral Degree](#), National Chiao-Tung University, Taiwan, 2012.
- Asian American [Engineer of the Year](#) Award cites industry standard transistor model BSIM "used in designing IC products with cumulative sales of many hundreds of billions of dollars" in 2011.
- Semiconductor Industry Association award and appreciation for "[advancement](#) of the US semiconductor industry and the national economy" in 2011.
- IEEE announcement: "CHENMING HU, MICROELECTRONICS [VISIONARY](#), To receive 2009 IEEE NISHIZAWA MEDAL--Achievements Have Been Critical to

Producing Smaller Yet More Reliable and Higher-Performance Integrated Circuits"

Honors and Awards

National Academy Inductions:

- US National Academy of Engineering, 1997.
- Academia Sinica, Taiwan, 2004.
- Chinese Academy of Sciences, 2007.
- The World Academy of Sciences, 2012.

Research Innovation Awards:

- National Medal of Technology and Innovation presented by Pres. Obama, 2016.
- National Academy of Inventors, 2015.
- SEMI Award for "BSIM families of compact transistor models", 2015.
- EDA Industry Consortium Phil Kaufman Award for "distinguished contributions to electronic design automation", 2013.
- Honorary Doctoral Degree, National Chiao-Tung University, Taiwan, 2012.
- Outstanding Alumni Award, National Taiwan University, 2012.
- ISDRS Aldert van der Ziel Award for "a distinguished career in education and research", 2011.
- Semiconductor Industry Association University Research Award, 2011.
- Asian American Engineer of the Year (AAEOY) for lifetime achievements, 2011.
- IEEE Nishizawa Medal for "exceptional contributions in IC device scaling, modeling, and reliability", 2009.
- IEEE Solid State Circuits Award (for the first industry-standard transistor model, used in the design of most of integrated circuits since 1997), 2003.
- DARPA Most Outstanding Technical Accomplishment Award (for the "**radically innovative**" FinFET), 2000.
- W.Y. Pan Foundation Award for distinguished research in electronics, 1999.
- IEEE Andy Grove Award for outstanding contributions to semiconductor devices and technology, 1997.
- R&D100 Award (BSIM3 as one of the most significant new technologies), 1996.
- SRC (US semiconductor industry consortium) inaugural Research Excellence Award for IC reliability physics and models, 1992.
- Design News Excellence in Design Award for IC reliability simulator BERT, 1991.
- Fellow, Institute of Electrical and Electronics Engineers, for hot-electron reliability physics of MOS transistors, 1989.

Education Awards:

- Education Award, IEEE Electron Device Society, for "distinguished contribution to **education** and **inspiration** of students, practicing engineers and future educators in semiconductor devices", 2011.
- Berkeley Citation (for outstanding services to UC Berkeley), 2011.
- SRC Aristotle Award (for outstanding mentoring of student researchers), 2009.
- Honorary Professor of Chinese Academy of Science (since 1990), National Chiao-Tung University (since 2001), National Taiwan University (since 2011).
- TSMC Distinguished Chair Professor, UC Berkeley, 2001-2013.
- Chancellor's Chair Professor, UC Berkeley, 1998-2001.

- Moni Ferst Award, Sigma Xi (for promotion of research through education), 1998.
- Berkeley Distinguished Teaching Award (**highest honor for teaching**), 1997.

Other Accomplishments

Teaching: Educated thousands of students and over 100 Ph.D. advisees, postdocs and industry visiting researchers.

Publications: Five books and 1000 research papers.

Patents: Over 140 US patents granted.