

Chenming Calvin Hu

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Positions Held

- 1976-Present, Professor of Electrical Engineering and Computer Sciences, University of California, Berkeley
- 2001-04, Chief Technology Officer, TSMC, world's largest IC foundry
- 1996-2003, Founder and Chairman of Board, Celestry Design Technologies, Inc. (acquired by Cadence Design Systems in 2003)
- 1973-1976, Assistant Professor, Massachusetts Institute of Technology
- Board director of SanDisk and nonprofit Friends of Children with Special Needs. Former board chairman of nonprofit East Bay Chinese School.

Education

B.S., EE, National Taiwan University, 1968

M.S. and Ph.D., EECS, University of California, Berkeley, 1970 and 1973

Recent News

- [FinFET](#) was announced to industry [acclaim](#) in 1999. Intel is the [first](#) company to use FinFET in 2011 calling it the [most radical](#) shift in semiconductor technology in over 50 year. Other companies are expected to do the same.
- [2011 Asian American Engineer of the Year Award](#) cites the first industry standard transistor model "used in designing IC products with cumulative sales of many hundred billion dollars".
- ["CHENMING CALVIN HU, MICROELECTRONICS VISIONARY, TO RECEIVE 2009 IEEE JUN-ICHI NISHIZAWA MEDAL"](#)
Achievements Have Been Critical to Producing Smaller Yet More Reliable and Higher-Performance Integrated Circuits..."

Honors and Awards

National Academy Memberships

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

Research Awards

- Asian American Engineer of the Year Award, 2011
- University Research Award of Semiconductor Industry Association for research leadership advancing electronics industry and our national economy, 2011
- ISDRD Aldert van der Ziel Award in electronic devices and materials, 2011
- National Taiwan University Distinguished Alumni Award, 2011
- IEEE Jun-ichi Nishizawa Medal (for exceptional contributions in IC device scaling, modeling, and reliability), 2009.
- IEEE Paul Rappaport Award, 2003.

- IEEE Solid State Circuits Award (for developing the first international standard transistor model BSIM), 2002.
- IEEE Jack Morton Award (for outstanding contributions to semiconductor devices and technology), 1997.
- DARPA Most Outstanding Technical Accomplishment Award (for FinFET), 2000.
- W.Y. Pan Foundation Award (for Distinguished Research in Electronics), 1999.
- BSIM chosen as world's first transistor model standard for IC design, 1997.
- R&D100 Award (BSIM3 as one of the most significant new technologies), 1996.
- SRC inaugural Research Excellence Award, 1992.
- Design News Magazine 1991 Excellence in Design Award (for pioneering IC reliability simulation software), 1991.
- Fellow, Institute of Electrical and Electronics Engineers, 1989-.

Education Awards

- Berkeley Citation for Distinguished Services to UC Berkeley, 2011
- IEEE EDS Education Award (for distinguished contributions to education and inspiration of students, practicing engineers and future educators), 2011
- Honorary Distinguished Chair Professor, Graduate Institute of Electronics Engineering, National Taiwan University, 2011
- SRC Aristotle Award (for outstanding mentoring of student researchers), 2009.
- TSMC Distinguished Professor Chair, Univ. of Calif., Berkeley, 2001-.
- Honorary Professor, National Chiao-Tung University, Taiwan, 2001-.
- Chancellor's Professor Chair, University of California, Berkeley, 1998-2001.
- Sigma Xi Moni Ferst Award (for promotion of research through education), 1998.
- Berkeley Distinguished Teaching Award (Berkeley's highest honor for teaching), 1997.
- Life Honorary Professor, Chinese Academy of Science, China, 1990-.

Publications

Four books and 900 research papers on semiconductor, integrated circuits technology, solar cells.

Patents

Over 100 US patents granted.

Additional Information

- Managed the most advanced R&D operation at TSMC, world's largest IC foundry company. (NYSE: TSM)
- Led the development of world's first industry standard transistor model for circuit simulation and put it in the public domain. It has been used by most IC companies worldwide in the design of ICs with cumulative product value of hundreds of billions of US dollars.
- Contributed to green technology research in solar cell, hybrid car, energy efficient electronics, tunnel green transistor, and FinFET transistor enabling the scaling of transistors from 2011 onward.
- Created widely used IC reliability models for hot carrier effects, thin dielectrics, and AC electromigration.
- Taught thousands of classroom and research students.