

# Yuhwa Lo

## A. PROFESSIONAL PREPARATION

National Taiwan University	Electrical Engineering	B.S.	1981
UC Berkeley	Electrical Engineering	M.S.	1986
UC Berkeley	Electrical Engineering	Ph.D.	1987

## B. APPOINTMENTS

2015-Present	Director, San Diego Nanotechnology Infrastructure (SDNI), NSF National Nanotechnology Coordinated Infrastructure (NNCI).
2006-Present	Director, Nano3 (Nanoscience, Nanoengineering, Nanomedicine) Facility, California Institute of Technology and Information Technology (CALIT2)
1999-Present	Professor, Electrical and Computer Engineering Department, UCSD, CA
1997-1999	Associate Professor, School of Electrical Engineering, Cornell University.
1991-1996	Assistant Professor, School of Electrical Engineering, Cornell University.
1987-1990	Member of Technical Staff, Bellcore, Red Bank, New Jersey

## C. PERSONAL STATEMENT

Lo's laboratory is focused on two research areas: (a) advanced nanodevices and photonics and (b) biomedical devices.

Lo's group has a long history of creating innovative and high performance semiconductor optoelectronic material and device technologies over the past few decades. Recently his lab was focused on devices that can detect single photons to explore the ultimate frontier for optical communications, imaging, and sensing. One significant recent contribution from his lab was the discovery and demonstration of a unique physical mechanism, cycling excitation process (CEP), that can amplify the photocurrent with unprecedented efficiency and ultralow noise approaching the quantum limit. American Institute of Physics has issued a press release on the discovery of the CEP effect and Nature magazine has highlighted the research for its broad scientific and technology impact.

The goal of biomedical research in his lab is to invent enabling devices and technologies to promote health and advance fundamental research in life sciences. To realize this goal, his group explores microfluidics, microacoustics, and biophotonic technologies for biomedical applications. His lab demonstrates and commercializes high performance, low cost, and highly functional medical devices to benefit point-of-care diagnostics, cancer research, vision restoration, genetics and epigenetics. The on-going projects include lab-on-a-chip nucleic acid detection for in-vitro diagnosis, lab-on-a-chip single-cell technology, microfluidic flow cytometer and cell-sorter, protein-ligand and protein-protein interactions, and circulating miRNAs and cell-free DNAs.

To perform multidisciplinary research, Lo maintains a research team of over 20 PhD students, postdoctoral researchers, and research scientists of diverse background in electrical engineering, bioengineering, material sciences, applied physics, chemistry, and biology, with research supports from NSF, NIH, DoD, and private sectors.

## D. SELECTED OTHER POSITIONS HELD:

Co-Founder, Nova Crystals (1998-2003)  
Co-Founder, Rhevision Technology (2006 – 2010)  
Co-Founder, NanoCollect, Inc. (2010 – present)  
Scientific Advisor, Cellgen DX, Inc. (2013-)  
Scientific Advisor, Nanovision Biomedical (2014-)

Scientific Advisor, VOR, Inc. (2014-)  
Scientific Advisor, Cenezyme, Inc. (2015-)

**E. SELECTED HONNORS:**

National Science Foundation CAREER award, 1995  
Lilly Foundation Fellow, 1995  
Cornell University College of Engineering Teaching awards, 1995, 1998  
Indium Phosphide and Related Materials (IPRM) best paper award, 1998  
Fellow, Optical Society of America, 2005  
Fellow, Institute of Electrical and Electronics Engineers, 2006  
Von Liebig Entrepreneurship award, 2006  
NASA Innovation award, 2008  
ACS Best Paper Award, 2015

**F. PUBLICATIONS:**

Lo has published around 400 peer-reviewed articles in scientific journals and (co)authored 11 book chapters. He was awarded 33 patents with dozens of applications pending.