

Luke P. Lee  
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## EDUCATION

B.A. <i>Biophysics</i>	UC Berkeley	1996
Ph.D. <i>Applied Science &amp; Technology</i>	UC Berkeley	2000
Major: <i>Applied Physics</i> , Minor: <i>Bioengineering</i>		

## APPOINTMENTS

University of California, Berkeley:		
<i>Lloyd Distinguished Professor of Bioengineering</i>		2005-present
<i>Assistant &amp; Associate Professor</i>		1999-present
<i>Director, Biomolecular Nanotechnology Center</i>		2002-present
<i>Co-Director, Berkeley Sensor &amp; Actuator Center</i>		1999-present
Biomedical Microdevices: <i>Associate Editor</i>		1999-present
IEE Nano-Biotechnology: <i>Editorial Board Member</i>		2003-present
Intel, Inc., Santa Clara, CA:		
<i>Consultant, Precision Biology Group</i>		2000-present
Samsung Electronic Co., <i>Advanced Institute of Technology</i> , Korea		
<i>Consultant, Digital Biotechnology Laboratory</i>		2002-present
Conductus, Inc., Sunnyvale, CA:		
<i>Member of Technical Staff</i>		1990-1996
TRW, Redondo Beach, CA:		
<i>Research Assistant / Member of Technical Staff</i>		1986-1990

## AWARDS and HONORS

*TRW* Roll of Honor (1989), Distinguished Achievement Award of *TRW* (1990), Alpha Gamma Sigma (1994), Golden Key National Honor Society (1995), The Regents Fellowship (1996), Doorae Fellowship (1997), Pacific Northwestern National Laboratory Fellowship (1997), The Regent's Junior Faculty Fellowship (2000), Invited Participant, *National Academy of Engineering Symposium, Frontiers of Engineering* (2000), Best Paper Award, *Lab Automation* (2002), Researcher of the Year by Small Times Magazine: Finalists (2002), Best Research Award, Industrial Advisory Board Meeting (2003), Invited Participant, *National Academy of Engineering Symposium, Third Japan-America Frontiers of Engineering*, (2003), NSF Career Awards (2003).

## PUBLICATIONS (related to this project)

1. Gang L. Liu, Jay Kim, Yu Lu, and Luke P. Lee, "Optofluidic control using photothermal nanoparticles," *Nature Materials*, **5**, 27-32 (2006).
2. Philip J. Lee, Paul J. Hung, Vivek M. Rao, Luke P. Lee, "Nanoliter scale microbio reactor array for quantitative cell biology," *Biotechnology & Bioengineering*, (published on line Nov 28, 2005)
3. G. L. Liu, Y. Lu, J. Kim, J. C. Doll, L. P. Lee, "Magnetic Nanocrescents as Controllable Surface-Enhanced Raman Scattering Nanoprobes for Biomolecular Imaging," *Advanced Materials*, Vol **17**, Issue 22, 2683 – 2688 (2005).

4. Jaeyoun Kim, Gang L. Liu, Yu Lu, and Luke P. Lee, "Intra-particle plasmonic coupling of tip and cavity resonance modes in metallic apertured nanocavities," *Opt. Express* **13**, 8332-8838 (2005).
5. Yu Lu, Gang L. Liu, Jay Kim, Yara X. Mejia, and Luke P. Lee, "Nanophotonic Crescent Moon Structures with Sharp Edge for Ultrasensitive Biomolecular Detections by Local Electromagnetic Field Enhancement Effect," *Nano Letters*, 5(1), 119-124 (2005).

#### **PUBLICATIONS (other significant)**

6. Luke P. Lee and Robert Szema, "Inspirations from Biological Optics for Advanced Photonic Systems," *Science*, Vol. **310**. no. 5751, pp. 1148 – 1150 (2005)
7. Cristian Ionescu-Zanetti, Robin M. Shaw, Jeonggi Seo, Yuh-Nung Jan, Lily Y. Jan, and Luke P. Lee, "Mammalian Electrophysiology on a Microfluidic Platform," *Proc. Natl. Acad. Sci. USA*, June 20 (2005).
8. Gang L. Liu and Luke P. Lee, "Time-Resolved Optical Sensing of Oligonucleotide Hybridization via Au Colloidal Nanoparticles," *Journal of Nanoscience and Nanotechnology*, **5**, 1933-1937 (2005).
9. Gang L. Liu, and Luke P. Lee, "Nanowell surface enhanced Raman scattering arrays fabricated by soft-lithography for label-free biomolecular detections in integrated microfluidics," *Applied Physics Letters* **87**, 074101 (2005).
10. Philip J. Lee, Paul J. Hung, Robin Shaw, Lily Jan, and Luke P. Lee, "Microfluidic Application Integrated Device for Monitoring Direct Cell-Cell Communication via Gap Junctions Between Individual Cell Pairs," *Appl. Phys. Lett.* **86**, 223902 (2005).

#### **SYNERGISTIC ACTIVITIES**

Outreach to the Hispanic and Afro-American Students: Professor Lee has served as a faculty mentor to engineering and science students from Hispanic and Afro-American background at UCB since 1999. He is actively involved with Berkeley HES (Hispanic Engineers & Scientists) club. Mentorship of students from these groups includes 2 undergraduate students and 1 graduate student.

Leadership in technical societies: Professor Lee has served as an associate editor of *Biomedical Microdevices* (1999- ); Co-chair of 1995 MRS Fall Meeting; Chair of IEEE MEMS conference (2001), Chair of BioMEMS & MEMS symposium of 2002 MRS Spring Meeting; Scientific committee member of Small Talk conference (Lab Automation Society) (2000- ); Co-chair of 2003 BMES Meeting.

Innovation in undergraduate and graduate education: Professor Lee has developed a new bioengineering course in "BioMEMS and BioNanotechnology" that has been taken by over 40 undergraduate and graduate students from five departments and three colleges.

#### **COLLABORATORS & OTHER AFFILIATIONS**

Collaborators: Abe Lee (UCI), Paul Alivisatos (UCB), Lily Y. Jan (UCSF), Robin Shaw (UCSF), Yang Dan (UCB), Ashwin A. Seshia (Cambridge University), Tim Sand (Purdue University), Daniel Chiu (U of Washington), Song Li (UCB), Al Pisano (UCB), Roger Howe (Stanford), Gabor Somorjai (UCB), Jeffrey Bokor (UCB), Andrew Berlin (Intel), and Murat Okandan (Sandia).

Graduate Advisors: Stanley Berger (UCB) and D. Liepmann (UCB)

Graduate Advisees: PhDs: K. Cheung (EPFL), S. Kwon (LBL), W. Chang (UCSF), K. Jeong (UCB), Jeonggi Seo (UCB), Nikolas Chronis (U Michigan), MSs: B. Ellis (Sandia) P. Leung (Eksigent).

Current Group Members: 3 post-doctoral fellows, 16 graduate students, and 6 undergraduate students