

MICHELLE KHINE – BIOGRAPHICAL SKETCH

3113 Natural Sciences II, Irvine, CA 92697-2715

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A. Professional Preparation:

<i>Institution and Location</i>	<i>Degree</i>	<i>Year</i>	<i>Field of Study</i>
University of California, Berkeley	B.S.	1999	Mechanical Eng.
University of California, Berkeley	M.S.	2001	Mechanical Eng.
University of California, Berkeley & San Francisco	Ph.D.	2005	Bioengineering

B. Appointments:

2009- current	University of California, Irvine Dept of Biomedical Engineering, Assistant Professor Depts. of Mechanical Engineering, Chemical Engineering and Materials Science, Affiliate Assistant Professor
2008-current	Shrink Nanotechnologies, Inc., Scientific Founder
2006 –2009	University of California, Merced Assistant and Founding Professor Co-Director, Foster Family Center for Engineering Service Learning , A National EPICS (Engineering Projects in Community Service) Site
2002 –2005	Berkeley Sensor and Actuator Center (BSAC) at U. C. Berkeley Graduate Researcher under Professor Luke P. Lee
2004 –2005	Sandia National Laboratories, Livermore, CA Graduate Student Researcher under Dr. Rafael Davalos
2004 –2006	Fluxion Biosciences Inc. Founder and Chief Technology Officer
2003 –2004	Youth Tennis Advantage / BearTrax, Head Tennis Instructor

Awards:

2009	MIT Technology Review’s TR35 (honoring the peer-reviewed top 35 innovators internationally under the age of 35)
2009	Forbes’ Magazine named 1 of 10 ‘Revolutionaries’ for their ‘world-changing ideas.’
2010	NIH Director’s New Innovator Award

C. Publications

Five most relevant:

1. Fu, C.C., Grimes, A., Long, M., Ferri, C.G.L., Rich, B.D., Ghosh, S., Ghosh, S., Lee, L.P., Gopinathan, A., **Khine, M.** “Tunable Nanowrinkles on Shape Memory Polymer Sheets”. *Advanced Materials*, **21**, 1, 2009. Selected for cover, Dec 2009. *Highlighted in EE Times (August 2009)*.
2. Fu, C.C., Ossato, G., Long, M., Digman, M., Lee, L.P, Gratton, E. **Khine, M** “Bimetallic Nanopetals for Thousand-fold Fluorescence Enhancements”, under review.
3. Nyugen, D., Pegan, J., Sa, S., McCloskey, K.E., Manilay, J.O., **Khine, M.**, “Shrink-Induced Honeycomb Microwells for Uniform Embryoid Bodies”, *Lab on a Chip*, **9**, 3338 – 3344, 2009. Received top 10% reviews, Selected for inside cover. *Highlighted in The Scientist Magazine (Feb 2010)*.
4. Chen, A., Lieu, D.K., Freschauf, L., Lew, V., Sharma, H., Wang, J., Nguyen, D., Karakikes, I., Hajjar, R.J., Gopinathan, A., Botvinick, E., Fowlkes, C.C., Li, R.A.*, **Khine, M.**,* “Shrink-Film Configurable Multi-scale Wrinkles for Functional Alignments of Human Embryonic Stem Cells and their Cardiac Derivatives, *Advanced Materials* 23(48):5785-91 (2011). *Highlighted in Lab Chip (Selimovic et al., 12, 849-851, 2012)*.
5. Freschauf, L., McClane, J., Sharma, H., **Khine, M.***, “Shrink-Induced Superhydrophobic and Antibacterial Surfaces in Consumer Plastics,” *PLoS ONE*, 7(8): e40987, 2012.

Five other significant publications

1. **Khine, M.**, Lau, A., Ionescu-Zanetti, C., Seo, J., Lee, L.P., “A Single Cell Electroporation Chip,” *Lab on a Chip*, 5, 38, 2005. Selected as a “hot article” in *Lab on a Chip* and for the Special Issue “Cells in miniaturized systems” January 2005, this article is also highlighted in *Chemical Science* for its impact on cellular bioassays.
2. **Khine, M.**, Ionescu-Zanetti C., Blatz A., Wang L.P., Lee L.P., “Single-Cell Electroporation Arrays with Real-Time Monitoring and Feedback Control,” *Lab on a Chip*. 7(4):457-62, 2007. This work was highlighted on the cover of *Genome Technology* (May 2007).
3. Ionescu-Zanetti C., Blatz A., **Khine, M.**, “Electrophoresis-Assisted Single-Cell Electroporation for Efficient Intracellular Delivery”, *Biomed Microdevices*. 10(1):113-6, 2008.
4. Grimes A., Breslauer D.N, Long M., Pegan J., Lee L.P., **Khine, M.**, “Shrinky-Dink Microfluidics: Rapid Generation of Deep and Rounded Patterns”, *Lab on a Chip*. 8(1):170-2, 2008. Highlighted in *Chemical and Engineering News*, *Chemical Technology*, on the Front page of *American Chemical Society Homepage*, (acs.org), front page of *Lab on a Chip Homepage*, and *Wired*. Most accessed paper January 2008. #2 most downloaded *Lab on a Chip* paper in 2008.
5. Chen, C.S., Breslauer, D.N., Luna, J.I., Grimes, A., Chin, W.C., Lee, L.P, **Khine M.**, “Shrinky Dink Microfluidics: 3-D Polystyrene Chips,” *Lab on a Chip*, 8, 622–624, 2008. Highlighted in *Nature Medicine* (May 2008).

D. Synergistic Activities

Professional Association Memberships:

Society of Women Engineers (Faculty Advisor, UC Merced) , Sigma Xi, BMES

Professional Services and Activities:

- Grant Review Panel Member, NIH NIGMS 2007-2009
- Shrink Technologies, Scientific Founder & Advisory Board Member, 2009
- Northern California Diversity Forum, 2006-2008
- Technical Chair, 10th Annual UC-Wide Bioengineering Symposium, June 20-22nd, 2009
- Executive Committee Member, UC BREP (Biotechnology Research and Education Program), 2006-2009
- Grant Review Panel Member, GREAT Fellowship, 2006-2009
- Session Chair, BMES 2008, 2010
- Technical Committee Member and Session Chair, MicroTAS 2010
- Poster Judge, MicroTAS 2008
- Journal Reviewer: *Lab Chip*, *IEEE/ASME Journal of Microelectromechanical Systems*, *Biomedical Microdevices*, *Experimental Biology and Medicine*, *Analyst*, *Langmuir*, *Electrophoresis*

Ph.D. Advisees: Diep Nguyen, Aaron Chen, Himanshu Sharma, Jolie McLane, Sophia Lin

M.S. Advisees: Jesus Luna , Jonathan Pegan

E. Collaborators and Other Affiliations

Bruce Conklin, Gladstone Institute UCSF, Sayatani Ghosh, UC Merced, Ajay Gopinathan, UC Merced, Arnold Kim, UC Merced, Kara McCloskey, UC Merced , Fabian Pease, Stanford University, Ron Li, Mt.Sinai Medical School, David D. Awschalom, UC Santa Barbara, Michael Sprague, UC Merced, Jennifer Manilay, UC Merced, Enrico Gratton, UC Irvine, Charless C. Fowlkes, UC Irvine

Graduate and Postdoctoral Advisors:

Graduate: Luke P. Lee, Bioengineering, University of California Berkeley

Post-doctoral: N/A