- Franklin Anariba (https://epd.sutd.edu.sg/people/faculty/franklin-anariba)
- Ang Lay Kee, Ricky (https://epd.sutd.edu.sg/people/faculty/ang-lay-kee-ricky)
- Avinash Baji (https://epd.sutd.edu.sg/people/faculty/avinash-baji)
- Luciënne T.M. Blessing (https://epd.sutd.edu.sg/people/faculty/lucienne-blessing)
- Bong Eng Ying (https://epd.sutd.edu.sg/people/faculty/bong-eng-ying)
- Roland Bouffanais (https://epd.sutd.edu.sg/people

Michinao Hashimoto

Assistant Professor

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Research Areas:
Bio-Medical Engineering

Pillar / Cluster: Engineering Product Development

Biography

Dr. Michinao Hashimoto received B.S. degrees in Chemistry and Biochemistry/Biophysics with honors from Oregon State University in 2003, and Ph.D. degree from Harvard University in 2009 under the guidance of Prof. George Whitesides. Prior to joining SUTD, he completed his postdoctoral training at MIT and Children's Hospital Boston under the guidance of Prof. Daniel Kohane and Prof. Robert Langer.

He has served as visiting scholars at multiple institutions, including Polish Academy of Science (Poland), University of Sao Paulo (Brazil), National Tsinghua University (Taiwan), the University of Tokyo (Japan), and Saudi Aramco (Saudi Arabia).

Professional Appointments

- 2014-present Assistant Professor, Singapore University of Technology and Design
- 2009-2013 Postdoctoral Associate, Massachusetts Institute of Technology
- 2009-2013 Postdoctoral Associate, Boston Children's Hospital
- 2004-2009 Graduate Research Assistant, Harvard University

Education

- PhD Chemical Physics, Harvard University, 2009
- A.M. Chemistry, Harvard University, 2005
- B.S. (Honors) Chemistry, Oregon State University, 2003
- B.S. (Honors) Biochemistry and Biophysics, Oregon State University, 2003

Research Interest

Dr. Hashimoto's overarching research theme is microfluidics, both fundamentals and applications. Ongoing research topics include multiphase microfluidics, biomaterials formation, drug delivery, and development of medical and diagnostic devices. He is also interested in reducing the cost of science and technology, and making them accessible to broader range of people. Along this line, his research interest is on low-cost device fabrication and their application in point-of-care setting.

Selected Publication

- M. Hashimoto, R. Tong, D. S. Kohane, "Microdevices for Nanomedicine," Mol. Pharmaceutics, 2013, 10(6), 2127-44. http://dx.doi.org/10.1021/mp300652m (http://dx.doi.org/10.1021/mp300652m)
- M. Hashimoto, R. Langer, D. S. Kohane, "Benchtop fabrication of microfluidic systems based on curable polymers with improved solvent compatibility," Lab Chip, 2013, 13(2), 252-259. http://dx.doi.org/10.1039/c2lc40888k (http://dx.doi.org/10.1039/c2lc40888k)
- W. Choi, M. Hashimoto, A. K. Ellerbee, X. Chen, K. J. M. Bishop, P. Garstecki, H. A. Stone, and G. M. Whitesides, "Bubbles Navigating through Networks of Microchannels," Lab Chip, 2011, 11(23), 3970-8. http://dx.doi.org/10.1039/c1lc20444k (http://dx.doi.org/10.1039/c1lc20444k)
- M. Kubo, X. Li, C. Kim, M. Hashimoto, B. J. Wiley, D. Ham, G. M. Whitesides, "Stretchable Microfluidic Radio Frequency Antenna," Adv. Mater., 2010, 22(25), 2749-52. http://dx.doi.org/10.1002/adma.200904201 (http://dx.doi.org/10.1002/adma.200904201)
- M. Hashimoto, G. M. Whitesides, "Formation of Bubbles in a Multi-section Flow-focusing Junction," Small, 2010, 6(9), 1051-9. http://dx.doi.org/10.1002/smll.200902164 (http://dx.doi.org/10.1002/smll.200902164)
- M. Hashimoto, J. Feng, R. L. York, A. K. Ellerbee, G. Morrison, S. Thomas, L. Mahadevan, G. M. Whitesides, "Infochemistry: Encoding Information as Optical Pulses using Droplets in a Microfluidic Device," J. Am. Chem. Soc., 2009, 131(34), 12420–9. http://dx.doi.org/10.1021/ja904788m (http://dx.doi.org/10.1021/ja904788m)
- Q. Xu+, M. Hashimoto+, T. T. Dang, T. Hoare, D. S. Kohane, G. M. Whitesides, R. S. Langer and D. G. Anderson, "Preparation of Monodisperse Drug-loaded Polymer Microparticles Using a Microfluidic Flow-focusing Device," Small, 2009, 5, 1575-81. (+ equally contributed authors) http://dx.doi.org/10.1002/smll.200801855 (http://dx.doi.org/10.1002/smll.200801855)
- M. Hashimoto, S. S. Shevkoplyas, B. Zasońska, T. Szymborski, P. Garstecki, G. M. Whitesides, "Formation of Bubbles and Droplets in Parallel, Coupled Flow-focusing Geometries," Small, 2008, 4, 1795-1805. http://dx.doi.org/10.1002/smll.200800591 (http://dx.doi.org/10.1002/smll.200800591)
- M. Hashimoto, P. Garstecki, H. A. Stone, G. M. Whitesides, "Interfacial Instabilities in a Microfluidic Hele-Shaw Cell," Soft Matter, 2008, 4, 1403-13. http://dx.doi.org/10.1039/B715867J (http://dx.doi.org/10.1039/B715867J)
- M. Hashimoto, P. Garstecki, G. M. Whitesides, "Synthesis of Composite Emulsions and Complex Foams with the use of Microfluidic Flow-Focusing Devices," Small, 2007, 3(10), 1792-1802. http://dx.doi.org/10.1002/smll.200700238 (http://dx.doi.org/10.1002/smll.200700238)
- M. Hashimoto, B. Mayers, P. Garstecki, G. M. Whitesides, "Flowing Lattices of Bubbles as Tunable, Self-assembled Diffraction Gratings," Small, 2006, 2(11), 1292-98. http://dx.doi.org/10.1002/smll.200600211 (http://dx.doi.org/10.1002/smll.200600211)

Patents

- M. Kubo, X. Li, C. Kim, M. Hashimoto, B. Wiley, D. Ham, and G. Whitesides. "Robust Stretchable Electronics," US Patent Application, filed 2010

Awards

- Bosch Fellowship for EuroScience Open Forum, Bosch Foundation, 2010
- 60th Lindau Nobel Laureate Meetings, Japan Society of Promotion of Sciences, 2010
- Fieser Lecture Award, Department of Chemistry and Chemical Biology, Harvard University, 2008
- Nanoscale Science and Engineering Center Travel Fellowship, Harvard University, 2006
- Chemical Physics Student Fellowship, Harvard University, 2005
- CUE Award, Distinction in Teaching, Harvard University, 2004