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### Joel Voldman



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Professor Joel Voldman is a principal investigator in the Research Laboratory of Electronics (RLE) at the Massachusetts Institute of Technology (MIT). He received the B.S. degree in electrical engineering summa cum laude from the University of Massachusetts, Amherst, in 1995. He received the M.S. and Ph.D. degrees in electrical engineering from MIT in 1997 and 2001, respectively. Professor Voldman performed postdoctoral research at Harvard Medical School before joining the MIT faculty in the Department of Electrical Engineering and Computer Science in 2002.

Professor Voldman's current research interests focus on BioMEMS, applying microfabrication technology to illuminate biological systems, ranging from point-of-care diagnostics to fundamental cell biology to applied neuroengineering. His research builds upon various disciplines: electrical engineering, microfabrication, bioengineering, transport modeling, biology, and medicine. His group takes a quantitative approach to designing technology, using both analytical and numerical modeling to gain fundamental understanding of the technologies that we create. He then takes designs from fabrication to assay.

#### Keywords

cellular bioMEMS, cells, dielectrophoresis, microfluidics, microfabrication technology, bioengineering, neuroengineering, stem cell biology, medical microsystems

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