

Behrouz Abedian

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a. Professional Preparation.

Arya-Mehr University of Technology	Mechanical Engineering	B.S.	1975
Massachusetts Institute of Technology	Mechanical Engineering	M.Sc.	1977
Massachusetts Institute of Technology	Mechanical Engineering	PhD	1979
Massachusetts Institute of Technology	Mechanical Engineering	Post-Doc	1979-80

b. Appointments.

2006-07	Visiting Professor, Applied Sciences, Nova SE University
1988-93	Chair, Mechanical Engineering Department, Tufts University
1986-	Associate Professor, Mechanical Engineering, Tufts University
1984-85	Visiting Assistant Professor, Applied Sciences, Harvard University
1981-82	Visiting Assistant Professor, Mechanical Engineering Department, MIT
1980	Assistant Professor, Mechanical Engineering, Tufts University

c. Publications (over 40 publications in primary journals)

1. "A new generation of digital microfluidic devices," with Shaun Berry, Jakub Kedzierski, *IEEE MEMS*, to be published, 2009.
2. "Optimization of micromixers with cross-channel actuation," with Jeffrey Jackson and Shaun Berry, submitted to *Inter. Heat Mass Transf.*, 2008.
3. "Temperature effects on the electrical conductivity of dielectric liquids," With K.S. Baker, *IEEE Dielectrics Electrical Insulations*, **15**, 888-893, 2008.
4. "Silk Fibroin Solution Properties Related to Assembly and Structure," with A. Matsumoto, A. Lindsay and D. Kaplan, *J. Macromolecular Sci.*, **8**, 1023-142, 2008
5. "Irreversible electrowetting on amorphous fluoropolymers, with Shaun Berry, Jakub Kedzierski, *Langmuir*, **23**, 12429-12435, 2007
6. Low Voltage Electrowetting for Microfluidic Devices, with Shaun Berry, Jakub Kedzierski, *J. Colloid Interface Sci.*, **303**, 517-524, 2006
7. An effective method to spread flowable composites in resin-based restorations, with P. Millstein, *J. Operative Dentistry*, **30**, 151-154, 2006
8. Spin-up Instability of a Levitated Molten Drop in MHD-flow Transition to Turbulence,' with C. Boulard and R. Hyers, *IEEE Magnetism*, **41**, 2230-2235, 2005.
9. Surface Oscillations of an electromagnetically levitated droplet, with S.R. Berry, R.W. Hyers and L.M. Racs, *J. Thermophysics*, **26**, 1565-1582, 2005
10. A study of Localized curing of Glass-filled Composites using Microhardness measurements, with F. Garcia-Godoy & F. Garcia-Godoy, *J. Applied Polymer Sci.*, **97**, 426-431, 2005

d. Synergistic Activities.**1. Patents and Inventions**

- Self-Cleaning Rotating Mirror, US Patent US6338560, Jan. 2002
- Method of Shaping an Adhesive Material- US Patent US6224379, June 2001
- Galileo Vacuum System for Removing Ablated Particles, US Patent US6097417, Aug. 2000

- Peritoneal Dialysis Catheters for Veterinary Applications, Mass. Bio Tech. Research Institute, Nov. 1998

2. Honors and Awards

Scholarship

- Membership in APS, ASME, MRS, Adhesion Soc., AICHE, Tau Beta Pi, Tau Sigma
- Graduate Fellowship, Mechanical Engineering Dept., MIT
- Mellon Foundation Fellow, Tufts University
- Research Fellowship, Division of Applied Sciences, Harvard University

Teaching

- Teacher of the Year Award– ASME , Tufts University, 2007
- Advisor of John Umina who received the prize in the ASME Young Fluid Mechanics national competition in Orlando, FL in Fall 00.
- Advisor of Chris Boulard who received the 1st prize in the ASME Old-Guard Student contest in Hartford, CT in Spring 00.
- Advisor of Greg Murphy who received the 1st prize in the ASME Old-Guard Student contest in Bridgeport, CT in Spring 97 and Dallas in Fall 97.
- Advisor of Ioannis Miaoulis who received the 1st prize in the ASME Old-Guard Student contest in Concord, NH in Spring 83

3. Corporate

Scientific Advisory Board, **Medical Assurance, Inc.** (1998-1999); Technical Advisory Committee, **Panametrics, Inc.** (1998- 2001)

e. Collaborators & Other Affiliations.

(i) Collaborators:

Livia M.Racz, Draper Laboratory, MIT; Jakub Kedzierski, Lincoln Laboratory, MIT; Jason Fiering, Draper Laboratory, MIT; Franklin Garcia Godoy, Nova SE University; Douglas Matson, Mechanical Engineering, Tufts University; Gerardo Trapaga, Cinvestav Unidad Querétaro, Robert Hyers, University of Mass. Amherst; Kenneth Baker, Hamilton-Sundstrand Inc., Lawrence C. Lynnwoth, GE Inc., Ronald Perry, Dental School, Tufts University, Gerald Kugel, Dental School, Tufts University, Chris Swan, Civil and Environmental Eng., Tufts University.

(ii) Graduate and Postdoctoral Advisors

Ain A. Sonin, Mechanical Engineering Department, MIT, Cambridge, MA

(iii) **Thesis Advisor and Postgraduate-Scholar Sponsor (over past five years):**

- Number of Postdoctoral Scholars: 0
- Number of PhD Students: 2
- Number of Master's Students: 7