

# Xuanhe Zhao

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## Degree and Education

PhD in Mechanical Engineering, Harvard University	11/2009
MS in Mechanical Engineering, Harvard University	09/2008
MASc in Materials Engineering, The University of British Columbia	07/2006
BE in Electrical Engineering, Tianjin University	07/2003

## Experience

Associate Professor with Tenure, Department of Mechanical Engineering and Department of Civil and Environmental Engineering (joint), MIT	05/2017-Present
Associate Professor without Tenure, Department of Mechanical Engineering and Department of Civil and Environmental Engineering (joint), MIT	01/2015-05/2017
Assistant Professor, Department of Mechanical Engineering and Department of Civil and Environmental Engineering (joint), MIT	09/2014-01/2015
Visiting Scientist, Department of Mechanical Engineering, MIT	05/2014-09/2014
Assistant Professor, Department of Mechanical Engineering and Materials Science, Duke University	07/2010-09/2014
Postdoctoral Fellow in Biomedical Engineering, Harvard University	07/2009-07/2010

## Research Interests

The mission of Zhao Laboratory at MIT is to advance science and technology on the interfaces between humans and machines for addressing grand societal challenges in health, water, security and joy of living; by integrating expertise in solid mechanics, soft materials, bioelectronics, 3D printing and theoretical modeling. Dr. Zhao's recent noticeable works include:

**Extreme mechanics.** Design and understanding of tough, strong, resilient, adhesive, anti-fatigue, conductive, bioactive soft materials and soft-hard-material hybrids, achieving world-record performances.

**Ferromagnetic soft robots.** Invention of untethered ferromagnetic soft materials and robots, which are rationally designed, 3D printed and accurately controlled by theoretical models and capable of various fast and powerful functions.

**Soft-materials technology.** Applications of soft materials to form long-term, high-efficacy, and compatible interfaces between humans and machines, through applications such as hydrogel bioelectronics, hydrogel soft robots, hydrogel optical fibers, ingestible hydrogel device, hydrogel coatings on medical devices, hydrogel living materials and devices.

## Publications

Over 110 papers in referred journals including *Nature*, *Science*, *PNAS*, *Nature Communications*, *Science Advances*; *Nature Materials*, *Advanced Materials*; *PRL*; *JMPS*, *IJSS*, *JAM*, *EML* et al.

**Web of Science.** <http://www.researcherid.com/rid/B-1532-2008>

**Google Scholar.** [http://scholar.google.com/citations?user=4bHLr\\_IAAAAJ](http://scholar.google.com/citations?user=4bHLr_IAAAAJ)

**Journal papers.** <http://zhao.mit.edu/all-publications/>

**Selected journal papers.** <http://zhao.mit.edu/selected/>

**Review papers.** <http://zhao.mit.edu/reviews/>

**Patents.** <http://zhao.mit.edu/patents/>

## Selected Awards and Honors

Clarivate Highly Cited Researcher, Web of Science	12/2018
Materials Today Rising Star Award, Materials Today	09/2018
Young Investigator Medal, Society of Engineering Science	07/2017
Young Scientist Award, The Adhesion Society	02/2017
Extreme Mechanics Letters Young Investigator Award, Elsevier	12/2015
Robert N. Noyce Career Development Professorship, MIT	07/2015
Journal of Applied Mechanics Award, ASME	02/2015
d'Arbeloff Career Development Chair, MIT	07/2014
Hunt Faculty Scholar, Duke University	07/2014
2014 Young Investigator Program Award (YIP), Office of Naval Research	04/2014
Arthur K. Doolittle Award, ACS Polymeric Materials Science and Engineering Division	02/2014
2013 US Frontiers of Engineering Symposium, National Academy of Engineering	09/2013
Invited lecturer, Gordon Research Conference on the Science of Adhesion	07/2013

Faculty Early Career Development (CAREER) Award, National Science Foundation	12/2012
Early Career Researchers Award, AVS Biomaterial Interfaces Division	11/2012
2012 ICTAM Travel Fellowship Grant Award, US National Committee on Theoretical and Applied Mechanics	08/2012
Haythornthwaite Research Initiation Grant Award, American Society of Mechanical Engineers	11/2011
NSF Travel Fellowship for Workshop on Mechanics of Soft Materials	03/2010
MRS Graduate Student Award Final List	04/2009
Chinese Government Award for Outstanding Self-financed Students Abroad	11/2008
AAM Founder's Prize, American Academy of Mechanics	03/2008
Winston Chen Graduate Fellowship, Harvard University	09/2006; 09/2007
John S Nadeau Memorial Scholarship, The University of British Columbia	11/2005
Outstanding Graduation Thesis, Tianjin University	07/2003

### Professional Activity

Editorial Board, Science Advances	2019-Present
Associate Editor in Chief, Acta Mechanica Sinica	2015-Present
Editorial Board, Scientific Reports	2015-Present
Editor, Journal Club of imechanica.org	2013-2014
Editorial Board, International Journal of Applied Mechanics	03/2012-Present
Elected Chair, Technical Committee on Soft Materials, American Society of Mechanical Engineers	11/2012-Present
Review Panel, National Science Foundation	2012-2014
Proposal Reviewer, Army Research Office	2011
Reviewer for Nature, Nature Series, PNAS, Journal of the Mechanics of Physics and Solids, International Journal of Solids and Structures, International Journal of Applied Mechanics, Journal of Applied Mechanics, Physical Review Letters, Langmuir, Soft Matter, Advanced Materials, Smart Materials and Structures, International Journal of Non-Linear Mechanics, Macromolecules, Journal of Materials Research.	2009-Present

### Students and Postdoctoral Fellows Supervised

Full list. <http://zhao.mit.edu/our-team/>

Graduated students and postdocs in academia.

Qiming Wang, Assistant Professor, University of Southern California

Ruike Zhao, Assistant Professor, Ohio State University

Teng Zhang, Assistant Professor, Syracuse University

Changyong Cao, Assistant Professor, Michigan State University

Honfai Chan, Assistant Professor, The Chinese University of Hong Kong (China)

Jianfeng Zang, Professor, Huazhong University of Science and Technology (China)

Ji Liu, Assistant Professor, Southern University of Science and Technology (China)

Gerard-Philippe Zehil, Assistant Professor Notre Dame University (Lebanon)