

2015 Sep-2020 Feb| **Research Assistant**| **Silklab, Tufts University**, MA, USA

- Department of Biomedical Engineering, Professor Fiorenzoomenetto's group
Doctoral thesis: Optomechanical actuators based on soft magnetic composites

2014 Apr-2015 Mar| **Thesis Student**| **University of Ulm**, Ulm, Germany

- Master thesis: Measuring the magnetization of single superparamagnetic particles with on-chip manipulation

Patents

- Published 2021|Omenetto, F., Li, M., Systems and methods for a remote control actuator, US Patent Application 20210270253, assigned to Trustees of Tufts College

Fellowships, Awards, Honors

- 2024 Sep| **National Institute of Food and Agriculture (NIFA) Postdoctoral Fellowship**, 2-years term
- 2023 Oct| Rising Stars in Soft and Biological Matter Symposium, University of Chicago, University of California, San Diego
- 2023 Oct| Future Faculty Symposium, travel award, Society of Engineering Science (SES) Annual Technical Meeting, Minneapolis, MN, USA
- 2022 Jun| 71st Lindau Nobel Laureate Meeting, selected participation
- 2020 Sep| **Alexander von Humboldt Postdoctoral Research Fellowship**, 2-years term
- 2018 Dec| Materials Research Society Graduate Student Award
- 2012 Sep| China Scholarship Council Exchange Student Scholarship, 1-year term

Professional Certificates

- 2023 Jun| **Kaufman Teaching Certificate Program**, MIT, MA, USA
- 2023 Jun| Predictive Multiscale Materials Design, MIT Professional Education, MIT, MA, USA
- 2022 Jun| Intersectionality in Academia Workshop, Max Planck Society, Germany

Conference Presentations

- 2023 Nov| Magnetic Putty as a Reconfigurable, Recyclable and Accessible Soft Robotic Material, MRS Fall Meeting, Boston, MA, USA
- 2023 Nov| 3D-Printed Micrometer-Scale Wireless Magnetic Cilia with Metachronal Programmability (poster presentation), Materials Research Society (MRS) Fall Meeting, Boston, MA, USA
- 2023 Nov| Meet the New Faculty Candidates Poster Session, MRS Fall Meeting, Boston, MA, USA
- 2023 Nov| Biopolymeric Microneedles for Underwater Fish Vaccination (poster presentation), Best Poster Award nominee, MRS Fall Meeting, Boston, MA, USA
- 2023 Oct| Future Faculty Symposium with travel award, Society of Engineering Science (SES) Annual Technical Meeting, Minneapolis, MN, USA
- 2022 Dec| Meet the Future Faculty Poster Session, MRS Fall Meeting, Boston, MA, USA
- 2022 Aug| Poster presentation, Gordon Research Conferences-Robotics, Ventura, CA, USA

- 2021 Dec| Integrating non-transparent materials with direct laser writing to create functional microdevices, MRS Fall Meeting, Boston, MA, USA
- 2019 Dec| Light responsive magnetic cilia for local actuation, MRS Fall Meeting, Boston, MA, USA
- 2018 Nov| Flexible optomechanical actuators based on light-induced demagnetization of low curie temperature composites, MRS Fall Meeting, Boston, MA, USA

Invited Talks and Seminars

- 2024 May| National Center for Cool and Cold Water Aquaculture, USDA, Leetown, WV, USA
- 2024 Jan| Department of Mechanical Engineering, Columbia University, NYU, NY, USA
- 2023 Oct| Rising Stars in Soft and Biological Matter Symposium, University of Chicago & University of California, San Diego
- 2022 Nov| Invited speaker at the Symposium Magnetic Materials for Soft Robotics and Nanorobotics, MRS Fall Meeting, Boston, MA, USA
- 2022 Jul| Department of Materials, ETH Zürich, Zürich, Switzerland
- 2022 Jun| Departmental Seminar, Novo Nordisk, Denmark
- 2022 Mar| Department of Mechanical and Energy Engineering, Southern University of Science and Technology, Shenzhen, China
- 2019 Jun| Maersk Mc-Kinney Moller Institute, University of Southern Denmark, Odense, Denmark
- 2019 Mar| Department of Aeronautics and Astronautics, MIT, MA, USA

Mentoring and Teaching Experience

- **Master Thesis Mentor**| MIT, MA, USA
 - 2023-2024| Mr. Jad Raad| Master of Engineering in Civil and Environmental Engineering
Thesis Title: Microneedles with Enhanced Retraction Force Relative to Fish Skin
 - 2022-2023 | Ms. Colleen Wolfe| Master of Engineering in Civil and Environmental Engineering
Thesis Title: Microneedles for Drug Delivery in Aquaculture
Best CEE Master Thesis Poster Award
- 2023 Sep| **Guest Lecturer**| Vanderbilt University, USA
 - Course name: Miniature Robotics
 - Lecture topic: Bioinspired Robotics, invited by Prof. Xiaoguang Dong
- 2017 Spring Semester| **Teaching Assistant**| Tufts University, MA, USA
 - Course name: Principles of Medical Imaging
 - Department of Biomedical Engineering, instructor: Prof. Dr. Sergio Fantini
- 2016 Fall Semester| **Teaching Assistant**| Tufts University, MA, USA
 - Course name: Introduction to Biomedical Engineering
 - Department of Biomedical Engineering, instructor: Prof. Dr. Fiorenzo Omenetto
- 2014 Fall Semester| **Laboratory Instructor**| University of Ulm, Ulm, Germany
 - Course name: Materials Science Laboratory
 - Advanced Materials Master Program
- 2014 Spring semester| **Teaching Assistant**| University of Ulm, Ulm, Germany
 - Course name: Materials Science II

Advanced Materials Master Program, instructor: Prof. Dr. Ulrich Herr

Outreach

- Upcoming 2024 Aug| After Dark event demonstrator, MIT Museum
- 2024 Apr| Nature Driven Design Panel and Demonstration, MIT Museum
- 2023 Sep| Cambridge Science Festival Presenter, MIT Museum
- 2016-2019|Community Day Presenter, Tufts University

Service

- 2023 Jun-preset| Device steward for training new users for the HR-20 Rheometer (TA Instruments) at the Institute for Soldiers Nanotechnologies, MIT
- 2022| PhD application evaluator of the Max Planck ETH Center for Learning Systems (CLS) Doctoral Fellowship Program
- 2021 Sep| Election Committee Member of the PostdocNet representative of the Max Planck Institute of Intelligent Systems
- 2021 Nov| PhD application evaluator of the International Max Planck Research School for Intelligent Systems (IMPRS-IS)

Publication List

[Google Scholar profile](#) (as of 06/18/2024, citation: 1192, h-index: 13)

* indicates equal contribution

First author/co-first author publications

1. **Li, M.**, Pal, A., Byun, J., Gardi, G., Sitti, M., Magnetic putty as a reconfigurable, recyclable, and accessible soft robotic material. *Advanced Materials*, 2304825 (2023).
2. Zhang, S.*, Hu, X.*, **Li, M.***, *et al.*, Sitti, M., 3D-printed micrometer-scale wireless magnetic cilia with metachronal programmability. *Science Advances* 9, eadf9462 (2023).
3. Liu, Z.*, **Li, M.***, Dong, X., Ren, Z., Hu, W., Sitti, M., Creating three-dimensional magnetic functional microdevices via molding-integrated direct laser writing. *Nature Communications* 13, 2016 (2022).
4. **Li, M.***, Pal, A.*, Aghakhani, A.*, Pena-Francesch, A.*, Sitti, M., Soft actuators for real-world applications. *Nature Reviews Materials* 7, 235-249 (2022).
5. Wang, Y.*, **Li, M.***, *et al.*, Omenetto, F. G., Light-activated shape morphing and light-tracking materials using biopolymer-based programmable photonic nanostructures. *Nature Communications* 12, 1–9 (2021).
6. **Li, M.**, Kim, T., Guidetti, G., Wang, Y., Omenetto, F. G., Optomechanically actuated microcilia for locally reconfigurable surfaces. *Advanced Materials* 32, e2004147 (2020).
7. **Li, M.**, Optomechanical actuators based on soft magnetic composites. *ProQuest Dissertations and Theses* (2020).
8. **Li, M.**, Ostrovsky-Snider, N. A., Sitti, M., Omenetto, F. G., Cutting the cord: progress in untethered soft robotics and actuators. *MRS Advances* 4, 2787–2804 (2019).

9. **Li, M.***, Wang, Y.*, Chen, A., Naidu, A., Napier, B. S., Li, W., Rodriguez, C. L., Crooker, S. A., Omenetto, F. G., Flexible magnetic composites for light-controlled actuation and interfaces. *PNAS* 115, 8119–8124 (2018)

Collaborated publications

10. Han, J.*, Dong, X.*, Yin, Z., Zhang, S., **Li, M.**, Zheng, Z., Ugurlu, M. C., Jiang, W., Liu, H., Sitti, M., Actuation-enhanced multifunctional sensing and information recognition by magnetic artificial cilia arrays. *PNAS* 120 (42), e2308301120 (2023).
11. Soon, R. H.*, Ren, Z.*, Hu, W.*, Bozuyuk, U., Yildiz, E., **Li, M.**, Sitti, M., On-demand anchoring of wireless soft miniature robots on soft surfaces. *PNAS* 119 (34), e2207767119 (2022).
12. Wang, T., Ugurlu, H., Yan, Y., Li, M., **Li, M.**, Wild, A.-M., Yildiz, E., Schneider, M., Sheehan, D., Hu, W., Sitti, M., Adaptive wireless millirobotic locomotion into distal vasculature. *Nature Communications* 13, 4465 (2022).
13. Jha, A. K., Douglas, E. S., **Li, M.**, Fucetola, C., Omenetto, F. G., Demonstration of magnetic and light-controlled actuation of a photomagnetically actuated deformable mirror for wavefront control. *Optical Engineering* 60 (12), 124102 (2021).
14. Matzeu, G.*, Mogas-Soldevila, L.*, Li, W., Naidu, A., Turner, T. H., Gu, R., Blumeris, P. R., Song, P., Pascal, D. G., Guidetti, G., **Li, M.**, Omenetto, F. G., Large-scale patterning of reactive surfaces for wearable and environmentally deployable sensors. *Advanced Materials* 32, e2001258 (2020).
15. Jha, A. K., **Li, M.**, Douglas, E. S., Maier, E. R., Omenetto, F. G., Fucetola, C., Modelling light-controlled actuation of flexible magnetic composite structures using the finite element method (FEM). *Proc. SPIE 11477, Molecular and Nano Machines III*, 1147704 (2020).
16. Wang, Y., **Li, M.**, Wang, Y., Silk: a versatile biomaterial for advanced optics and photonics (Invited). *Chinese Optics Letters* 18, 80004 (2020).
17. Wang, Y.*, Huang, W.*, Wang, Y., Mu, X., Ling, S., Yu, H., Chen, W., Guo, C., Watson, M. C., Yu, Y., Black, L. D., **Li, M.**, Omenetto, F. G., Li, C., Kaplan, D. L., Stimuli-responsive composite biopolymer actuators with selective spatial deformation behavior. *PNAS* 117, 14602–14608 (2020).
18. Li, W.*, Wang, Y.*, **Li, M.**, Garbarini, L. P., Omenetto, F. G., Inkjet printing of patterned, multispectral, and biocompatible photonic crystals. *Advanced Materials* 31, e1901036 (2019).
19. Wang, Y.*, Kim, B. J.*, Peng, B., Li, W., Wang, Y., **Li, M.**, Omenetto, F. G., Controlling silk fibroin conformation for dynamic, responsive, multifunctional, micropatterned surfaces. *PNAS* 116, 21361–21368 (2019).
20. Wang, Y., Li, W., **Li, M.**, Zhao, S., Ferrari, F., Liscidini, M., Omenetto, F. G., Biomaterial-based "structured opals" with programmable combination of diffractive optical elements and photonic bandgap effects. *Advanced Materials* 31, e1805312 (2019).
21. Wang, Y., **Li, M.**, Colusso, E., Li, W., Omenetto, F. G., Designing the iridescences of biopolymers by assembly of photonic crystal superlattices. *Advanced Optical Materials* 6, 1800066 (2018).
22. Wang, Y., Aurelio, D., Li, W., Tseng, P., Zheng, Z., **Li, M.**, Kaplan, D. L., Liscidini, M., Omenetto, F. G., Modulation of multiscale 3D lattices through conformational control: painting silk inverse opals with water and light. *Advanced Materials* 29, 1702769 (2017)