

RESEARCH, DISCOVERY & INNOVATION

The MRL is home to a community of faculty, scientists and students engaged in basic and fundamental materials science and engineering research working with industry, government and other global sponsors.

The MRL Industry Collegium provides a proactive forum where people from industry and MIT can work as partners to explore and pursue innovative materials research and development. By joining the Collegium, your company gains access to people and research at the cutting edge of materials technology across the broad materials community at MIT.

Topical Research Areas Include:

- Energy harvesting, conversion and storage
- Quantum materials and devices
- Spintronics
- Metals processing
- Solid-state ionics
- Photonic devices and systems
- Materials integration for microsystems
- Complex biogels
- Machine learning in materials research
- Modeling and materials design
- Electronic properties of complex oxides
- Flexible photonic and electronic systems
- Materials systems and sustainability

Facilitated interaction with faculty and research staff with expertise in a broad range of topics in materials research related to applications for industry

Meetings and events with students for networking as well as internship and recruiting opportunities

Hosting for an embedded staff member at MRL for short or long term visits on campus

Invitations to participate in focused workshops, conferences and seminars

- Hosting of company led seminars at MIT

Access to member-only briefing materials and information via the MRL website

Organized meetings focused on research activity relevant to your company's interests

- Facilitation of corporate meetings and events on campus

Discounted fees for access and use of the MRL materials characterization shared user facilities

> mrl.mit.edu 🏈 617-253-6850 mit-mrl@mit.edu ⋈

Research of the MRL

Research on materials at MIT spans all disciplines, from physics and chemistry to mechanical and electrical engineering, and involving study of all classes of materials including: metals, polymers, semiconductors, ceramics, biomaterials and composites of these materials. A common research method is to focus on the interplay of processing, structure and properties to optimize performance in current technologies and to enable development of new technologies. Research practices include computational modeling and simulation with experimental validation and the application of machine learning for materials discovery, design and synthesis.

MRL Materials Characterization Facilities

Members are provided discounted access to shared user research facilities including:

- Materials Analysis
- Electron Microscopy
- X-ray Diffraction
- Nanostructure Materials Growth and Metrology

Outreach

The MRL supports multiple programs engaging high school students and teachers, community colleges, women, underrepresented minorities and summer interns in impactful research experiences within the MIT materials community.

Through the Collegium, the MRL develops relationships with member companies and supports interactions with individual and small groups of faculty and their students, who have been identified as having research interests relevant to your organization. These interactions provide opportunities to develop research partnerships that are supported through a range of mechanisms.

Join the MRL Industry Collegium!

We invite your company to become a member of the Materials Research Laboratory Industry Collegium. To join or for more information please contact: Mark Beals

Associate Director, MRL

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Research Programs

NSF MIT MRSEC

- Harnessing in-fiber fluid instabilities
- Simple engineered biological motifs
- Nano-ionics at the interface



NSF Center for Integrated Quantum Materials

DOE Chemomechanics of Far-From Equilibrium Interfaces

International Programs & Consortia

- SMART Low Energy Electronic Systems
- Skoltech Center for Electrochemical Energy Storage
- Microphotonics Center at MIT
- Materials Systems Laboratory
- SHINE Sustainability & Health Initiative for Netpositive Enterprises

Manufacturing USA Institute Memberships



Lightweight Innovations for Tomorrow



American Institute for Manufacturing Integrated Photonics



Advanced Functional Fabrics of America



Reducing EMbodied-Energy and Decreasing Emissions

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