materials research science
+ engineering center

MRSEC

UNIVERSITY OF MINNESOTA

"Our MRSEC is a true point of pride in science and engineering at the University of Minnesota, fueling outstanding advances in interdisciplinary research, education, and outreach."

DIRECTOR CHRIS LEIGHTON

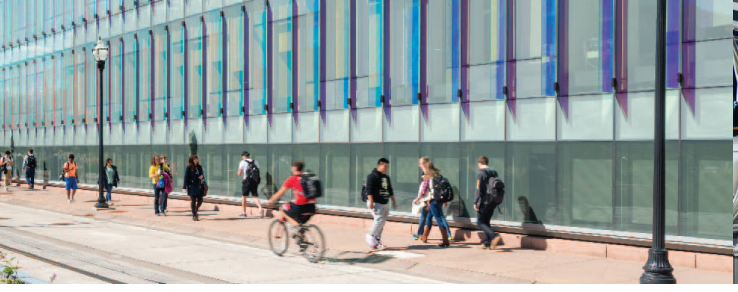
National Science Foundation
MRSEC
Materials Research Science and Engineering Centers

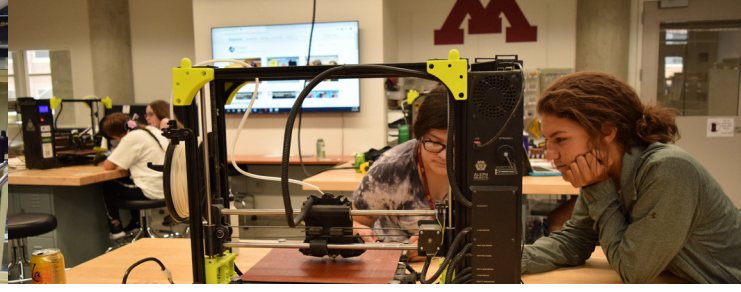
University of Minnesota

www.mrsec.umn.edu

Materials Research Science
and Engineering Center
435 Amundson Hall
421 Washington Ave. SE
Minneapolis, MN 55455
612-626-0713

www.mrsec.umn.edu





integrating **interdisciplinary research** with **innovative outreach** to **inspire excellence** in Materials Science and Engineering

about

University of Minnesota MRSEC

This multifaceted MRSEC enables important areas of future technology, ranging from applications of electrical control over materials to scale-invariant shape-filling amphiphile network self-assembly. The UMN MRSEC manages an extensive program in education and career development. The MRSEC is bolstered by a broad complement of over 20 companies that contribute directly to IRG research through intellectual, technological, and financial support. International research collaborations and student exchanges are pursued with leading research labs in Asia and Europe. The UMN MRSEC benefits from an extensive suite of materials synthesis, characterization and computational facilities.

research

The research program addresses the meticulous control of composition, structure, and properties in two exciting categories of advanced materials:

+ IRG-1: Ionic Control of Materials
+ IRG-2: Mesoscale Network Materials

Ionic Control of Materials

The goal of IRG-1 is to understand the mechanisms, capabilities, and applications of electrostatic and electrochemical gating and to gain electrical control over a wide range of electronic phases and functions.

Mesoscale Network Materials

The goal of IRG-2 is to discover and exploit scale-invariant shape-filling amphiphile (SFA) motifs to assemble robust, functional network phases and to understand how processing impacts their properties.

Outreach

PREM: Partnerships for Research and Education in Materials with the University of Texas, Rio Grande Valley

MRFN: Charter member of the Materials Research Facilities Network, to expand the use of Shared Experimental Facilities

Science Museum of Minnesota: Partnership in conceiving, developing, and presenting exhibits

IPrime: Industrial Partnership for Research in Interfacial and Materials Engineering – a broad-based University/Industry parternship supporting fundamental collaborative research on materials

Summer Research Programs:

Collaborative research experiences for undergraduates, pre-college teachers, and college faculty:

+ Research Experiences for Undergraduates (REU)
+ Research Experiences for Teachers (RET)
+ Faculty-Student Teams
+ American Indian Fellows

K12 Outreach Opportunities:

+ American Indian Visit Day
+ American Indian Summer Institute
+ Materials Week Summer camps
+ Energy and U
+ Physics Force

more information visit
www.mrsec.umn.edu/ehr/