

WPI Advanced Institute for Materials Research (WPI-AIMR)

In its International Advanced Materials Research Center Plan, Tohoku University proposed a new field blending materials science, physics, chemistry and engineering to the World Premier International Research Center Initiative (WPI Program) hosted by the MEXT. The center has been adopted as one of the world's foremost centers. Following this, Tohoku University established the Advanced Institute for Materials Research (WPI-AIMR) in October 2007.

WPI-AIMR has assembled top-grade researchers, from the fields of materials science, physics, chemistry, precision mechanical engineering and electronic/informational engineering, in order to conduct interdisciplinary research which implements new innovative methods of atomic and molecular control that go beyond existing methods. The Center is committed to pursuing the creation of new materials and compounds, developing devices based upon a new fundamental paradigms; it also promotes the application of research projects with the new materials and system architecture which generates direct societal impacts; thus exhibiting the qualities necessary to become a world-leading international center of materials research.



WPI Laboratory Building

Thrust 1 Bulk Metallic Glasses

This division is dedicated to the cutting-edge research of advanced non-equilibrium metallic materials including amorphous, quasicrystalline and nanostructured metals and alloys that exhibit unique and superior physical, chemical and mechanical properties.

Thrust 2 Materials Physics

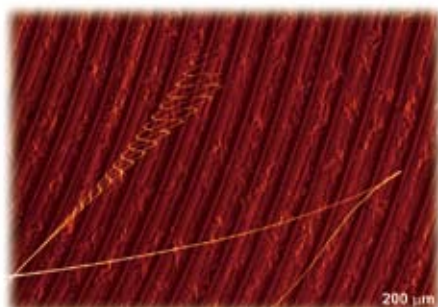
Exploring and understanding innovative materials for electronic devices are the key targets in the research of division.

Thrust 3 Soft Materials

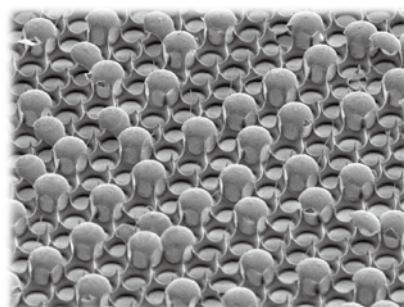
Synthesis, characterization and evaluation of soft materials, such as organo- π -electronic devices, gel, polymer composites, microporous polymer films, and nano-structured materials catalysts, are key issues of this division.

Thrust 4 Device/System

Our device/system group consists mainly of spintronics, electronics, MEMS materials and bio device laboratories. Fabrication of innovative materials and developing them to devices are key target of our group.



The electron micrograph shows a metallic glass nanowire that involves ultrahigh strength and high elasticity. The sine wave pattern demonstrates the vibration of the nanowire.



High adhesive superhydrophobic metal-polymer hybrid surfaces prepared by self-organization