

About EMSL

EMSL, a U.S. Department of Energy national scientific user facility located at Pacific Northwest National Laboratory, provides integrated experimental and computational resources for discovery and technological innovation in the environmental molecular sciences to support the needs of DOE and the nation.

EMSL's distinctive focus on integrating computational and experimental capabilities as well as collaborating among disciplines yields a strong, synergistic scientific environment. Bringing together experts and an unparalleled collection of state-of-the-art instruments under one roof, EMSL has helped thousands of researchers use a multidisciplinary, collaborative approach to solve some of the most important and complex national scientific challenges in energy, environmental sciences, and human health.

Researchers from around the world are encouraged to submit a proposal to use EMSL's unique capabilities in combination with each other with an emphasis on merging computational and experimental instruments. To submit a proposal for use of EMSL or to learn more about the science conducted at EMSL and the instruments and expertise available to users, visit www.emsl.pnl.gov.



Scientific Innovation
Through Integration

Contact EMSL

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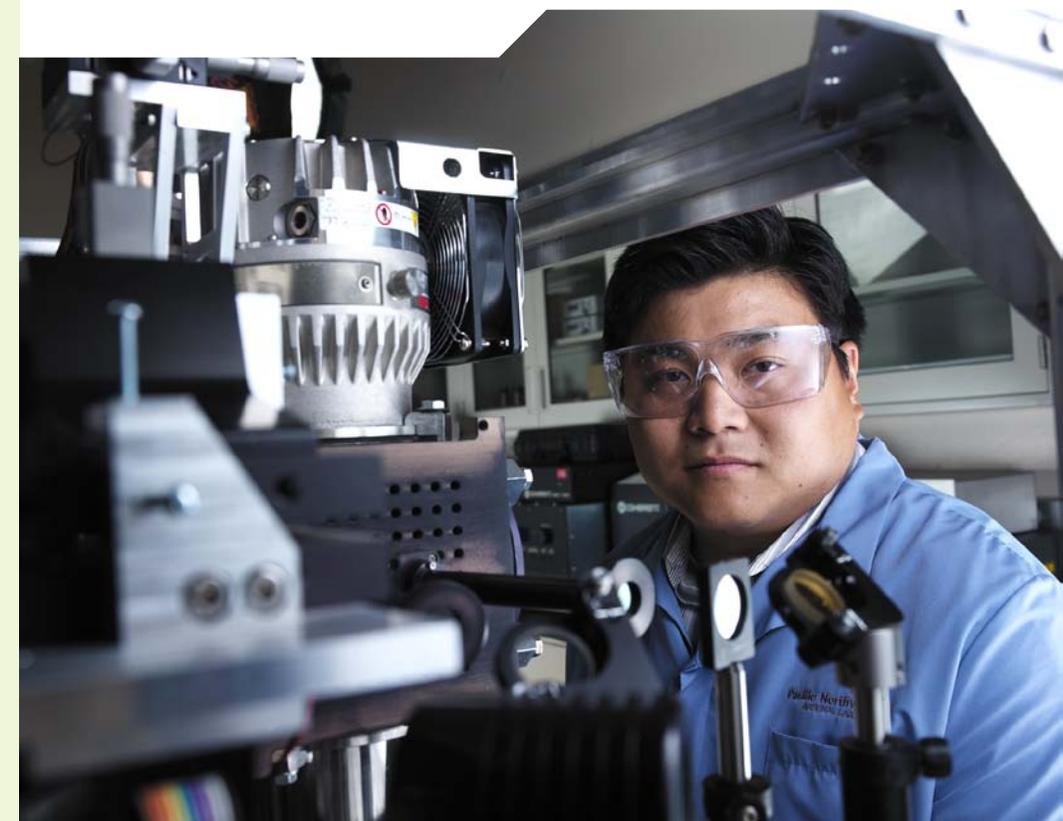
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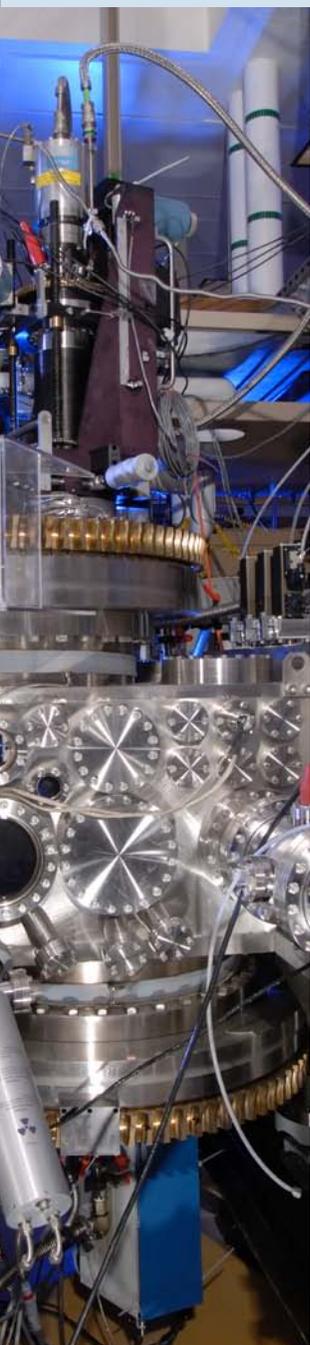
Instrument Development Laboratory

Instrument Development Laboratory

IDL staff design, develop, and deploy advanced signal acquisition and processing instrumentation, signal analysis algorithms, laboratory automation systems, and data management solutions that enable and expedite scientific discovery at EMSL.

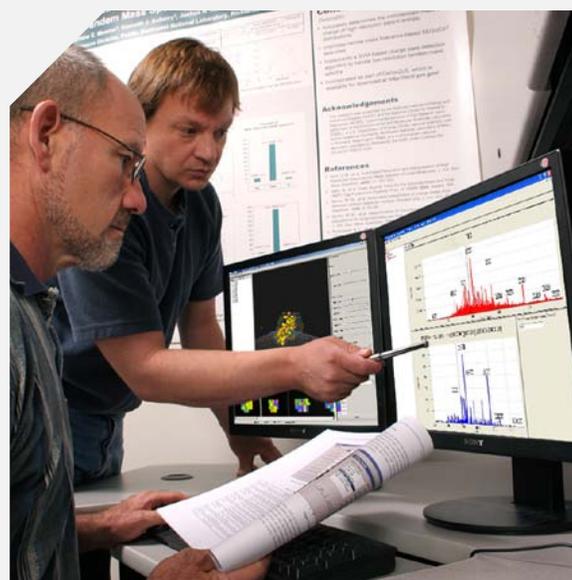
Capabilities include:

- Engineering
 - Design from circuits to systems
 - Custom electronics and instrumentation
 - Embedded systems
 - Field deployment
- Software development
 - Image processing and pattern analysis
 - Laboratory automation
 - Remote operation
 - Data acquisition
 - Large-scale data management
- Electronics fabrication
 - Circuit assembly
 - Component integration
 - Custom enclosures
 - Instrument upgrades and enhancements
- Facilities and equipment
 - Fully equipped electronics development lab
 - Equipment checkout
 - Parts and supplies



Software

IDL software development focuses on data acquisition, laboratory instrument control, remote operation, visualization, data analysis, and data management. The IDL designs modular, reusable software for rapid application development.



Design

EMSL staff and users can engage IDL from initial design through fabrication, testing, and final deployment. In addition, IDL staff can assist researchers in integrating their own experimental components into existing instrument systems.



Hardware

IDL has experts in analog and digital electronics as well as circuit fabrication. Devices can utilize radio frequency technologies and incorporate microcontrollers and field-programmable gate arrays. IDL hardware experts specialize in high-speed data acquisition and embedded systems, and can meet almost any instrumentation need.



Science

From circuits to systems, from wires to the Web, IDL meets the unique technological challenges that abound. IDL's hardware and software experts have enabled research in fields ranging from informatics and proteomics to interfacial chemistry and fisheries sciences.

