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NENIMF: About NENIMF

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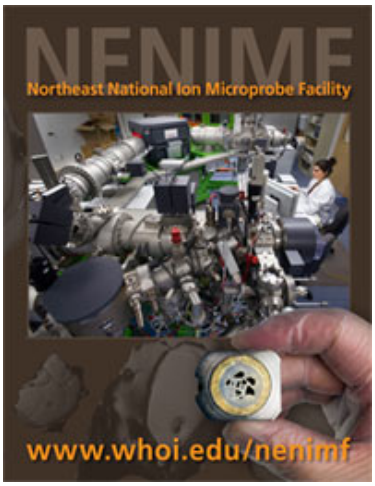
Introduction



Welcome to the Northeast National Ion Microprobe Facility (NENIMF) at the Woods Hole Oceanographic Institution (WHOI) in Woods Hole, Massachusetts, USA. The NENIMF is a regional, multi-user National Ion Microprobe Facility which is supported through National Science Foundation (NSF) funded research grants as well as by grants from other agencies and contracts. We provide service, scientific expertise and educational outreach activities to the research community in the U.S. and beyond. This web site is aimed at providing important information about the facility and promoting the use of secondary ion mass spectrometers (SIMS) in research and education.

Download our information brochure (pdf) »

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Announcements

Recent Developmental Work at NENIMF

U/Pb dating of accessory phases (such as zircon) has become a larger focus for NENIMF over the past few years. We welcome scientists interested in geochronology to contact us to discuss potential projects and to Download our technical information for more details.

Boron Isotopic Analysis of volcanic glasses (including low B MORB), melt inclusions, and other phases from a variety of tectonic settings have been a major technical and research focus at NENIMF over the past two years. We invite scientists interested in the evolution of B isotopes through tectonic processes to contact us about potential analytical projects.

Related Files

&#0187 Zircon_Dating_WHOI.pdf

History

The NENIMF was established in 1996 by Nobumichi Shimizu as an outgrowth of the Woods Hole Oceanographic Institution (WHOI) Regional Ion Microprobe Facility, and represents a consortium effort involving WHOI, Massachusetts Institute of Technology (MIT), Brown University, Rensselaer Polytechnic Institute (RPI), Lamont-Doherty Earth Observatory (LDEO) and the American Museum of Natural History (AMNH). The facility is equipped with Cameca IMS 3f and IMS 1280 ion microprobes that were purchased with support from NSF, the Kresge Foundation, the Cecil and Ida Green Foundation, and the Consortium Members.

The NENIMF consortium members cover a broad range of geochemical research including solar/presolar materials and processes, early Earth evolution, mantle dynamics, crustal processes and evolution, environmental monitoring and experimental geochemistry. Measurements of both the abundances of diverse trace elements (REE, HFSE, LILE) as well as stable and radiogenic isotopes are essential components of this research. Technique developments reflect the broad range of scientific interests of the user base.

The IMS 3f has been used since 1978 for a wide spectrum of geochemical studies, and remains highly effective for in situ trace element and REE analysis of rock-forming minerals and glasses (spatial resolution better than 10 ?m). More recent applications for the IMS 3f include measurement of ?11B in melt inclusions and in natural waters (prepared by evaporation) as well as measurement of Sr, Mg and Ba in marine carbonates for paleotemperature reconstructions.

The IMS 1280 is a new generation high transmission-high mass resolution SIMS instrument with a great number of extended capabilities for geochemical analysis. Types of applications available now at NENIMF are summarized in the Access section. The IMS 1270 was seriously damaged in a fire on October 22, 2002. The rebuilt IMS 1280 was delivered to WHOI in January 2005 and was successfully installed and is operational.

Organization

NENIMF is run day to day by a staff of five consisting of Senior Scientist, two Analysts, Engineer, and Administrator. They are in charge of daily operational matters, maintenance and renovation of the instruments, and development and improvement of analytical protocols. NENIMF personnel also are responsible for helping and training users.

In order to make management and operation of the facility satisfactory to the community of scientists in a broad spectrum of Earth and Ocean Sciences, the NENIMF Staff works closely with the WHOI Director of Research, the Internal Advisory Committee, and the External Advisory Committee. The External Advisory Committee consists of representatives of the consortium member institutions and representatives of the SIMS technical and user community outside the consortium, and provides advice to the NENIMF Director and the WHOI Director of Research on management/operation of the facility as well as on technical matters.

Visiting NENIMF

Hotels near WHOI

- Sands of Time
- Mostly Hall
- Inn On The Square
- Woods Hole Passage
- Chamber of Commerce
  (go to "Visit and Vacation" and then into "Where to stay" for other hotel/B&B options)

Maps and Driving Directions

- Regional Map Cape Cod
- Visitor Information on WHOI's Home Page
  (with Directions, maps of Village Facilities, Quissett Campus, Local Information such as local weather, bus schedules from Logan Airport/Boston and TF Green Airport near Providence, RI, the Ferry Schedule to Martha's Vineyard and Nantucket, etc.)

Public Transportation

- Local Information on WHOI's Home Page

Local Weather

- Woods Hole

Links to other SIMS Laboratories

- Cameca
- CNRS, Nancy
- GeoForschungsZentrum Potsdam SIMS Laboratory
- Max-Planck Institut für Chemie, Mainz
- National Institute of Standards and Technology (NIST, Washington)
- Oak Ridge National Lab
- SIMS Home Page
- SIMS Laboratory at Arizona State University
- Stanford University
- Swedish Museum for Natural History, Stockholm
- The International SIMS Society
- The Wisconsin SIMS Laboratory
- University of California at Los Angeles
- University of Edinburgh
- University of New Mexico & Sandia Natl. Lab
- University of Western Australia, Perth
- Washington University in St. Louis

Sponsors

Major funding for the Northeast National Ion Microbe Facility is provided by Woods Hole Oceanographic Institution and the National Science Foundation.

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