Print

Plasma Mass Spectrometry Facility: Instruments

The three argon plasma mass spectrometers in our facility are all manufactured by Thermo Electron Corporation in Bremen, Germany, and have been installed in 2003.

The two Element 2 (photo 1, right panel, and photo 2) are rapidly scanning, magnetic sector, single collector mass spectrometers used for elemental analysis of gaseous, aqueous or solid samples.

The Neptune (photo 1, center) is a large format, magnetic sector, multicollector ICPMS best suited for high precision isotope ratio measurements. It is equipped with eight Faraday cups, eight continuous-dynode electron multipliers and a central SEM with RPQ for high abundance sensitivity.

Solid Samples can be directly sampled and introduced into either the Neptune or one of the Element2 using the New Wave Research UP 213 laser ablation sampling device

We recently added a New Wave Research UP 193 nm eximer laser ablation system to the facility. This system is equipped with a large-format laser ablation cell, the first of its kind in the U.S. (introduced at the 2009 Fall AGU meeting in San Francisco). This cell can hold significantly more samples and standards than regular laser ablation cells.

Aqueous solutions are sampled by a variety of nebulizers and spray chambers from Elemental Scientific Inc. Desolvation of aqueous solutions improves sensitivity and decreases oxide and hydride interferneces. We use Apex, Apex-IR, Aridus1 and Aridus2 systems from CETAC Technologies.

Our lab also provides access to a HEPA-filtered exhaust hood, a Millipore water purification system (Elix10, Element) and analytical balances.

Last updated: July 24, 2012

Enlarge Image

The WHOI ICPMS facility houses a Neptune multi-collector ICPMS (center), two single-collector Element2 IPCMS, multiple laser ablation system (213 nm, 193 nm) and complementory sample preparation equipment. (Tom Kleindinst)

Enlarge Image

Element 2, a high resolution single collector.

Copyright ©2007 Woods Hole Oceanographic Institution, All Rights Reserved.
Mail: Woods Hole Oceanographic Institution, 266 Woods Hole Road, Woods Hole, MA 02543, USA.
E-Contact: info@whoi.edu; press relations: media@whoi.edu, tel. (508) 457-2000
Problems or questions about the site, please contact webdev@whoi.edu