NEW STABLE ISOTOPE MASS SPECTROMETERS INSTALLED

Through a "Middelgroot" instrument grant from NWO-ALW the department of MBT was able to purchase two new stable isotope mass spectrometers with several applications. After a long delay the instruments, a Thermofinnigan Delta^{PLUS} and a Delta^{PLUS} XL, were installed in October/November 2001 and were fully running by the beginning of 2002. Attached to the mass spectrometers are several applications. Firstly, a so-called Gas Bench and Elemental Analyzer are hooked-up to the Delta^{PLUS} to analyse carbonates/dissolved inorganic carbon and bulk organic matter, respectively. Examples of the types of analyses which can be performed using the GasBench are ^{13}C and ^{18}O analyses of carbonates, ^{13}C analysis of dissolved inorganic carbon and ^{18}O of water. The Elemental Analyzer will be mostly used for the ^{13}C and ^{15}N analysis of sedimentary organic matter. Secondly, a gas chromatograph with cumbustion/pyrolysis interface is hooked up to the Delta^{PLUS} XL. Through this application, individual organic compounds can be analysed for their ^{13}C, ^{15}N, ^{18}O and ^{2}H-contents. Finally, a thermochemical analyzer is also hooked-up to Delta^{PLUS} XL isotope mass spectrometer to enable the analysis of ^{2}H-contents of water and bulk organic matter. The installation of these machines has already provided a substantial boost to the isotope research in the department of MBT and is increasingly used by other departments within NIOZ and outside research institutes and universities.

Installed Thermofinnigan Delta^{PLUS} XL stable isotope mass spectrometer with gas chromatograph and combustion/pyrolysis interface for measuring the stable isotopes of individual organic compounds.

Installed Thermofinnigan Delta ^{PLUS} isotope mass spectrometer with GasBench for measuring the stable isotopes of inorganic carbon in seawater and sediments.