

Membrane Inlet Mass Spectrometry (MIMS)

SOLUTIONS FOR ANALYSING GROUND, ESTUARY, RESERVOIR AND SEA WATER



Water quality is an essential factor in our lives. It is also a major problem in many parts of the world today. Fertilisers, pesticides and other chemicals are affecting the quality of our water, and water analysis instruments have become fundamentally important tools in the on-going fight to preserve and improve our quality of life. The Hiden HPR-40 DSA MIMS is one of these instruments.



Key Features

- ▶ The HPR-40 DSA MIMS system is offered with a wide range of sampling inlets, including flow-through inlets with integrated thermocouple for *in-situ* temperature measurement, dual probe inlets for simultaneous analysis in and above liquid, and enzyme kinetics probes.
- ▶ Sensitivity to < 0.5 PPB.
- ▶ It allows for *in-situ* mass determination of dissolved species with real time data acquisition and display.
- ▶ The atomic mass range is 200 amu as standard, with 300 or 500 amu mass ranges offered as options.
- ▶ Software applications provide for user control of the mass spectrometer, inlet system control, data acquisition from the mass spectrometer and external devices, and temperature and pH probes.

HPR-40 DSA Membrane Inlet Mass Spectrometer - MIMS



APPLICATIONS IN WATER /SOIL/SLUDGE ANALYSIS:

The Hiden HPR-40 DSA MIMS instrument is versatile, robust and portable for use in the laboratory and field based applications including:

Ground water study of 5 biologically/chemically inert gases - He, Ne, Ar, Kr, Xe - and their reaction to physical external forces in the environment

- **France** - <https://geosciences.univ-rennes1.fr/en/experiments-hydrology-and-hydrogeology-leth2>

The impact of sludge amendment on gas dynamics in an upland soil: Monitored by membrane inlet mass spectrometry (MIMS)

- **UK** - University of Bath.

Diurnal variation of stream denitrification in a southeast China coastal watershed

- **China** - Coastal and Ocean Management Institute, Xiamen University.
- **Sweden** - Dept. of Water Resources Engineering, Lund University.

Enhancing denitrification using a carbon supplement generated from the wet oxidation of waste activated sludge

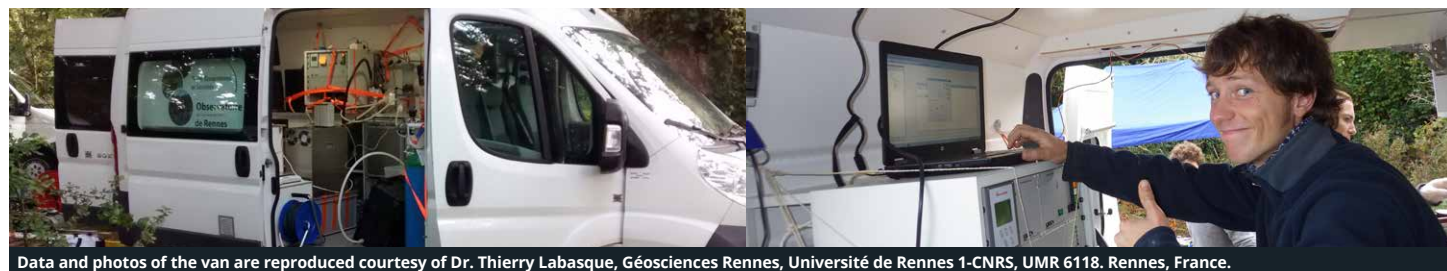
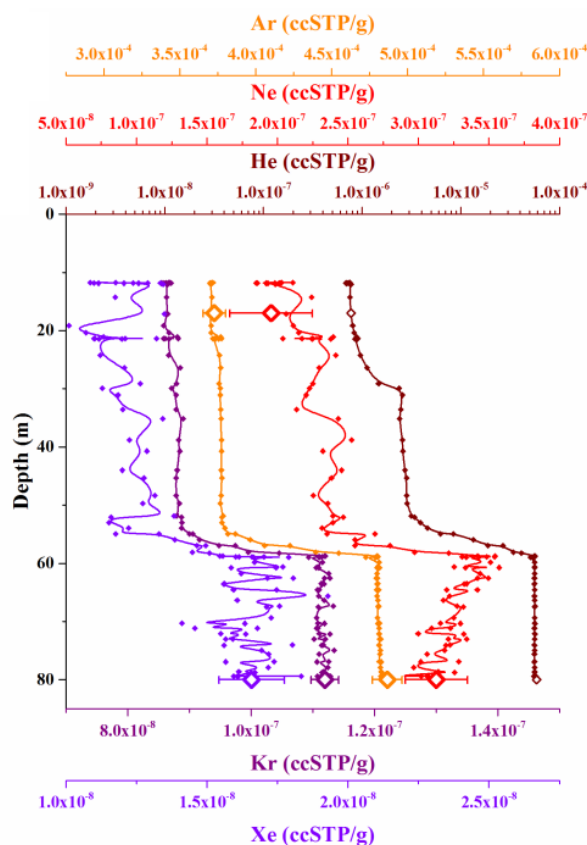
- **Australia** - University of Queensland.
- **New Zealand** - Sustainable Design, Scion.

Oceanic Trace Gas Measurements by Membrane Inlet Mass Spectrometry (MIMS)

- **Canada** - University of British Columbia, Institute of Ocean Sciences - Fisheries and Oceans.
- **USA** - Universities of California, Delaware, and Charleston.

Methane stimulates massive nitrogen loss from freshwater reservoirs in India

- **India** - CSIR-National Institute of Oceanography, Goa.
- **Germany** - Max-Planck Institute for Marine Microbiology, Bremen.
- **UK** - National Oceanography Centre, University of Southampton.



Data and photos of the van are reproduced courtesy of Dr. Thierry Labasque, Géosciences Rennes, Université de Rennes 1-CNRS, UMR 6118, Rennes, France.