



# Welcome to RIHN Laboratory !

## For use of the RIHN laboratory facilities

—Environmental Measurements are the Basis for Integrated Research in the Field of Global Environmental Studies—

Laboratory and Analysis Division(LAD) of RIHN Center maintains the facilities and provides technical assistance in Laboratory in Research Institute for Humanity and Nature (RIHN).

RIHN views global environmental problems as matters of interaction between humanity and nature, as well as between human lifestyles and cultures. For this reason, RIHN collects information across disciplines and integrates research projects to achieve integrated research in the field of global environmental studies.

Environmental measurements, conducted in laboratory facilities with cutting-edge technologies, such as stable isotope measurement, element determination and DNA analysis, are essential for this type of research. Only through long-term monitoring of the global and regional environment does it become possible to delineate changes in interactions between humanity and nature, thereby enabling new discussions and exploration of solutions.

LAD plays a leading role in accomplishing the RIHN mission by cooperating with many research institutes and researchers from within Japan and abroad, who take part in RIHN research.

We hope that researchers can make optimal use of the RIHN facilities to achieve integrated research in the field of global environmental studies.

## Contact information

If you want to use the shared instruments, please access our URL or ask by E-mail.

E-mail [doitai@chikyu.ac.jp](mailto:doitai@chikyu.ac.jp)

URL <http://www.chikyu.ac.jp/laboratories>

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## About Shared Instruments

The RIHN facilities have shared instruments, which are available for outside universities and research institutes, as well as for RIHN research.

- Thermal Ionization Mass Spectrometer (TIMS)  
-TRITON
- High-Resolution Multicollector ICP-MS  
-NEPTUNE plus
- Gamma-ray Spectrometer  
-MCA7700
- Stable Isotope Ratio Mass Spectrometer (IRMS)  
-Delta V Advantage, Delta V Plus, Delta plus XP  
[H, O, C, N, S] in organic matters;  
[H, O] in water; [C, O] in carbonate
- Inductively Coupled Plasma-Atomic Emission Spectrometry  
-ICAP6200
- Inductively Coupled Plasma Mass Spectrometer (ICP-MS)  
-7500cx
- Ion Chromatograph  
-ICS-3000
- Liquid Water Isotope Analyzer  
-L2120-i L2130-i

Staff will support  
users' experiment!



# Laboratory Guide



# RIHN Facilities Overview

(As of April 1, 2016)

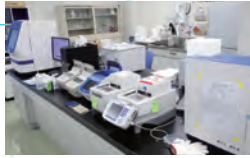


## Room 1 Incubation Room



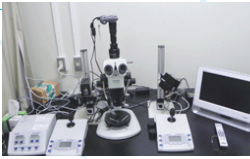
Three temperature-controlled incubation rooms, set to 5°C, 15°C and 25°C, are used to cultivate biological specimens.

## Room 2 Biological Lab. 1



This room is used to prepare biological specimens and to conduct analyses using a DNA sequencer.

## Room 3 Microscope Lab.



Microscopes, of various types and with different capabilities, are provided for sample observation. A system for precise measurement of growth rings and a micro-dessicator for collection of micron-sized samples are also available.

## Room 4 Biological Lab.2



The clean room in this laboratory is used to prepare samples for DNA analysis.

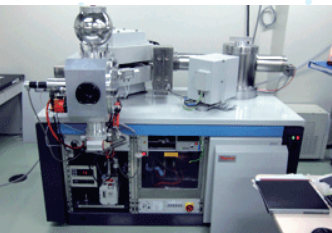
## Room 6 Multi-purpose Lab. 1



In this room, fine particles contained in various environmental samples, ranging from soil to snow and ice, are measured. Various other general experiments are also conducted.

## Room 7 Isotope Analysis Lab. 1

Two types of mass spectrometers are used to perform isotope-ratio mass spectrometry measurements for metal elements and heavy elements. Using a gamma-ray measurement system, radiological measurements are also conducted.



Thermal Ionization Mass Spectrometer (TIMS) -TRITON



High-Resolution Multicollector ICP-MS -NEPTUNE Plus

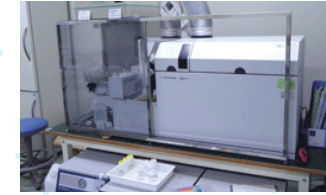
## Room 17 Sample Preparation Room

Equipment is provided for efficient sample processing, including drying, crushing, cutting, grinding and separation. This room is used primarily for processing environmental samples.

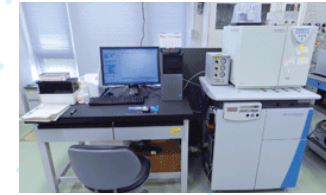


## Room 8 Isotope Analysis Lab.2

Five types of magnetic sector mass spectrometers are used to measure stable isotope ratios (H, C, N, O and S). Elemental analyses are also pursued using an ICP mass spectrometer.



Inductively Coupled Plasma Mass Spectrometer (ICP-MS) - 7500cx



Stable Isotopic Ratio Mass Spectrometer (IRMS) -FlashEA -ConFloIII-DeltaV Advantage

## Room 10 Chemical Analysis Lab.

Elemental analyses are pursued in this laboratory using an ion chromatography system, an ICP optical emission spectrometer. Water isotope analyses are also performed using a CRD-based isotopic water analyzer.



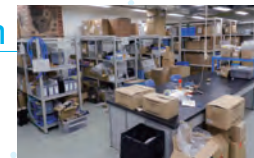
Water Isotope Analyzer -L2130-i



Ion Chromatograph -ICS-3000

## Room 12 Fieldwork Preparation Room

Accessories and consumable items required for field observations and surveys are stored in this room. Equipment adjustments are carried out here before use in surveys.



## Room 14 Clean Room

Environmental samples undergo advanced processing in this clean laboratory environment, which has a cleanliness class of 100 to 1000.



## Room 18 Sample Storage

Four temperature-regulated rooms (20°C, 5°C, -10°C to 0°C and -30°C) store samples such as snow, ice, living organisms, water and archaeological antiquities.

