

Analytical support for IODP core sample study by researchers from abroad

Introduction

Kochi Core Center (KCC) is a nationwide joint-use research facility open to all researchers in Japan. Part of this analytical facility is open to the researchers from abroad for analyzing the IODP/Legacy cores stored in the KCC. The equipment accessible to foreign researchers are :

1. XCT scanner (Toshiba)
2. XRF core logger (ITRAX)
3. XRF core logger (TATSCAN)
4. MSCL (Geotek)
5. MSCL-color (Geotek)
6. Core imager

Requests for analyzing samples by using these equipment are evaluated by analytical facility committee in the KCC, and if the committee approves the request, samples may be analyzed by researchers or their representatives by using these equipment. The KCC staff will not conduct sample and data analysis, but will set up the equipment for analysis, teach basic operation of the equipment, and assist in preparation of samples at the beginning of analysis.

Usage Fee

Two of the above-mentioned equipment are available on payment basis :

XCT scanner (Toshiba) : JPY 75 per scan (1 scan covers 4 cm interval, so 150 cm long section will require 38 scans, cost JPY 2850, and take 10 min.; imaged slice thickness, 0.5 mm)

XRF core logger (ITRAX) : JPY 3000 per hour (measurement at 1 point takes about 10 sec., but preparation to begin measurement takes 15 min., so 150 cm long section measured at every 1 cm will take about 40 min.; minimum resolution possible, 0.2 mm)

The usage fee can be paid in cash or through bank transfer within 21 days of issuing an

invoice for the usage fee. Other equipment do not require payment of usage fee, however, users may be asked to provide a consumable film* for TATSCAN XRF core logger, if number of core sections to be analyzed is more than 10.

*4 micron Ultralene film, 73 - 76 mm wide or Prolene® mit 4.0 µm (CH416)

Application procedure

As a first step, prospective users are advised to contact curator (curator@jamstec.go.jp) to check machine time availability at least 3 months before their visit to the KCC. Approximate number of samples and analytical parameters should be mentioned in this initial communication, so that machine time estimation can be made. Please understand that the KCC is a nationwide joint use research facility, and therefore, equipment may have already been reserved by a researcher in Japan. Researchers based in Japan must apply through the [Nationwide Joint Use System of Kochi University](#) to avail the analytical facility.

If machine time is available, user is required to submit a sample request in the IODP sample request database (<http://web.iodp.tamu.edu/sdrm/>) for analyzing/sampling the IODP/Legacy cores stored in the KCC. It should be clearly mentioned in the request that the analytical facility (name the equipment) of the KCC will be utilized if the request is approved. After submission of the request, curator will contact the user to confirm the research and analysis plan, and then forward the request to a committee in the KCC that approves the analytical usage requests. If there are any questions from the committee, the curator will forward the same to the user. After approval of the request by the committee, IODP/Legacy core samples may be analyzed in the KCC by the user or his/her representative.

Acknowledgement

Users are required to acknowledge the Kochi Core Center (KCC), Japan in all publications that will be based on the data generated by the above-mentioned equipment.

Notes

The XCT scanning of cores provides image resolution in millimeter range. Therefore, particle size studies focusing on clay or silt content may not be feasible.

The XRF scanner gives only "relative" concentrations of elements/oxides. If you are looking for accurate concentrations of the elements/oxides, you should perform chemical analysis of discrete samples by using ICP-MS, etc.