

Geochemistry and Isotope Geochemistry: Fundamentals to Applications

University of Kerala, Department of Geology

February 15 – 25, 2017

Overview

Immense advances in instrumental and methodological technology in the last two decades have given earth scientists the opportunity to investigate Earth systems at ever increasing levels of precision and accuracy. Earth scientists have presently access to the complete Periodic Table of Elements so that which chemical data to choose from the immense number of data available, and how to interpret them in the context of geological questions and current understanding has become a critical issue. Today, an increasing number of geochemical, isotopic, and age data are produced in specialized laboratories worldwide and obtained via interdisciplinary collaborations and/or simply on a service basis. Scientific use and interpretation of such data thus heavily rely on the ability to assess the data quality and this qualification plays a pivotal role in geoscience these days. This challenge equally involves decision makers in research institutes and universities, consulting and mining and mineral exploration companies.

This first GIAN course in the University of Kerala is designed to enable geoscientists (both from academia, industry and professional organizations) and students at advanced levels, not just geochemists alone, to understand the geochemical behaviour of elements, to be able to judge their significance, and to decide which data bear pertinent information regarding specific geoscientific, environmental and economic issues and ultimately enable them to infer scientifically sound data interpretations. The course addresses the following topics: Periodic Table of Elements and its geochemical relevance; Distribution of trace elements in magmatic systems; Geochemical characteristics of plate tectonic settings; Isotope geochemistry; Geochronology; Methods of sample preparation, data presentation, and assessment of data quality.

Modules	A: Nucleosynthesis & element distribution: Feb 15 – 17, 2017 B: Geochemical reservoirs: Feb 18 – 19, 2017 C: Isotope geochemistry: Feb 20 – 23, 2017 D Sample analysis and data presentation: Feb 24 – 25, 2017 Maximum number of participants for the course : 50
Course suits you	<ul style="list-style-type: none">▪ If you are a research scholar making use of stable/unstable isotopes in trying to decipher Earth processes▪ If you are a professional already making use of isotopes but would like to brush up on the fundamentals and share in on newer developments in analysis and processing of data▪ If you use geochemistry intensely in your research and/or teaching and would like to acquire in depth knowledge on the interplay of isotope systematics, geochemistry and magmatic processes▪ If you are a student or faculty from an academic institution interested in exploring the potential of isotope geology and geochemistry in your studies▪ If you are from a professional organization thats tasked with mineral exploration and would like to characterize ages

Fees

The participation fees for taking the course is as follows:

Participants from abroad : US \$500

Industry/ Research Organizations: Rs.10,000

Faculty from academic Institutions: Rs. 5,000

Research scholars: Rs. 1000

Masters students: Rs.500

The above fee includes course notes, and associated material, free internet usage, working lunch. Participants will have to pay for their own accommodation and transport. No TA/DA can be paid.

The Faculty



Prof. Ernst Hegner is from the Department für Geo- und Umweltwissenschaften, Sektion Mineralogie, Petrologie und Geochemie, Ludwig-Maximilians Universität Munich, Germany. He studies the geochemical evolution of Earth and is interested in geochronological and analytical methods. He is a Professor of Geochemistry and the Supervisor of the Radiogenic Isotope Facility of the University. <http://www.en.mineralogie.geowissenschaften.uni-muenchen.de/personen/profs/hegner/index.html>

The Coordinator



Dr AP Pradeepkumar heads the Department of Geology, of the University of Kerala, located in Trivandrum, India. His basic interest is in metamorphic petrology and mineralogy. He had his education in University of Kerala and Stuttgart, Germany. Several of his PhD students use geochemical and isotopic analyses in their work on the metamorphic evolution of the rocks of the southern granulite terrain, and some work on cosmogenic radionuclide dating of erosion and denudation. The Department of Geology, University of Kerala has access to the DST-PURSE funded trace element and isotope laboratory (ICPMS and LA), besides several other sophisticated instruments like AFM, SEM, XRD, FTIR.

For course details contact

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