

Mantle Petrology: Probing the Earth's Interior

Overview

The Earth's mantle has remained the reservoir for major magmatic events that have contributed in the making of the continental crust. Trace element and isotopic ratios from least contaminated magmas strongly suggest that the mantle is heterogeneous on a variety of spatial and temporal scales. The mantle xenoliths, sub-lithospheric inclusions although small in number further lend support to mineralogical and compositional diversity of mantle. In India, occurrences of ophiolites, ultramafic-mafic complexes and xenoliths in alkali basalt and kimerlites offer a peep into the sub-lithospheric mantle. It is therefore pertinent to understand the changing nature of the mantle and the processes involved in bringing this change via-á via its impact on the magma generation below the Indian continent. This workshop aims to address some of the pertinent issues. The intended topics that will be covered during this course will include phase transformations and petrography of the mantle, mantle xenoliths and xenocrystic assemblage, modal metasomatism, geochemical evolution and geochemical differentiation of the Earth, etc.

Objectives

- Updating and sensitizing students and young faculty regarding the recent developments in mantle geochemistry.
- Use of REE and trace element geochemistry as fingerprints to mantle processes.
- Mantle as a source of mafic magmatism and as a source for building the continental crust.

Modules	October 03 – October 13, 2017 10 Hours Lectures 10 Hours Tutorial Number of participants for the course will be limited to thirty.
You Should Attend If...	<ul style="list-style-type: none">▪ Students registered for MSc/PhD▪ Faculty from academic institutions in Geology/Earth Sciences/Chemistry. A maximum of 50 students will be accommodated
Fees	The participation fees for taking the course is as follows: Students from SPPU : Rs. 500/- All Others: Rs. 1000/-

The Faculty



Professor Michel Grégoire is an internationally acclaimed geoscientist with specialization in petrology, mineralogy and geochemistry, with emphasis on the study of ultrabasic and basic rocks from lower crustal and mantle domains. He is

currently undertaking collaborative work on petrological and geochemical studies of ultrabasic and basic rocks from other areas in the world (Patagonia, Kerguelen Islands, Philippines, French Massif Central, Poland, Algeria, Oman, California, Cameroon, India and South Africa). All these studies are focusing on the nature and evolution of the various metasomatic melts percolating the oceanic and sub-continental upper mantle both in intraplate and subduction zone settings. He was holding the position of Directeur de recherche/Senior Scientist at the CNRS, Observatoire Midi-Pyrénées, France. He leads several EU programmes in his area of expertise and has more than 30 years of experience in teaching, and research. He has several Academic Awards and Distinctions to his credits like the A. Lacroix Prize (1994) conferred by the French Society of Mineralogy and Crystallography, AUSEL Prize (1995) conferred by the Scientific and Economic University of the Loire (France) and the Honorary Associate (2001-2002) Macquarie University, Australia

His vast experience in the domain of Mantle Petrology and geochemistry will benefit students of MSc/PhD course and Faculty from academic institutions from India.

Course Co-ordinator

Prof. N. R. Karmalkar

Phone: +91-9823011747

E-mail: nrkarmalkar@gmail.com

.....
<http://www.gian.iitkgp.ac.in>