

CHAPTER 19

GEOLOGY

Doctoral Theses

140. BANERJEE (Apurba)
Sedimentological and Geochemical Studies in Parts of Vindhyan Basin (Satna, Maihar and Nagod Areas).
Supervisors : Prof. D. M. Banerjee and Dr. Pankaj Srivastava
Th 15675

Abstract

Studies to understand the basinal environment, provenance and tectonic setting responsible for the formation of carbonates, sandstones and shales of the Bhandar Group of rocks exposed in parts of Satna, Maihar and Nagod areas of central India. Various inferences drawn about the environmental conditions during the sedimentation of the Bhandar Group clearly suggest that this rock sequence cannot be assigned to a single prograding or retrograding marine sequence. Instead, it has to be emphasized that this sequence is made up of several subsidiary sequences deposited in different subenvironments in the epicontinental Vindhyan Sea.

Contents

1. Introduction. 2. Methods and materials. 3. Nagod limestone. 4. Bhandar sandstone. 5. Sirbu Shale. 6. Discussion. References.

141. NIKESH RANJAN
Geochemistry of Himalayan Foreland Sediments and Soils in Parts of NW Himalaya.
Supervisors : Prof. D. M. Banerjee and Dr. Pankaj Srivastava
Th 15671

Abstract

Investigates the behavior of soil organic carbon (SOC) in agricultural landscape and to determine the relationship between ¹³⁷Caesium, soil erosion, and soil carbon distribution

patterns in investigated cultivated farm. The amount of SOC in the depositional sites of the investigated farm increases by ~20% in comparison with the upslope part of the farm. The result highlights the field evidence of tillage induced movement of ^{137}Cs and SOC along the slope regime following same physical processes and pathways

Contents

1. Introduction. 2. Regional geology. 3. Methodology. 4. Sediment geochemistry. 5. Soil geochemistry. 6. Soil radioactivity. 7. ^{137}Cs tracer studies. 8. Discussion. References and appendices.

142. PUROHIT (Raja Ram)
Geochemistry of Arsenic Contaminated Groundwater and Sediments in Parts of West Bengal and Bangladesh with Special Reference to Joypur Village in North 24 Parganas.
 Supervisor : Prof. D. M. Banerjee
 Th 15672

Abstract

Carries out a detailed investigation in terms of geology, geomorphology, geohydrology of a part of the Ganga Delta Plain and determine the chemical constituents present in the groundwater and the enclosing aquifer material. Determines the style of arsenic migration within the subsurface aquifers. Ascertain the cause of introduction of toxic arsenic to the groundwater. Efforts have been made to develop a model to demonstrate the sources of arsenic and the cause of its transfer from the sediment in to the groundwater.

Contents

1. Introduction. 2. Geology and geomorphology of the Bengal Delta Plain (BDP). 3. Methodology. 4. Water geochemistry. 5. Sediment geochemistry. 6. Discussion and conclusion. References and list of appendices.

143. RABHA (Swapna)
Paleocene-Eocene Planktonic Foraminiferal Biostratigraphy in a Shallow Neritic Environment with Special Reference to Paleocene/Eocene Boundary in Jaisalmer Basin, Rajasthan, India.
 Supervisor : Prof. Prabha Kalia
 Th 15807

Abstract

It focused on the Paleocene to early Eocene planktonic foraminiferal biostratigraphy in a shallow neritic onland sections in Jaisalmer Basin. Also incorporates the identification, description, documentation and correlation of the planktonic foraminiferal assemblages. The stratigraphic sections within the Paleogene outcrop terrain near Sanu (SDC-49) with complete Paleocene sequence and Upper Paleocene to Lower Eocene section near Joga (JOGA-99) together form the composite Paleocene-Eocene litho-column.

Contents

1. Introduction. 2. Systematic paleontology. 3. Biozonation. 4. Discussion and conclusion. References and annexures.

144. SHASHANK SHEKHAR
Geology and Structure with Special Emphasis on Kink Band Development Around Srinagar-Garhwal Area, Uttarakhand, India.

Supervisors : Prof. P. S. Saklani and Prof. A. M. Bhola
 Th 15673

Abstract

Aims to understand regional geology, structural and tectonic setting of the area. The emphasis has been given to understand various geological aspects, which operated in the region, and to have an insight in to stress and strain that affected the lithological units. Genetic links of different structures and the geological processes is also attempted. Describes different macro, meso and micro structural features and their relationship with the tectonics. The North Almora Thrust (NAT) has been studied in detail with reference to fault system together with associated stress and strain. Focuses on geological and structural mapping and field based study of macro and meso structural features and their interrelationships. Statistical analysis is used as a tool to ascertain attitude and interrelationship of planar and linear structures. Moreover the orientation of vertical folds is studied by statistical analysis using stereonet and rotational movement is affirmed.

Contents

1. Introduction. 2. Geology. 3. Structure and tectonics of the area. 4. Petrography. 5. Analysis of kink bands. 6. The metamorphic history. 7. Summary and conclusions. References.

145. TRIPATHI (Shubham)
Geological Characterisation of the Carbonate-Hosted Polymetallic Prospect at Imalia, Mahakoshal Belt, Central India.
 Supervisor : Prof. Mihir Deb
 Th 15670

Abstract

Attempts to study one of the prominent noble metal prospects in the northern part of the country, striving toward a detailed geological characterization of the prospect. Attempts to understand the geological attributes of important carbonate-hosted polymetallic noble metal prospect, its petro-mineralogy and genesis and geological significance in the light of the regional setup of western Mahakoshal belt of Central India. Studies comprehensive understanding of the nature and genesis of Imalia polymetallic deposit.

Contents

1. Introduction. 2. Regional geology. 3. Geology and mineralisation at Imalia. 4. Petrography and mineral chemistry of host rocks and ORES. 5. Conditions of ORE formation. 6. Geochemistry of host rocks and ORES. 7. Attributes and modeling of Imalia ORES. References and appendix.

146. WANJARI (Nishchal)
Geochemistry of Amgaon Gneissic Complex, Central India.
 Supervisor : Prof. Talat Ahmad
 Th 15674

Abstract

Identifies the distinct entities of Amgaon gneissic complex, based on the detailed field relationships, petrological, geochemical and isotopic studies. This is an attempt to gain new insights into the Precambrian crustal evolution in central India, as hitherto no reliable ages or even geochemical data from the basement Amgaon gneissic complex (AGC) of central India are

available. Reports new geochemical data comprising major oxides, trace elements and rare earth element data coupled with whole rocks Sr, Nd and Zircon U-Pb isotopic data. The interpretations have major implications for the understanding the crustal evolution history of the central Indian craton, as this study puts the information on the basement rocks in a new perspective. Describes the evolution of the granite-gneiss component of the Amgaon gneissic complex.

Contents

1. Introduction. 2. Methodology. 3. Major element geochemistry and classification. 4. Trace element geochemistry. 5. Rare earth element geochemistry. 6. Isotopic studies of granitoids of AGC. 7. Conclusions. References and appendices.

M.Phil Dissertations

147. BALAKRISHAN S.
Petrogenesis of Alkali Granites and Trondhjemite Rocks of Kullampatti-Suriyamali Batholith, Salem District, Tamilnadu, India-Based Upon Petrographic and Geochemical Data.
Supervisor : Prof. P. K. Verma
148. MISHRA (Bhupendra Kumar)
Contamination of Arsenic in Yamuna Flood Plain, Delhi Area.
Supervisor : Prof. C. S. Dubey