DEPARTMENT OF GEOLOGY

ALIGARH MUSLIM UNIVERSITY, ALIGARH

under the aegis of

INDIAN ASSOCIATION OF SEDIMENTOLOGISTS

organizes

TRAINING-CUM-FIELD WORKSHOP

DECODING CLASTIC SEDIMENTARY SYSTEMS

(FEBRUARY 20-25, 2024)

- SPONSORS -

ABOUT TRAINING-CUM-FIELD WORKSHOP

Sedimentology plays a key role in hydrocarbon exploration as it helps in identifying and interpreting sedimentary environments, which in turn helps in locating potential petroleum reservoirs. The training-cum-field workshop aims to impart training to students, research scholars, early career researchers and industry professionals on various aspects of clastic sedimentary systems including sequence stratigraphy, basin analysis, prospect evaluation, exploration of unconventional resources, depositional environment and paleocurrent analysis of siliciclastic rocks, etc. The workshop shall also comprise tutorials and hands-on exercises on sequence stratigraphy, paleocurrent analysis, thin section study of siliciclastic rocks and drone-based topographic change detection. For a better understanding of the surface processes of the earth, interdisciplinary study of allied branches of geosciences is necessary. So, the workshop shall also focus on highlighting the importance and use of recent technologies including remote sensing and drones in the field of sedimentology. The training shall include classroom lectures to enhance the knowledge of clastic sedimentary systems and tutorials to carry out exercises and provide hands-on training to the young students and experienced professionals. The field workshop will be conducted in nearby sedimentary basins including Vindhyan, Ganga Plain and Bayana Basin.

ABOUT ALIGARH MUSLIM UNIVERSITY

The Aligarh Muslim University (AMU) is a public central university located in Aligarh, Uttar Pradesh. It was established in 1920 and evolved out of the Mohammedan Anglo-Oriental (MAO) which was set up in 1875 by the great visionary and social reformer, Sir Syed Ahmad Khan. The AMU is accredited by NAAC (National Assessment and Accreditation Council) in 'A+' grade and occupies a unique position amongst universities and institutions of higher learning in the country. It is spread over 467.6 hectares in the city of Aligarh, Uttar Pradesh and has three off-campus centers viz. AMU Malappuram Campus (Kerala), AMU Murshidabad Centre (West Bengal), and AMU Kishanganj Centre (Bihar). The AMU offers more than 300 courses in the traditional and modern branches of education. It draws students from all corners of the country as well as foreign countries, especially Africa, West Asia and Southeast Asia. In some courses, seats are reserved for students from SAARC and Commonwealth Countries. The University has 13 faculties viz. Agricultural Science, Arts, Commerce, Engineering & Technology, Law, Life Sciences, Medicine, Management Studies & Research, Science, Social Sciences, Theology, Unani Medicine and International Studies with each faculty composed of several Department of Studies. The University also maintains a number of Colleges, Institutes, Centres and Schools. Notably among them are Women's College, Centre of Professional Courses, Interdisciplinary Biotechnology Unit, Zakir Hussain College of Engineering & Technology, Ajmal Khan Tibbiya College, Jawaharlal Nehru Medical College, Dr. Ziauddin Ahmad Dental College, Institute of Ophthalmology, Centre for Advanced Studies in History, Centre for Women Studies, Centre for Nehru Studies, University Polytechnic, University Women's Polytechnic, K.A. Nizami Centre for Quranic Studies. The University also runs 10 schools including one for the visually challenged.

ABOUT DEPARMENT OF GEOLOGY

Teaching of geology started at the Aligarh Muslim University in 1946 and 1951 at under-graduate and post-graduate levels, respectively. The Department of Geology acquired its own building in 1961 and the foundation stone of its building was laid down by Dr. D.N. Wadia (then Geological Adviser of the Government of India) on February 05, 1957. The first Coal Petrology Laboratory of India was established in this Department. The thrust areas of research of the Department include geochemistry, sedimentology, hydrogeology, environmental geology, remote sensing, and micropaleontology. The Department offers courses of B.Sc. (Hons.), M.Sc. (Applied Geology), P.G. Diploma in Hydrogeology and Ph.D. So far, the Department has produced 04 D. Sc., 185 Ph.D. and 149 M.Phil. degrees. The Department has been active in scientific deliberations and hosted several national and international conferences and lectures by eminent national and international geoscientists. The Department of Geology has the distinction of providing leadership in the area of sedimentology in India. In recognition to this, the Indian Association of Sedimentologists has established its Headquarter at the Department of Geology, Aligarh Muslim University, Aligarh. The University Grants Commission has also recognized the contribution of the Department in sedimentology and environmental geology, and sanctioned DSA in sedimentology and environmental geology was sanctioned in 1992. The successful completion of DSA Phase-I of the Department led to its extension as DSA Phase-II and subsequently the Department was also selected for COSIST assistance for the development of its infrastructure. The UGC has sanctioned a DRS-I (SAP) to the Department of Geology for the upliftment of teaching and research under the following thrust areas: a) Petrology/Geochemistry b) Environmental Geology. To improve the S&T Infrastructure of the Department, the Department of Science and Technology, Govt of India awarded FIST Program for five years (2018-22).

ABOUT INDIAN ASSOCIATION OF SEDIMENTOLOGISTS

The Indian Association of Sedimentologists was formed and duly registered in 1976 with its headquarters at the Department of Geology, Aligarh Muslim University, Aligarh in recognition of leading research carried out in the Department in the field of sedimentology. The Association is by now a highly qualified scientific forum with experienced sedimentologists as its Fellows and Life Members representing universities, national and state owned geological and geophysical institutes and organizations from all over the country. Also, on the rolls of the IAS are Fellows and Life Members from Bangladesh, Canada, USA and England. The prime objective of the Association is to promote recent advances in sedimentary petrology, sedimentology, applied sedimentation and basin modelling, and allied sciences. Equally important objective is to encourage interactions among the sedimentologists at the level of universities, national institutes and exploration companies of India engaged in the study of sedimentary basins regarding their evolution, origin and resource potential.

PROPOSED LECTURES/TUTORIALS

Siliciclastic depositional systems: Processes and Products (with special emphasis on rock record)

An introduction to Sequence Stratigraphy: A state-of-the art technique for Basin Analysis

Thin section study of quartz arenite, feldspathic arenite, arkose, lith arenite, etc.

Exercises of Paleocurrent Analysis

Exercises of Fundamentals of Sequence Stratigraphy

Basin analysis to prospect evaluation - Protocol for hydrocarbon exploration

Exploration of unconventional resources

Validation of Fluvial Models in the Himalayan Foreland Basin, India

Mud and Mudstones: a repository of information on low energy environment and its processes

Exercise on sedimentary rock classification

Remote Sensing of fluvial systems, especially on the rapid river incision and sediment budget in Rishiganga following a major ice-rock avalanche

Drone-based topographic change detection

PROPOSED FIELD WORKSHOPS

Field visits will be carried out to train the participants in data collection and curation in well documented sedimentary basins located near Aligarh. The proposed sedimentary basins for the field workshops are:

(i) Vindhyan in Fatehpur Sikri-Rasulpur and Bandh Baretha **(ii) Bayana Basin** (Delhi Supergroup) (150 km)

RESOURCE PERSONS

Dr. Kalachand Sain
Director, Wadia Institute of Himalayan Geology, Dehradun

Prof. Partha Pratim Chakraborty
Department of Geology, University of Delhi, Delhi

Prof. Uma Kant Shukla
Department of Geology, Banaras Hindu University, Varanasi

Mr. Riyasat Husain
Expert Petroleum Geoscience Consultant
Former. TPL Specialist 1 Geology, Kuwait Oil Company &
Suptdg. Geologist, Oil & Natural Gas Corporation, India

Dr. Sandip K. Roy
Expert Petroleum Geoscience Consultant

Dr. Yunus Ali Pulpadan
Assistant Professor, Dept. of Earth & Environmental Sciences, IISER Mohali

Dr. Arvind K. Singh
Scientist-C, Birbal Sahni Institute of Paleosciences, Lucknow


Dr. Kalachand Sain


Prof. P.P. Chakraborty


Prof. U.K. Shukla


Mr. Riyasat Husain


Dr. Sandip K. Roy


Dr. Yunus Ali P.


Dr. Arvind K. Singh

REGISTRATION | IMPORTANT DATES

Interested participants are requested to register using the Google Forms link/QR code given below on or before Feb 10, 2024. Prior to registration, the interested participants should transfer the registration fee in the bank account whose details are mentioned below:

UG Students: Rs. 1000*
PG Students: Rs. 1500*
PhD Students: Rs. 2000*
Early Career Researchers: Rs. 2500
Industry Professionals: Rs. 20000

Account Holder: Chairperson Department of Geology
Bank: Canara Bank, AMU
Account Number: 5247101004452
IFSC: CNRB0005247
Register: ~~https://forms.gle/Z7kKaqmy4BQaSDrs9~~

*Copy of student ID card/bonafide certificate from HoD required to claim concessional rates for students.

SCAN TO REGISTER

Registration: ~~on or before Feb 10, 2024~~ **CLOSED**

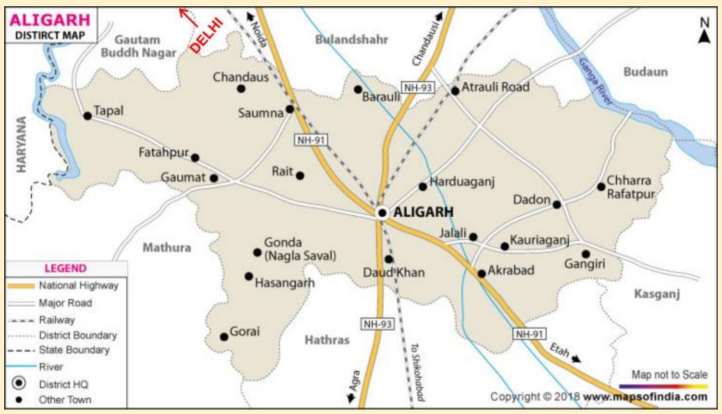
Lectures/Tutorials/Field Workshop: Feb 20-25, 2024

ACCOMMODATION

Limited accommodation will be arranged on a payment basis in the University Guest House and locally available Institutional Guest Houses, Private Hotels/ Lodges based on request and advance payment. The charges for single and double occupancy bedrooms vary from Rs.1000/- to 6000/- per day for all the above categories. Delegates are requested to convey their commitments regarding the type of accommodation and food to the organizing committee at the earliest.

ABOUT ALIGARH

The city of Aligarh is the district headquarters of Aligarh district, in the Northern Indian state of Uttar Pradesh. Aligarh is located approximately 150 km south-east of the capital city of New Delhi and 85 km north of Agra. Weather during February is pleasant, but light winter clothes may be required. GPS COORDINATES OF IMPORTANT LOCATIONS: **Department of Geology** [27°54'49.5"N, 78°04'26.3"E] & **Medical Guest House** [27°55'11.5"N, 78°04'50.5"E].



LECTURES, CAMPUS EXCURSION AND WORKSHOP ON SEQUENCE STRATIGRAPHY (FEB 23-25, 2024)

Lectures (Feb 23, 2024)

MORNING:

Prof. M.E.A. Mondal
Decoding clastic sedimentary rocks: a geochemical approach

Prof. M. Shamim Khan
Clast geochemistry: an aid to stratigraphic riddles?

Prof. Masroor Alam
Geo-engineering issues and infrastructure development in India

EVENING: Campus excursion

Workshop on Sequence Stratigraphy (Feb 24-25, 2024)

Sequence Stratigraphy is a powerful tool aiding petroleum exploration and development.

1. It helps in precisely thin slicing the stratigraphic record in time and then in depth to aid perfect geological correlation of events within the sedimentary record.

2. It helps in aiding definition of the sedimentary depositional environment, precise definition of the sedimentary facies, reservoirs in time and space, there of and in effect, bringing in predictability to their possible porosity and permeability.

For Whom: Master's students and research scholars of geology and geophysics stream.

Duration: 2 full days in the classroom with alternating theory classes and practical exercises.

The workshop is aimed at providing:

1. The development of the subject since inception, the latest developments to make the participants up to date on the subject with the latest understanding on the subject.

2. Practical exercises of the Wheeler diagram, seismic data and well data to demonstrate the usage of the tool. Chronostrat charts.

3. Have open discussion on usage of the type of sequence stratigraphic application to be used to specific data sets (seismic, well log, core, outcrop) and specific geological milieu.

The tentative programme:

1. The historical development of the subject.
2. Basic elements: seismic stratigraphy, scales of sequence stratigraphy, transgression and regression, unconformities, eustatic sea level curves.
3. Deductive sequence stratigraphy: The Slug model (Exxon school), type1 and type 2 sequences, systems tracts.
4. Genetic sequence Stratigraphy: The Galloway model and where to use it.
5. Sequence Stratigraphy on geophysical well logs. Progradation, retrogradation, para sequences.
6. Inductive sequence Stratigraphy (model independent sequence stratigraphy), T-R Sequences, R-T sequences.
7. Fluvial sequence stratigraphy and Rift Sequence Stratigraphy.
8. Deepwater sequence Stratigraphy.
9. Integrative sequence stratigraphic procedure.
10. Case studies from Divergent margin basins and foreland basins.
11. Practical exercises.

CORRESPONDENCE

All correspondences should be addressed to **Prof. M.E.A. Mondal** (Convener)

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