

**A Report on the 41st Annual Convention of the Indian Association of Sedimentologists (IAS-2025) and National Conference on Sedimentology with an Emphasis on the Impact of Deccan Volcanism on Sedimentation, Stratigraphy, Climate and Tectonics (IDSSCT)
19th – 21st January, 2026**



The three-day (19th–21st January, 2026) National Conference on Sedimentology with an emphasis on the Impact of Deccan Volcanism on Sedimentation, Stratigraphy, Climate and Tectonics (IDSSCT) was held at the Department of Geology, Savitribai Phule Pune University, Pune-411007. The main conference featured eleven scientific themes and a total of 127 abstracts were received. A total of 12 special talks and keynote addresses were delivered by leading and active researchers. It also featured a major poster session with 29 displays, presented largely by young researchers from various Indian universities and research institutions. Many new findings within the eleven themes of the conference. The presentations highlighted the exploration of modern sedimentary environments, provenance and depositional conditions, facies architecture, their stratigraphic relations, basin evolution, and the sedimentology of Quaternary archives. climatic environment and disaster-related issues, nuances of ancient

Earth, understanding the forces beneath our planet's surface, decoding transitional continental and marine depositional systems, basin evolution and examining the biological processes influencing sedimentation.

The conference began with the dignitaries lighting a lamp, followed by a prayer. Prof. Suresh Gosavi, Honourable Vice Chancellor of the SPPU, presided over the opening function and inaugurated the conference by addressing the august gathering. Prof. Gosavi, in his address, complimented the organizers. Dr D. P. Mohanty formally welcomed the guests and the participants from India. Prof. Milind A. Herlekar, Convener of the 41st National Conference on Sedimentology, outlined the pioneering studies and efforts made by distinguished predecessors from the Department in the field of Sedimentology. He briefly outlined the conference's objective and hoped that this endeavor by the Conference on Sedimentology would

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usher in new approaches to the study of the Sedimentary records. Prof. B.N. Umrikar, Head of the Department of Geology, SPPU, highlighted the pioneering studies and efforts by distinguished predecessors from the department in the field of Sedimentology. She also briefly outlined the objective of the conference, and hoped that this "Conference on Sedimentology" would inspire new approaches and advancements in the study of the discipline.

The Chief guest, Dr Manish Shukla, Chief General Manager and Chief Executive Assistant to the Director (Exploration), Oil and Natural Gas Corporation (ONGC) Ltd., India, in his address highlighted and complimented the organizers for the timely planning of such long-awaited gatherings and urged for new studies and approaches to understand the future scope of hydrocarbon exploration in India's sedimentary basins.

This was followed by the Presidential address by Prof. G. N. Nayak, President of the Indian Association of Sedimentologists. Prof. Nayak presented an overview of paleoclimate signatures from the recent past, using examples from the Bay of Bengal. He elaborated on the material supply from the peninsular rivers and the Hoogly River to the Bay under varying climate conditions based on the distribution of predominant sediment components, clay minerals, and metals. He highlighted the relatively high levels of smectite, Fe, and Ti as an indication of mafic-rich source rocks associated with chemical weathering, originating from the Deccan Basalts and red beds supplied through the Godavari and Krishna Rivers during the intensified SW monsoon. The higher amounts of illite released by mechanical weathering under the arid, cold climatic conditions of the Himalayan region indicate a strengthening of the NE monsoon. He mentioned intermediate climate conditions, recorded from sediment cores corresponding with the Roman cold-warm period. The cores further represent periods during the Medieval Warm Period and recent global warming, characterised by significant increases in warm, wet conditions that facilitated the leaching of mafic rocks.

The first session on Pre, Syn, Post-Deccan Sedimentation was chaired by Prof. G. M. Bhat and Dr. Avinash Kumar. This session started with a special lecture delivered by Prof. S.K. Tandon on Deccan Infra, and Inter-trappean Sedimentary records of Central India with a Focus on the Narmada Region. He gave an overview of Infra- and Inter-trappean Sedimentary records, the long history of dinosaur collection, the discovery of dinosaur nesting sites, and Palaeobiodiversity and Palaeobiogeography related to the K-Pg extinction. He discussed the Record of Late

Cretaceous Mammals (Naskal). Dinosaur Coprolites and Evolution of Grasses; (Pisdura). KTB-related marine seaways in Central India. He pressed for future studies on Vegetation and climate shifts during the Deccan climate instability. The tempo of eruptive dynamics and implications on sedimentation patterns. He summarised the Infra- and inter-trappean stratigraphic, palaeoclimate, and palaeogeographic analyses being conducted alongside the new data on eruptive tempo (pulses and their volumes). He indicated the need for understanding volcanic influence on the intertrappean and infratrappean sequences, for example, pyroclastic mixing and the relative amounts of volcanogenic detrital mixing; establishing interconnection between eruptive dynamics, rift reactivation, palaeotopography, and sea ingression.

The papers presented in this Session include those of Amrapali Kamble (Revisiting the Toba Ash in Deccan Upland of Maharashtra: Stratigraphy, Geochemistry, and Chronological Challenges), Prof. S. J. Sangode (Basin-wide heterogeneity of the Matanomadh Formation (Kachchh, Gujarat): Implications to post-Deccan conditions in the Kachchh basin), Ujjwal P. Meshram (Remote Sensing-Based Analysis of Tectonic and Climatic Controls on Fluvial Landscapes in the Alluvium–Deccan Trap Transition Zone of the Purna Basin).

The Session 2A presented the theme of Sedimentology and Basin Evolution of Potential Hydrocarbon-bearing basins, which was chaired by Prof. Santanu Banerjee and Co-Chaired by R. N. Kargaonkar. The special lecture delivered by Prof. Santanu Banerjee, on Deccan Facies and soft-sediment deformation structures (SSDS) in syn-rift basin-fill: Jurassic Jhuran Formation. He elaborated that the Syn-rift Jhuran Formation mainly consists of alternations of shale and sandstone on the shelf, mostly progradational, and includes three stacked HSTs separated by granular lags. Organic-rich shale is predominant at the base of the HSTs. He mentioned that Large-scale slides, convolutes, and associated mud clasts are likely triggered by power shocks. Extensional faults show evidence of stretching, and laterally traceable large-scale SSDs, located in the upper parts of the HSTs, mark the boundary between shallow- and deep-shelf deposits. Small-scale load casts, convolute laminae, and chaotic laminae might not be related to the shocks. SSDS are notably associated with rapid subsidence and transgression, possibly due to the reactivation of extensional faults.

This was followed by the keynote address by Dr Manish Shukla on 'Impact of Deccan Volcanism on Sedimentation, Stratigraphy, Climate and Tectonics

(IDSSCT)'. He highlighted the challenges of hydrocarbon exploration, similar to those encountered in reservoir modelling for production. Several new approaches enable geoscientists to examine the dynamics of sedimentary basins and their associated fluids to determine whether past conditions were conducive to hydrocarbon generation, migration, and entrapment. The technique accounts for the risk posed by the timing of generation and migration relative to trap formation and thus has the potential to guide future hydrocarbon exploration by leveraging information from known petroleum systems to less well-known parts of basins, and vice versa. He emphasized the need to pursue research programmes that are more relevant to current challenges with profound societal implications, such as climate change-related heavy precipitation that leads to land subsidence and landslides in the Western Ghats and other places. He advised that future research proposals need to address societal challenges, in addition to academic approaches, to be considered favorably by funding agencies.

The other papers presented in this session include those of Dr Sunjay, covering 'Wetlands Hydrocarbon Exploration, Wetlands Extractive Industries, and Basin-Centered Gas Systems: Carbonate Reservoirs. A carbonate reservoir basin-centered gas system is an over-pressured hydrocarbon accumulation within a large sedimentary basin, where gas is generated from shale source rocks and trapped by barrier formations rather than a single, conventional trap.

The next paper Sedimentology of Bengal fan: The unexplored aspects, was presented by Subhashree Mishra.

These studies are based on palynofacies analysis, with the most abundant phytoclast followed by AOM, palynomorphs (dinoflagellate cysts, acritarchs, spores, pollens), and other marine organic debris. The presence of well-preserved palynomorphs and AOM suggested that the environment was favorable to the preservation of organic matter, and the APP plot suggests the depositional environment as "Mud-dominated oxic shelf and distal dysoxic – anoxic shelf". The n-alkane data show the overall dominance of terrestrial and /or marine macrophytes. These types of organic matter have significant gas-generating potential, as indicated by Rock-Eval pyrolysis and microscopic analyses.

The other presentations on Provenance of sediments from the Laxmi Basin, Arabian Sea, by Manjusha Madkaikar. She highlighted the higher χ_{lf} value and high smectite content, indicating sediment supply from the Deccan Traps. Lower χ_{lf} value and high illite content

indicated sediment supply from the Indus. Downcore variation with higher χ_{lf} and high smectite clay content suggests events with increased input from the Deccan Traps.

The presentation Palaeoenvironmental Reconstruction of the Palaeogene Disang-Barail Transition, North-West of Kohima, Nagaland was made by S. K. Srivastava- He highlighted that the continued subduction of Indian plate below the Burmese plate, upliftment of Proto-Himalayan sediments in the extreme northeast and anti-clock wise movement of the Indian plate, sea would have receded towards the south allowing the prevalence of a shallow marine environment where Disang-Barail transitional sedimentation took place.

The Session 2B parallel session presented the Theme- Role of Sedimentology in Sustainable Development and was chaired by Dr Pramod Hanamgond and co-chaired by Dr Biswajeet Thakur. The keynote address by Dr Avinash Kumar discussed exploring the extremes: global sea ice in a changing climate. Thermal and heat-flux analyses in his presentation indicated that, although land areas are warming nearly twice as fast as oceans, the majority of excess heat is absorbed and retained by the ocean, leading to elevated sea surface and subsurface temperatures and enhanced turbulent heat fluxes that suppress ice growth in both hemispheres. Collectively, these results suggest that the 2025 global sea ice minimum is not an isolated anomaly but part of a fundamental restructuring of sea ice-climate interactions. Understanding these evolving extremes is crucial for improving projections of polar change and its far-reaching climatic impacts.

The other papers presented in this session include those of Chelsea Fernandes (Assessment of metal toxicity through bioavailability in sediments and bioaccumulation in edible bivalves from the Vashishti Estuary, Maharashtra, west coast of India).

Maheshwar Nasnodkar (Speciation of Metals, Bioaccumulation and Phytoremediation Potential of Mangroves in the Kundalika Estuary, West Coast of India). Vaibhavi D. Chopdekar (Metal Bioavailability in Sediment and Phytoremediation Potential of Mangroves in the Mandovi Estuary, Goa, West Coast of India).

This was followed by an address by Dr Mithila Verma, Scientist-E & Program Director, Ministry of Earth Sciences (HQ), Earth System Sciences: New Delhi-110003. She elaborated on the Scientific Programs and

Implementing Institutes, Schemes, related to the scope in Sedimentology.



This was followed by a special talk by Dr Waliur Rahman, who recently received the prestigious Bhatnagar award for his work on the Antarctic Ice sheet melting and the sea level rise. He highlighted the study on **Predicting West Antarctic ice sheet melting and future sea-level rise using geological records**. The data indicate a complete collapse of the WAIS during the Pliocene, the expansion of the ice sheet started during the Pliocene-Pleistocene transition and Stable erosion during the Pleistocene.

This was followed by the Young Sedimentologists Award presentation, with a total of three students participating, namely;

1. **Jaydeepsinh Jadeja and D.K. Sinha** -Bentonite zones below the bauxite horizon in Kachchh Region and its sedimentological aspects: A case study at Wandh and Nana Goniysar Area, Kachchh, Gujarat, Gujarat Mineral Research and Industrial Consultancy Society
2. **Poonam Mangtani and A.V. Joshi**, - Sedimentological studies of Katesar Member (Late Jurassic), Jhuran Formation, Kachchh basin: An example of transition from Delta Front to Delta Plain settings.
3. **Nitin Kadam**, CSIR-National Institute of Oceanography, Goa, Charting the effects of multi-components and magnetostatic interactions on sediment magnetism: Implications to sedimentological, paleoclimatic, and paleoenvironmental interpretations

The Young Sedimentologists Award winner is **Mrs Poonam Mangtani**

The 2nd Day, Session 3. Theme-Quaternary Sedimentation and Geoarchaeology: Climate, Tectonics, and Sea Level Changes, Chair-Prof. S.J.

Sangode and Co-chair- Dr. Shamim Dar

The keynote address was delivered by Dr Anoop Ambili on **Reconstructing Holocene Climate–Human–Fire Dynamics Using Molecular Proxies from the Indian Subcontinent**

He gave an overview of the Holocene Climate–Human–Fire Dynamics Evaporation. The papers presented in this session include those by Gauri Dole (Quaternary sedimentation in the Deccan Volcanic Province), Dr. Biswajeet Thakur (Integrated sedimentological, palynofacies, and isotopic evidence of Late Holocene environmental change in the Manakudy Estuary, Kanyakumari, Southern India), Tapan Chakraborty (Gravelly alluvial fans forming in the humid, monsoon-



affected setting of the Eastern Himalaya), Bhagwan B. Ghute (Delineation of depositional environment from Quaternary sediments in the Lendi River sub-basin, Maharashtra, India), Dr. Ashis Kumar Paul (Wave reworking and changing sediment behaviours in exposure sites of the paleo-mudbanks instead of relict beaches in Indian Sundarbans), Rajesh Samal (Neotectonic imprints in the Southern Granulite Terrain- insights from the Ponnaiyar River sediments, northern Tamil Nadu), Jayanta Laskar (River bank erosion and its association with channel flow characteristics: A case study from the Brahmaputra River).

The next parallel session, 4A, presented Theme 5: Recent Developments in Sedimentation, Stratigraphy, and Geochronology. (Chair: Prof. B. P. Singh, Co-chair: Dr. Veeru Kant Singh).

The keynote address by Prof. B. P. Singh, titled 'Northward drift of India during Paleogene: Further evidence from paleosols of the western Himalayan foreland,' provided an overview of paleoclimate and Sedimentological records. These records show that the Indian landmass moved northward at a rate of 5-10 cm/yr during the Cretaceous period. As a result, the northern part of India crossed the equator and reached its current latitude. In this study, various paleosols were used to trace the movement of the Indian plate from the equator to 30° N. It is important to note that climate significantly influences paleosol formation, and this influence varies with latitude. Large negative stable carbon (-8 to -11‰ $\delta^{13}C$) and oxygen isotope values (-8 to -12‰ $\delta^{18}O$) indicate that the studied calcretes formed under the influence of meteoric water and the soil organic matter in dry, subtropical climatic conditions. The formation of Oxisols in a warm, humid climate was possible in the equatorial region. Coal deposits formed under humid conditions when the northern tip of the Indian subcontinent reached the intertropical convergence zone, while pedogenic calcrete formed once the subtropical climatic zone was reached. Thus, he proposed that these paleosols formed in different climatic zones during the northward drift of the Indian plate, and this movement transported them to their current positions between 30° N and 35°N latitudes.

The next paper presented in this session includes **M. E. A. Mondal** (Tracing provenance using elemental and isotopic proxies – examples from complex and contrasting geological settings). He reported whole-rock elemental and isotopic studies of sedimentary rocks from complex, contrasting geological settings, aimed at assessing the provenance and crustal evolution of clastic rocks from the Sonakhan Greenstone Belt of the Bastar Craton, the

Mahakoshal Belt of CITZ, Central India, and the Banded Gneissic Complex of the Aravalli Craton. The other presentations are Suchana Taral (Neogene Paleogeography of the eastern margin of the Bengal Basin, Mizoram, India: an integrated sedimentological and ichnological approach), Deepshikha Jena (Mineralogical and Geochemical Characterization of Cretaceous Green Silicates of the Mahadek Formation, South Shillong Shelf), Sandeepkumar Patel (Geochemistry of Motur Sandstones of Satpura Gondwana Basin, Betul District, Madhya Pradesh: Implications for paleo-climate and paleo-weathering conditions), Shinjana Sen (Deciphering depositional motif, provenance, and tectonic setting of the Kaimur Group Sandstones, Bundelkhand sub-basin of Paleoproterozoic Vindhyan Basin, Central India). Shivam Yadav (Mineralogical associations of Sandstone-Type Uranium mineralization in Motur Formation, Lower Gondwana Group, Satpura-Gondwana Basin of Kachhar-Dharangmau-Jhapri-Kalapani Area, Betul District, Madhya Pradesh), R. Subin Prakash (Paleomagnetism, Petrography, and Geochemistry of Gondwana sediments of South Indian region, and their implications on paleoclimate and source area characteristics), S. K. Srivastava (Palaeoenvironmental significance of Ichnofossils from the Eocene-Oligocene deposits of the Inner Fold Belt of Nagaland, India), Sumeet Singh (Arc maturation or extension? Deciphering the tectonic evolution of the late Cretaceous Dras arc through the forearc sediments of the Nindam Formation in Zaskar Gorge, Ladakh), and Praveen Vishnoi (Trace Fossil Assemblages and Lilliput Effect of the Permian-Triassic Boundary Interval in the Spiti Basin, Tethys Himalaya, India: Implications for Benthic Community Stress after the End-Permian Mass Extinction).

The next Parallel session 4B, presented the Theme 8: Recent Developments in Sedimentation, Stratigraphy, and Geochronology, (Chair: Prof. G. N. Nayak, Co-chair: Dr. Pratima Kessarkar).

The keynote address was delivered by Prof. A.C. Narayana on sea level changes, landscape development, and sedimentation during the Quaternary. In his talk, he presented evidence that hydroclimatic changes related to global warming over the past 50 years have been widely documented, but the physical landscape responses remain poorly understood. Detecting sedimentary and geomorphic signals of modern climate change presents challenges due to short record lengths, difficulty in resolving signals within stochastic natural systems, influences from land use and tectonic activity, long-lasting effects of extreme events, and variable connectivity in sediment-routing



systems. He stated that humans have influenced landscapes at the local-to-regional scale for more than 9,000 years, affected global biogeochemical cycles for centuries to millennia, and experienced industrial-era warming that first emerged in the mid-1800s.

The other papers presented in this session include those by Firoz Badesab (Abundance and Diversity of Magnetofossils in the Northern Indian Ocean), M. C. Manoj (Miocene Variability in Deep Ocean Circulation and Climate Coupling in the Indian Ocean: Evidence from Sortable Silt Records), S. Lenka (Changes in mineral assemblages in the Carlsberg Ridge sediments), Aninda Mazumdar (Molybdenum geochemistry of marine cold seeps: A tracer for temporal variations in methane pulses and passive tectonics), Dhiraj Shinde (Palaeoceanographic Reconstruction of Monsoon Dynamics and Diagenetic Influences in southeastern Arabian Sea sediments Insights from $\Delta^{13}\text{C}$ and TOC Records).

POSTER PRESENTATIONS

A total of 29 posters were presented during the 41st Annual Convention of the Indian Association of Sedimentologists (IAS-2025), as listed below:

1. **Post-Deccan Weathering and Zeolitization: A Mineralogical Insight from Quaternary**

Sediments of the Chandnapuri Ghat Section, Maharashtra, Western India by Shweta **Suresh Patil** and Aditi Mookherjee.

2. Secondary Calcite in Deccan Basalts: Textural and Spectral Constraints, by **Huma Tasleem Shaikh** and Aditi Mookherjee.
3. Mineral magnetic variations across an inland sea-way excursion during Late Maastrichtian to Danian deposition of the Jhilmili intertrappean in the Deccan Volcanic Province, Mandla lobe, Madhya Pradesh, India by Jyotibala Singh and S. J. Sangode.
4. Coupled Analysis of Water Quality Indicators and Spatial Proximity for Coastal Groundwater Contamination Assessment, by **Suhani Srujanika**, Reetichi Pattanaik, Bhavana Umrikar.
5. Hydrogeological Controls on Groundwater Availability: A Case Study from the Nira River Sub-watershed by **Payal Waindeshkar**, Amit V. Shirke Bhavana Umrikar.
6. Sedimentation Mapping in Tavarja Lake Catchment using Advanced Geospatial Techniques for Management and Planning by **Atul M. Jethe**, Sunil W. Gaikwad, Sandip V. Jadhav

and Sunil B. Narute.

7. Quaternary Fluvial Archives and their Hydrostratigraphic Significance in a Semi-arid Deccan Trap Basin: A Case Study from the Upper Yerala River, Maharashtra, India by **Mustaq Ahmad Shaikh**, Milind A. Herlekar, Bhavana N. Umrikar.
8. Ichnofossils from the Lakhanka Formation exposed in quarry section at Mithiviradi village, Saurashtra, Western India, by **Dattatray B. Shelke** and Shyam N. Mude.
9. Pulses of oxygenation in the ~1.6 Ga OCEAN evidenced from negative carbon isotope excursions on carbonates from the Cumbhum formation, Cuddapah basin, India by **Aziya T**, Nurul Absar, M Ashok and Sachin Chandra.
10. Petrographic and geomorphic studies of beach rocks exposed along of the Konkan Coast, Western India: Paleoclimate Implications, by **Shivaji Kokate**, Shyam N. Mude, Shantanu Waghmare, and Dattatray Shelke.
11. Sediment Characterization of Beach Sediment along a section of the West Coast of India: Implications for Climate Change by Pratiksha Bagul, Milind A. Herlekar.
12. Sedimentologic, Mineral Magnetic and Magnetic Fabrics Characterization of the Late Pleistocene Bhimuni sand deposits from the East Coast of India by **Shubham Waghmare**, S.J. Sangode, D.C. Meshram, Ashish Dongre, Vivek Bhore.
13. Radiocarbon Constraints on Quaternary Sedimentation in the Upper Bhima River Basin, Deccan Plateau, by **Sangita Parida** and Vinod S. Barahate.
14. Petrographic Insights into Hotpeth Formation: Provenance, Climate, and Depositional Setting in the Proterozoic Bhima Basin by **Gouravi Yerankollu**, Shyam N Mude, Shivaji Kokate and Dattatray Shelke.
15. Identification of early Miocene unconformity and mangrove ecosystem based on conspicuous rhizolith ichnofabric in the palaeosols of Khari Nadi Formation, Kutch Basin (India) by **Chatterjee, K.**, Dasgupta, S. 1, Singh, S., & D'souza, R.
16. Lithofacies and Depositional Environment of the Miocene Surma Sediments in parts of the Inner Fold Belt, Peren District, Nagaland by **Vitholeto Nagi** and S.K. Srivastava.
17. Deciphering Shelf-Margin Deltaic Dynamics: Ichnofacies and Sedimentological Insights from the Miocene Boka Bil Formation, Bengal Basin, Bangladesh by **Shachi A. Bajpai**, Sudipta Dasgupta, Md. Sakawat Hossain, Md. Sharif Hossain Khan.
18. Provenance and Paleoweathering of Lower Gondwana Sandstones, Garu Basar Road Section, Eastern Himalaya, India by **Swati Bayan**, Ananya Chutia, and Chaitra Dhar Taye.
19. Palaeomagnetic and Rock magnetic Characterization of the Iron Ores from Bailadila Mine, Chhattisgarh, India, by **Mahesh Mopkar**, S. J. Sangode, Nitin Kadam, D. C. Meshram, Firoz Badesab, Shubham Waghmare.
20. Volcaniclastic Provenance and Depositional Dynamics in the Indus Basin, Ladakh Himalaya: Constraints from Petrographic and Geochemical Data, by **Shivani S. Choudhari**, Subhojit Saha, Anil Kumar.
21. Unravelling the carbonate factory of Chitrabhanukot Dolomite of Bagalkot Group, Kaladgi Basin, India, by **Shilpa Layek**, Anirban Layek, Soumyadeep Bose1, Pradip Samanta, Soumik Mukhopadhyay.
22. Facies Associations and Sequence Stratigraphic Framework of the Siliciclastic–Carbonate Succession in the Eastern Bhima Basin, Karnataka: Insights into Neoproterozoic Basin Development, by **Anirban Layek**, Shilpa Layek, Pradip Samanta, Soumik Mukhopadhyay.
23. Highstand Systems Tract (HST) succession of the Dhandraul Sandstone Formation, Kaimur Group, in the Vindhyan Basin, Chitrakoot District, Uttar Pradesh by **Apoorve Bhardwaj**, Debashish Jana and Shailendra Singh.
24. Rock magnetic properties of sediments from the western continental shelf of India, by **Austin A. Parmar**, Pratima M. Kessarkar, Lina L. Fernandes.
25. Grain Size and Heavy Mineral Dynamics of the Gaonkhadi–Ranpar Coast, Ratnagiri District by **Pratiksha P. Bagul**, Milind A. Herlekar.
26. Sedimentological and Depositional Dynamics of the Varuna River Basin, Central Ganga Plain,

India, by **Shivani** and Dhruv Sen Singh.

27. Impact of Heavy Metal Concentration in Banda Older Alluvium, Banda District, Uttar Pradesh by **Nisha Singh**, Utsa Singh and Hemant Kumar.
28. Assessment of Heavy Metal Contamination in Stream Sediments from the Inter-fluvial Areas, Ganga and Yamuna, Uttar Pradesh by **Nikhat Naim**, Danish Ali, Amrita Sarkar, Hemant Kumar and V.P. Gaur.
29. Geochemical Variability and Petrogenesis of High- and Low-Ti Mafic Dykes of the Ladakh Batholith, Trans-Himalaya, India, by **Akhtar R. Mir**, Shabber H. Alvi, M. Satyanarayanan, A. Keshav Krishna, Irfan M. Bhat, Shamim A. Dar.

The 3rd Day Parallel session 5A: Theme 6-Carbonate Sedimentary Environments was chaired by Prof. A. V. Joshi and Dr Suchana Taral

The keynote address by Prof. Subir Sarkar, 'Incompleteness of sedimentological record and temporal bias in preservation,' highlighted that during the Precambrian, bioturbation rarely affected the record. In contrast, the proliferation of microbial mats significantly enhanced preservation. Land vegetation, such as Gymnosperms, first appearing in the Silurian, improved river bank stability. This effect was greatly amplified with the emergence of Angiosperms and grasses in the Cretaceous and Cenozoic, respectively. Early diagenetic cementation of carbonates occurs more readily in nearshore areas, while hardground formation is also promoted on drowned unconformities. Ruddy colonies and entrusting organisms stand out by selectively protecting older records beneath them. Finally, he inferred that the sedimentary record is inherently incomplete due to frequent erosion and non-deposition, resulting in uneven preservation of geological time within stratigraphic successions.

The other papers presented in this session include those by Arunava Sen (Neoproterozoic Carbonates of the Badami Basin, Karnataka, India: Records of End-Marinoan to Mid-Ediacaran Climate Shifts, Paralic Water Chemistry, and Microbial Ecosystems in a Low-Latitude Epeiric Setting), Yamuna Singh (Origin of Elongated Nodular Forms Associated with the Bhandar Limestones of the Vindhyan Supergroup around Rewa, Central India: Constraints from Stable Carbon Isotopic Compositions), Shamim Ahmad Dar (Tracing Rare Earth Elements Distribution and Enrichment Mechanism in Phosphorites of the Paleoproterozoic Bijawar Group in Mardeora Mine, Chattarpur District, Madhya Pradesh (M.P.), India), and Tarang Sarin (Variation in Glauconite Composition from

Proximal to Distal Parts of the Mesopotamian Basin, Iraq).

The Parallel session 5B: Theme 10: Modern Sedimentary Environments was chaired by Prof. M.E.A. Mondal and Co-chair- Dr Firoz Badesab

The keynote address delivered by Dr Pramod Hanamgond focused on Coastal Landforms of Konkan, Maharashtra, on the West Coast of India. He provided an overview of the current status of Maharashtra's coastal geomorphology, highlighting its unique features such as scenic beaches bounded by headlands, estuaries, bays with spits (both north and south trending), tombolo effects, beach ridges, wave-cut platforms, stacks, caves, geo (blow holes), rocky and sandy beaches, etc. Some beaches along the Ratnagiri and Malvan coasts are notably rich in placer deposits, mainly composed of ilmenite and magnetite. At Ratnagiri, peat beds occur at depths of about 80-100 ft., with evidence of pollen grains and mangrove plant stems, indicating past sea transgression. This paper aims to describe the geomorphic features observed along the Konkan coast. Other papers in this session include studies by Srutakriti Saikia (Study of Sedimentary Deposits Developed along Fluvial and Coastal Parts of Odisha; Assessment of Sediment Source to Sink Relation), Sivaraj K (Geochemistry of Sediments and Macroplastics in Mookaneri Lake, Salem City, Tamil Nadu), Ali Roshan (Provenance and Depositional Characteristics of Kozhikode Beach Sediments, Kerala), Vikas Kumar Maurya (Investigation of Beach Placer Mineralogy from Recent Sediments through Space-borne Hyperspectral Imaging Spectroscopy and Heavy Mineral Quantification: Case Study from Mumbai Coast), Shabnam Choudhary (Distribution, Source, and Factors Controlling Magnetic Properties of Surface Sediments in Modern Fjords of the Arctic, West Spitsbergen, Svalbard), S. Kanhaiya (Textural Characteristics and Quartz Microtextures of the Khurar River Sediments, Khajuraho, Madhya Pradesh), Shashi Kant Yadav (Depositional Processes and Provenance of Sai River Sediments, Central Ganga Plain, India: Insights from Lithofacies, Textural, and Heavy Mineral Analyses), Nideshkumar Dhawale (Correlating Sedimentation and Desertification: A Study of Erosion Dynamics in Maharashtra), and Sapana Sasane (Future Prediction and Shoreline Changes of Maharashtra Coast Using Multi-Temporal Satellite Data and Geospatial Techniques).

The Parallel session 6A: Theme 07: Facies Analysis and Sequence Stratigraphy Chaired by Dr Anand Kale and co-chair Prof. S. K. Srivastava.

The keynote address by Dr Anand Kale, entitled "A Revision of the Understanding of the Depositional Systems for the Cretaceous of South India, discusses how

marginal marine sedimentation began during late syn-rift.

The deposition in the sub-basin evolved from an initial fluvial environment to a transitional marine (paralic) environment from the early to the late rift stage, as the rifts gradually filled. As rifting progressed, the dispersal system became more entrenched, leading to the deposition of finer clastics across a widespread floodplain. Sedimentation in this basin started with the deposition of fluvial to possibly colluvial coarse clastics. The papers presented in this session are by Pramita Majumder (Stratigraphic Transition from Owk Shale to Paniam Quartzite in the Kurnool Group, Cuddapah Basin: Changes in Depositional Environment, Provenance, and Sequence Stratigraphic Trends), Maadhushree Phukan (Facies Analysis and Application of Markov Chain in the Depositional Landforms Formed by Glacio-Fluvial Processes in the Teesta River Valley, India), Abhishek Chandra (Tectonically Induced Shallowing of the Proterozoic Penganga Basin During the Terminal Phase of the Grenvillian Orogeny: A Case Study)

The Parallel session 6B: Theme 09: Evolution of Soils and Paleosols was Chaired by Prof. Hema Achyuthan and co-chair Dr Madhuri Ukey

The keynote address was delivered by Prof. Hema Achyuthan on the reconstruction of the paleomonsoon using lake sediments as a proxy, entitled "Unravelling Millennia: Exploring Southwest Monsoon Variability and Climatic Shifts in Northern and Southern India." Despite substantial variations in monsoon strength, no major shifts in its source, extent, and seasonality occurred before 2500 years BP. However, two brief arid phases occurred around 2600 and 3500 cal yrs BP, disrupting the otherwise stable SWM pattern. The Roman Warm Period (RWP) from 2100 to 1800 cal yrs BP shows a sharp decrease in monsoon intensity. In the Himalayan region, both dry and wet phases at the onset and end of the LIA contribute regional nuances to broader monsoon variability.

Subsequently, monsoonal precipitation intensified at the start of the early Holocene, around 9000 years before present, becoming warm and humid. There was a gradual shift toward wetter conditions, with two stepwise changes occurring at approximately 8000 and between 3200- and 1800-years BP. The change at 8000 years BP appears to correspond to a brief (100-150 years) dry spell recorded elsewhere in India. For 7,000 years BP, a trend towards longer dry periods has been observed, possibly due to weaker summer monsoons. Over the longer term, during weaker SWM, a shift between 3200- and 1800-years BP was marked by a rapid intensification of the southwest monsoon and correlates with the start of the late Roman

Warm Period (RWP). Wetter phases during the Medieval Warm Period (1250-950 AD) and the Little Ice Age (550-150 years BP) are noted in the Kukkal and Pookode lakes. She showed that the sediment C/N ratio ranges from 14.02 to 8.31, suggesting that the organic material is derived from a mixture of lacustrine algae and vascular plants. Other papers in this session include studies by Seema Singh (Review of palaeosols as tectono-climate recorders in Himalayan foreland basin sediments for applicability in the Indus Group sediments of Ladakh Himalaya), Deepjyoti Mahanta (Controls on weathering variability in sediments of Thamirabarani River Basin, Tamil Nadu, India)

The Session 7: Theme 11: Geogenic Disasters and its impact on Sedimentation was Chaired by Prof. S. K. Pandita and co-chair Dr Yamuna Singh

The keynote address by Dr S. P. Pradhan- entitled, "Mitigating Geomechanical Risks to Ensure Long-Term Security of CO₂ Storage. He gave an overview of the current status of CO₂, the single most important greenhouse gas driving human-induced climate change. The sheer amount of CO₂ emissions from human activities, and the fact that some of it remains in the atmosphere for hundreds to thousands of years, make CO₂ the biggest challenge in combating climate change.

Other papers in this session include studies by Dr. Sabyasachi Mandal (Influence of earthquake on sedimentary environment: Study from Vindhyan sediment succession, India), Ananda Badekar (Sedimentological Assessment of GLOF Deposits Developed in Teesta River Valley, Sikkim Darjeeling Himalaya, India), Thorie, A. (Sedimentary and tectonic implications of soft-sediment deformation structures (SSDS) in the Palaeo-Brahmaputra sediments,

Neogene Tipam Group, Naga Schuppen Belt, Indo-Myanmar Range), Runcie Paul Mathews Petro-Geochemical Evidences of Palaeo-Wildfires from the Paleogene Khadsaliya Lignite, Saurashtra Basin, Western India, **C. Lakshmi Narasmhan** (Investigating Slope Stability In Kandal, Ooty: Implications for Landslide Hazard Mitigation).

This session was followed by the 'Felicitation Ceremony.

Valedictory Session

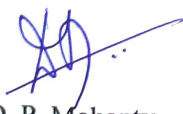
This session was chaired by Prof. N. R. Karmalkar, Former Vice-Chancellor, Savitribai Phule Pune University, Pune, Chief-Guest Prof. N. V. Chalapathi Rao, Prof. G. M. Bhat, Jammu University, Jammu, Prof. G. N. Nayak, President, Indian

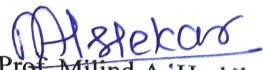


Association of Sedimentologists, Dr Anand Kale, Prof. B. N. Umrikar, Head, Department of Geology, Savitribai Phule Pune University, Pune. Feedback on the Conference was sought, and the following summarizes the suggestions for the way forward. Overall, the participants opined that a large scope of work remains in Sedimentology, particularly in the use of multiple tools, and encouraged the organisers.

Then, the Young Sedimentologists award was announced by Prof G. M. Bhat and Prof G. N. Nayak, President, Indian Association of Sedimentologists, Miss. Poonam Mangtani, Department of Geology, M. S. University,

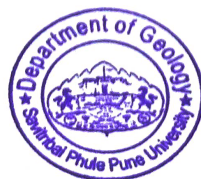
Baroda. Then announced Poster presentation winners: first winner, Shachi Bajpai, IIT, Mumbai; second winner, Mahesh Mopakar, Department of Geology, Savitribai Phule Pune University; and third winner, Miss. Shivani, Department of Geology, University of Lucknow. Participants suggested providing more time for the poster session, which featured a large display of over 29 posters, many representing young teams with new data and approaches. The organizers were highly constrained by the limited time available and by a large number of presentations exceeding the expected time limit. The vote of thanks was given by Dr. Aditi Mookherjee.


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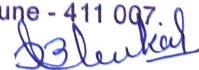

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