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ASSISTANT PROFESSOR (GEOLOGY)
W.B.E.S

[Dr. Nivedita Chakraborty joined W.B.E.S in 2015]

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RESEARCH INTEREST

Sedimentology, Sequence Stratigraphy, Sediment Geochemistry, Biosedimentology

RESEARCH

Thesis Title: Barremian-Coniacian Sediments and Sequence Building in the Pondicherry Sub-Basin of Cauvery Basin, India.

Synopsis: The work had so far been focused on state-of-art process-related as well as palaeogeography-related facies analysis enhancing the power of resolution of sedimentological studies of Barremian-Coniacian sediments in Pondicherry sub-basin of Cretaceous Cauvery intracratonic rift basin. For this purpose a detailed account of lithologic, structural, organizational and ichnological variations in outcrops has been considered. The goal of the work is to identify various palaeogeographies and to record palaeogeographic shifts through space and time which ultimately help to understand the mode of sequence-building pattern of the Group. The geochemical characteristics have also been considered during the present study. The purpose is to evaluate the effects of intra-basinal processes on source-related information extracted from bulk sediment composition. Geochemical data also considered to note the variable degrees of mixing of contributions from different sources which favors continuation of rifting. Weathering intensity and the estimated mean annual temperature is inferred from the chemical data.

Supervisor: Prof. Subir Sarkar
Department of Geological Sciences
Jadavpur University.

ACHIEVEMENTS

- Secured **93/264** rank in **NET (UGC)**, December 2009 in Earth, Atmospheric, Ocean & Planetary Sciences.
- All India rank **66** in **GATE**, 2009.
- Secured **2nd** position in **Public Service Commission** (West Bengal), 2015 for the post of Assistant Professor in Government Colleges.

PROFESSIONAL AFFILIATION

1. Reviewer of manuscript for *Journal of Arabian Earth Science*, Springer in 2015 and *Journal of Indian Association of Sedimentologists* in 2017.
2. Council member of Indian Association of Sedimentologists (IAS) since 2016.
3. Life member of Indian Association of Sedimentologists (IAS). Member Id 241.
4. Member of Society for Sedimentary Geology (SEPM) since 2014; Member Number 49547.
2. SEPM Student member for the Wilson Award Selection Committee for the year 2015.
3. Member of Geological Society of America (GSA) from 2010-11; Customer Id Number 9146404.

PUBLICATIONS

1. **Chakraborty, N.**, Sarkar, S., Mandal, A., Mejiama, W., Tawfik, H. A., Nagendra, R., Bose, P. K. and Eriksson, P. G. Physico-chemical Characteristics of the Barremian-Aptian Siliciclastic Rocks in the Pondicherry Embryonic Rift Sub-basin, India 2017. In: *Sediment provenance: influences on compositional change from Source to Sink* (Ed.), Elsevier. Chapter 6, 85-121p.
2. Mandal, A., Koner, A., Sarkar, S., Tawfik, H. A., **Chakraborty, N.**, Bhakta, S., Bose, P. K., 2016. Physico-chemical tuning of palaeogeographic shifts: Bhuj Formation, Kutch, India. *Journal of Marine and Petroleum Geology* 78, 474-492.
3. Bose, P. K., Sarkar S., Das, N. G., Banerjee, S., Mandal, A. and **Chakraborty, N.**, 2015. Proterozoic Vindhyan Basin: configuration and evolution” in “Precambrian Basins of India: Stratigraphic and Tectonic Context”. *Geological Society of London*, Special Memoir No. 43, 85-102.
4. Sarkar, S., **Chakraborty, N.**, Mandal, A., Banerjee, S. and Bose, P.K., 2014. Siliciclastic-Carbonate Mixing Modes in the River-Mouth Bar palaeogeography of the Upper Cretaceous Garudamangalam Sandstone (Ariyalur, India). *Journal of Palaeogeography* 3 (3), 233-256.
5. Sarkar, S., Banerjee, S., Samanta, P., **Chakraborty, N.**, Chakraborty, P. P., Mukhopadhyay, S. and Singh, A. K. 2014. Microbial mat records in siliciclastic rocks: Examples from Four Indian Proterozoic basins and their modern equivalents in Gulf of Cambay. *Journal of Asian Earth Sciences* 91, 362–377.

6. Mandal, S., Sarkar, S., **Chakraborty, N.** and Bose, P.K., 2014. Palaeogeography, palaeohydraulics and palaeoclimate of the Mio-Pliocene Siwalik Group, Eastern India. *Journal of Palaeogeography* 3 (3), 270-296.
7. Sarkar, S., Mukhopadhyay, S., Choudhuri, A., **Chakraborty, N.**, Bose, P.K., Aseismic tectonism-induced soft-sediment deformation in a tranquil palaeogeography: Chikkshelikere Limestone Member, India (accepted in Geological Evolution of Precambrian Indian Shield”, SES Series, Springer).
8. **Chakraborty, N.**, Mandal, A., Choudhuri, A., Mandal, S., Sarkar, S. and Eriksson, P. G., Indigenous siliciclastic and extraneous polygenetic carbonate beds in the Albian-Turonian Karai Shale, Cauvery Basin, India (under final revision in Carbonates and Evaporites, Springer).
9. **Chakraborty, N.**, Sarkar, S., Mandal, A., Mandal, S., Bumby, A., Microenvironmental Constraint on $\delta^{13}\text{C}$ Depletion: Garudamangalam Sandston, Cauvery Basin, India (under review in *Journal of Marine and Petroleum Geology*).
10. **Chakraborty, N.**, Sedimentary facies analysis in a rift setting: Cretaceous Dalmiapuram Formation, Cauvery Basin, India (communicated to *Journal of Palaeogeography*).

ABSTRACTS AND SEMINARS

1. **Abstract** (accepted) and selected for **oral presentation** in **3rd International Palaeogeography Conference** entitled “Sedimentary facies analysis in a rift setting: Cretaceous Dalmiapuram Formation, Cauvery Basin, India” to be held in September 2017 at Chengdu, Sichuan Province, China.
2. **Abstract and oral presentation** on the **National** conference and 33rd convention of Indian Association of Sedimentologists with emphasis on Energy Resources and Climate Change entitled “ Current perspectives and emerging issues in Gondwana evolution entitled “Tectono sedimentation history of Cretaceous carbonate shelf at passive continental margin: Dalmiapuram (Limestone) Formation, Cauvery Basin, South India” in 2016 at BHU, Varanasi, p.57.
3. **Abstract and oral presentation** on the **International** conference on Current perspectives and emerging issues in Gondwana evolution entitled “Source and climatic conditions of Gondwana equivalent Early Cretaceous sediments: Records from Cauvery Basin, India” in 2015 at BSIP, Lucknow, p.28.
4. **Abstract** on the **International** conference on 2nd International paleogeography conference, entitled “Allogenic carbonates driven by three different agents onto the muddy shelf within the Karai Shale, Cauvery Basin, India” in 2015 at Beijing, China, p.11.
5. **Oral presentation** in Regional Brain Storming Session (BSS) on 36th IGC: An Opportunity for Advancement of Geosciences in 2014 at GSI, Kolkata.

6. **Oral presentation** in Research Meeting sponsored by SEPM & organized by JUGS in 2014 at Jadavpur University, Kolkata.
7. **Abstract and oral presentation** on the **International** Geoscience Programme Project 608 entitled “Indigenous siliciclastic and extraneous polygenetic carbonate beds in the Albian-Turonian Karai Shale, Ariyalur, India” in Cretaceous ecosystems and their responses to palaeoenvironmental changes in Asia and the Western Pacific in 2013 at BSIP, Lucknow, p.5.
8. **Abstract and poster presentation** on **National** conference of IGU on Modern geological and geophysical methods and their applications entitled “Frailty of lithofacies analysis in palaeogeographic and palaeoenvironmental interpretation of the Cretaceous Karai Shale, Ariyalur District, India” in 2013, Abstract volume (ISBN 978-93-80813-22-6) of IGU workshop in Department of Geological Sciences, Jadavpur University, p.62.
9. **Extended abstract** on **International** conference of 44th Lunar and planetary science entitled “A new record of mid-cretaceous meteorite fall on eastern coast of India.” in 2013 ISSN No: 0270-9511, 1863.pdf.
10. **Abstract and oral presentation** on **National** conference of IAS entitled “Physico-chemical traits of the Barremian-Aptian non-marine Sediments, Trichnopoly, India” in Sediments and Sedimentary Rocks: Resource Potential, Depositional processes, Implications to Ecosystem and Environmental Changes in 2012 at Pondicherry University, p.7.