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3.5.1: Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years

**Activity-related documents under the Collaboration
with
DEPARTMENT OF GEOLOGICAL SCIENCES,
JADAVPUR UNIVERSITY**



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**A REPORT ON THE COLLABORATIVE RESEARCH WORK BETWEEN
KABI JAGADRAM ROY GOVERNMENT GENERAL DEGREE COLLEGE
&
DEPARTMENT OF GEOLOGICAL SCIENCES, JADAVPUR UNIVERSITY**

- 1 Name of the Liaison Faculty : • **Dr. Subir Sarkar, Professor of Geology,**
Members with contact details of • **Department of Geological Sciences, Jadavpur University,**
Collaborating Institutions • **Jadavpur, Kolkata, PIN 700 032, West Bengal**
Phone: 9432406174; E-mail: subir.sarkar@jadavpuruniversity.in
• **Dr. Nivedita Chakraborty, Department of Geology, Kabi**
Jagadram Roy Government General Degree College, P.O.-
Mejia, Dist. – Bankura, PIN 722 143, West Bengal
Phone: 8016614395; E-Mail: nivedita.jugeo@gmail.com
- 2 Start Date of Collaboration : January, 2016
- 3 End date of Collaboration : Continuing
- 4 Duration : January, 2016- Continuing
- 5 Purpose of the Collaboration : Collaborative Research, Geological field Work & Publication.
- 6 Collaborative Research : Collaborative research with field work in Cretaceous Rocks of
Activities : Cauvery, Kaladgi and Kutch Basins
7. Outcomes in terms of Research Publications: 02 (two) Publications during the period 2018-2019
 - i) Mukhopadhyay, S., Choudhuri, A., **Chakraborty, N., Sarkar, S.**, 2019. Aseismic tectonism-induced soft-sediment deformation in a tranquil palaeogeography: Chikkshelikere Limestone Member, India in: Mondal, M.E.A. (ed.) *Geological Evolution of Precambrian Indian Shield* (Ed.), SES Series, Springer, Chapter 16, 351-372p.
 - ii) **Chakraborty, N., Sarkar, S.**, 2018. Syn-sedimentary tectonics and facies analysis in a rift setting: Cretaceous Dalmiapuram Formation, Cauvery Basin, SE India. *Journal of Palaeogeography* 7 (2), 146-167.



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Date: 17.12.2015

To whom it may concern

This is to certify that the College has no objection in permitting Sri/Smt./Dr. Nivedita Chakraborty, Assistant Professor in Geology to continue her collaborative research/academic linkages/activities with Department of Geological Sciences, Jadavpur University, Kolkata to be started in January 2016 without hampering the normal duties of the College.

I wish her all success in life.

Dr. Aresh Kumar Maji
Officer-in-Charge

Dr. ASESH KUMAR MAJI, W.B.E.S.
Officer-in-Charge
Government General Degree College at Mejia (Gopalpur)
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যাদবপুর বিশ্ববিদ্যালয়
কলকাতা-৭০০০৩২, ভারত



JADAVPUR UNIVERSITY
KOLKATA-700032, INDIA

FACULTY OF SCIENCE, DEPARTMENT OF GEOLOGICAL SCIENCES

This is to certify that Dr. Nivedita Chakraborty, Assistant Professor, Department of Geology, Kabi Jagadram Roy Government General Degree College, Mejia (Bankura) and me are doing a collaborative research on Cretaceous rocks of Cauvery (East coast) and Kutch Basin (West coast), India since 2016. We did geological field works together in different remote areas and open cast mines in and around Ariyalur (Tamil Nadu) and Bhuj (Gujarat) since 2016. We have published multiple papers in different peer reviewed journals and books during 2016-2021.

The collaborative linkage between Dr. Chakraborty and me is for academic and research purpose.


Dr. Subir Sarkar 17/11/2023
Professor
Department of Geological Sciences
Jadavpur University
Kolkata - 700 032

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Collaborative Geological Fieldwork at Cauveri Basin (December, 2022)

[Collaboration (Geology) between Kabi Jagadram Roy Government General Degree College (Dr. Nivedita Chakraborty, Asst. Prof. of Geology) & Jadavpur University (Dr. Subir Sarkar, Professor of Geology)]



Collaborative Geological Fieldwork at Kaladgi Basin (January, 2023)

[Collaboration (Geology) between Kabi Jagadram Roy Government General Degree College (Dr. Nivedita Chakraborty, Asst. Prof. of Geology) & Jadavpur University (Dr. Subir Sarkar, Professor of Geology)]



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Collaborative Geological Fieldwork at Kutch Basin (15/12/2023)

[Collaboration (Geology) between Kabi Jagadram Roy Government General Degree College (Dr. Nivedita Chakraborty, Asst. Prof. of Geology) & Jadavpur University (Dr. Subir Sarkar, Professor of Geology)]



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**Aseismic Tectonism-Induced
Soft-Sediment Deformation
in a Tranquil Palaeogeography:
Chikkshelikere Limestone Member,
Proterozoic Kaladgi Basin, Southern
India**



**Soumik Mukhopadhyay, Adrita Choudhuri, Nivedita Chakraborty
and Subir Sarkar**

Abstract The wide spectrum of synsedimentary deformation products occurring almost at all stratigraphic levels within the ~40 m-thick section of the Chikkshelikere Limestone Member of tentative Mesoproterozoic age in India is evaluated for its origin. Among the two principal facies components, both carbonate, of this Member the dark micritic facies generally underwent brittle deformation, and the light microsparry facies responded in ductile fashion to the same deformational stress. Breccia patches, hardly having any boundary, abound at almost every stratigraphic level within the Chikkshelikere Limestone Member. The third facies constituting less than 3% by volume of the Member is of laterally persistent carbonate intraclastic conglomerate beds. The dark facies is of massive micrite, while the light facies is made up of interlocking microspar crystals, but bears minor wave-current structures, and rare minute erosional features at its base. Non-luminescent character of the former under CL is reminiscent of oxidizing basin-floor environment, while the bright orange luminescence of the latter testifies pervasive burial recrystallization. The dark micritic facies is interpreted as indigenous and the light microsparry facies as allochthonous, possibly laid by highly energy-depleted storm wave-cum-current. Mineralogical as well as geochemical analyses indicate preferred dolomitization and carbon enrichment in the dark micritic facies. Selective pyritization is also observed along the base of the same facies. These features collectively suggest selective microbial mat proliferation within this facies. Despite early induration being the rule for carbonate sediments, microbial mat growth apparently enhanced its rate within the dark micritic facies

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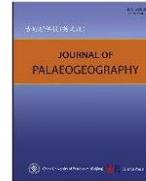
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Lithofacies palaeogeography and sedimentology

Syn-sedimentary tectonics and facies analysis in a rift setting: Cretaceous Dalmiapuram Formation, Cauvery Basin, SE India



Nivedita Chakraborty ^{a,*}, Subir Sarkar ^b

^a Department of Geology, Kabi Jagadram Roy Govt. General Degree College, Bankura-722143, India

^b Department of Geological Sciences, Jadavpur University, Kolkata-700032, India

Abstract The Cretaceous (Albian–Cenomanian) Dalmiapuram Formation is one of the economically significant constituents in the hydrocarbon-producing Cauvery rift basin, SE India that opened up during the Late Jurassic–Early Cretaceous Gondwanaland fragmentation. The fossil-rich Dalmiapuram Formation, exposed at Ariyalur within the Pondicherry sub-basin of Cauvery Basin, rests in most places directly on the Archean basement and locally on the Lower Cretaceous (Barremian–Aptian) Basal Siliciclastic Formation. In the Dalmiapuram Formation, a facies association of tectonically-disturbed phase is sandwiched between two drastically quieter phases. The early syn-rift facies association (FA 1), records the first carbonate marine transgression within the basin, comprising a bar–lagoon system with occasionally storms affecting along the shore and a sheet-like non-recurrent biomicritic limestone bed on the shallow shelf that laterally grades into pyrite–glauconite-bearing dark-colored shale in the deeper shelf. Spectacular breccias together with varied kinds of mass-flow products comprise the syn-rift facies association (FA 2). While the breccias occur at the basin margin area, the latter extend in the deeper inland sea. Clast composition of the coarse clastics includes large, even block-sized limestone fragments and small fragments of granite and sandstone from the basement. Marl beds of quieter intervals between tectonic pulses occur in alternation with them. Faulted basal contact of the formation, and small grabens filled by multiple mass-flow packages bear the clear signature of the syn-tectonic activity localized contortions, slump folds, and pillow beds associated with mega slump/slide planes and joints, which corroborates this contention further. This phase of tectonic intervention is followed by another relatively quieter phase and accommodates the late syn-rift facies association (FA 3). A tidal bar–interbar shelf depositional system allowed a transgressive systems tract motif to grow eventually passing upwards into the Karai Shale Formation, whose contact with the Dalmiapuram Formation is gradational.

Keywords Syn-sedimentary tectonics, Facies analysis, Carbonate shelf, Cretaceous, Dalmiapuram Formation, Cauvery Basin

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SUMMARY OF THE COLLABORATIVE RESEARCH WORK AND OUTCOME

1. Name of the Collaborating Institution with contact details : **DEPARTMENT OF GEOLOGICAL SCIENCES, JADAVPUR UNIVERSITY**
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2. Start Date of Collaboration : January, 2016
3. End date of Collaboration : Continuing
4. Duration : January, 2016- Continuing
5. Purpose of the Collaboration : Collaborative Research, Geological field Work & Publication.
6. Collaborative Research Activities : Dr. Nivedita Chakraborty, Department of Geology, Kabi Jagadram Roy Government General Degree College and Prof. Subir Sarkar, Department of Geological Sciences, Jadavpur University carried out collaborative research, field work in Cretaceous rocks of Cauvery, Kaladgi and Kutch Basins.

PUBLISHED 02 (TWO) SCIENTIFIC PAPERS during 2018-2019.

7. Outcomes in terms of Research Publications: i) Mukhopadhyay, S., Choudhuri, A., **Chakraborty, N., Sarkar, S.**, 2019. Aseismic tectonism-induced soft-sediment deformation in a tranquil palaeogeography: Chikkshelikere Limestone Member, India in: Mondal, M.E.A. (ed.) *Geological Evolution of Precambrian Indian Shield* (Ed.), SES Series, Springer, Chapter 16, 351-372p.

ii) **Chakraborty, N., Sarkar, S.**, 2018. Syn-sedimentary tectonics and facies analysis in a rift setting: Cretaceous Dalmiapuram Formation, Cauvery Basin, SE India. *Journal of Palaeogeography* 7 (2), 146-167.

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