

Dr. Priyabrata Das

M.Sc, Ph.D

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**Academic Qualification:****Ph.D.** (2014)- Earth Sciences (Sedimentology, Geochemistry), Hiroshima University, Japan.**M.Sc.** (2007)- Applied Geology, Presidency College-Kolkata, Calcutta University, India.- First class.**B.Sc.** (2005)- Geology (Hons.), The University of Burdwan, India.- Second class.

Ph.D thesis title: Facies model, Geochronology and Sequence analysis of the Singhora Group of rocks: implications to age and basinal forcings in early history of the Chhattisgarh basin, central India.

Highlights of Ph.D work:

- **Sedimentological study:**
 - Outcrop-based sedimentology: characterization of sedimentary facies, reconstruction of depositional process and sedimentary environments, estimation of hydrological parameters of the ancient river systems.
 - Evolutionary study of sedimentary basin with respect to relative sea-level changes.
 - Study of sediment-biota interaction from mid-Proterozoic siliciclastic shallow-marine environments.
- **Geochemical and Geochronological study:**
 - Sm-Nd geochronology and geochemical characterization of basin hosted magmatic suits and, Nd isotope mapping for provenance study.
 - Geochronological and geochemical study of volcanoclastic units.

Postdoctoral research experiences:

- **Research Associate-CSIR (Direct) (September 2019- Present)**
Planetary Science Division, Physical Research Laboratory, Ahmedabad-Gujarat
 - Characterizing rhythmic stratifications of Gale crater, Mars using NASA's Curiosity rover data.
 - ChemCam (LIBS)-based characterization of hydration in surface soil of Gale crater and, the study soil-moisture interaction in present-day aeolian sedimentation system of Mars.
- **Postdoctoral Research Fellow (March 2019 – September 2019)**
Manipal Academy of Higher Education, Manipal-Karnataka
 - Reconstruction of ancient sedimentary processes of Mars using earth analogues.
- **Postdoctoral Fellow (August 2016 – August 2018)**
Planetary Science Division, Physical Research Laboratory, Ahmedabad-Gujarat
 - Study of water-rock interaction of Martian past: a martian meteorite (Nakhilite) and satellite data- based study.
- **Research Associate (CSIR-project) (May 2015–July 2016)**
Jadavpur University, Kolkata

- Sedimentological and geochemical study of western Indian (Kachchh) Cretaceous fluvial sediments and paleosol horizons.

Employment details:

- **Asst. Manager-Mineralogist** (July 2013 –April 2015)
Balasore Alloys Limited, Kaliapani Chromite Mines, Sukinda, Odisha, India
 - Engaged in full time activities in chrome ore exploration, quality control, mining and production planning.

Consulting experience:

- **Consultant Geologist** (part-time) - **CE Test Engineering Consultants, India** (2016).
 - Trained and guided the regular geologist and civil engineers in structural and lithological mapping in and around the railway tunneling project at Manipur.
 - Conducted petrological survey, core sample analysis (mineralogical, grain-size, modal and petro-fabrics) and prepared geological report of railway tunneling project, Manipur.

Fellowship/ Award / Sponsorships:

- Research Associate (CSIR-Direct), Planetary Sciences- 2019
- Postdoctoral Fellowship (MAHE-Manipal)- 2019
- Postdoctoral Fellowship (P.R.L Ahmedabad)-2016
- Research Associate (CSIR-Project)-2015
- International Association of Sedimentologist (IAS) student travel grant-(2012)
- CSIR international travel grant-(2012)
- DST international travel grant-(2012)
- Senior Research Fellowship (CSIR-Direct)-(2011-13)
- Junior Research Fellowship (DST-Project)-(2008-10)
- Junior Research Fellowship (DST-Project)-(2008-08)

Invited talks (last 3 years):

- Webinar on “Was Mars ever habitable for life?” Hosted by: **Department of Earth Sciences and Environment, Manav Rachna International Institute of Research and Studies, India.- July-2020**
- Seminar on “Understanding of early Mars from the rover based observation of sedimentary rock layers of Gale crater, Mars” at **Department of Earth sciences, IISER-Mohali, 2019.**
- Seminar on “The understanding of early Mars: The key science outcome of NASA’s Curiosity rover” at **Manipal Academy of Higher Education, Manipal 2019**

Personal details:

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|------------------------------|-------------------|
| Date of Birth: 23rd May 1984 | Gender: Male |
| Marital status: Married | Category: General |
| Nationality: Indian | |

Permanent Address:

House no. 29/N, Block –A, Surya Sen Pally,
Durgapur, West Bengal, PIN-713201

Present Address:

Plot no. 912b/2, Sector 5C
Gandhinagar- 382006, Gujarat

List of peer-reviewed publications:

1. Priyabrata Das, Amit Basu Sarbadhikari, Sourabh Subham. Soil-Moisture Interaction and its Effects on Present-Day Martian Surface at Gale Crater. (Under review).
2. Rishitosh K. Sinha, Vijayan S., Anil D. Shukla, Priyabrata Das, Falguni Bhattacharya. 2018. Gullies and debris-flows in Ladakh Himalaya, India: a potential Martian analog. **Geological Society, London, Special Publications**, 467, 315-342.
3. Partha Pratim Chakraborty, Subhojit Saha, and Priyabrata Das. 2015. Geology of Mesoproterozoic Chhattisgarh basin, central India: current status and future goals. Precambrian Basins of India: Stratigraphic and Tectonic Context. **Geological Society, London, Memoirs**, 43, 185–205.
4. Partha Pratim Chakraborty, Kaushik Das, Subhojit Saha, Priyabrata Das, Subrata Karmakar, Manish A. Mamtani. 2013. Reply to the discussion of Deb (2013) on the paper of Saha et al. (2013) entitled 'Tectono-magmatic evolution of the Mesoproterozoic Singhora basin, central India: Evidence for compressional tectonics from structural data, AMS study and geochemistry of basic rocks. **Precambrian Research**, 236, 297-302.
5. Subhojit Saha, Kaushik Das, Partha Pratim Chakraborty, Priyabrata Das, Subrata Karmakar, Manish A. Mamtani. 2013. Tectono-magmatic evolution of Mesoproterozoic Singhora basin, central India: Evidences for compressional tectonics from structural data, AMS study and geochemistry of basic rocks. **Precambrian Research**, 227, 276-294.
6. Partha Pratim Chakraborty, Priyabrata Das, Subhojit Saha, Kaushik Das, Shruti Ranjan Mishra and Pritam Paul. 2012. Microbial mat related structures (MRS) from Mesoproterozoic Chhattisgarh and Khariar basins, Central India and their bearing on shallow marine sedimentation. **Episodes**, 35 (4), 513-523.
7. Partha Pratim Chakraborty, Priyabrata Das, Kaushik Das, Subhojit Saha, S. Balakrishnan. 2012. Regressive depositional architecture on a Mesoproterozoic siliciclastic ramp: sequence stratigraphic and Nd isotopic evidences from Bhalukona Formation, Singhora Group, Chhattisgarh Supergroup, central India. **Precambrian Research**, 200-203, 129-149.
8. Priyabrata Das, Kaushik Das, Partha Pratim Chakraborty, S. Balakrishnan. 2011. 1420 Ma diabasic intrusives from the Mesoproterozoic Singhora Group, Chhattisgarh Supergroup, India: Implications towards non-plume intrusive activity. **Journal of Earth System Sciences**, 120 (2), 223-236.
9. Partha Pratim Chakraborty, Ashish Sarkar, Kaushik Das, Priyabrata Das. 2009. Alluvial fan to storm-dominated shelf transition in the Mesoproterozoic Singhora Group, Chhattisgarh Supergroup, Central India. **Precambrian Research**, 170 (1-2), 88-106.

Conference abstracts:

1. Rhythmic Sedimentary Layering at Vera Rubin Ridge, Gale Crater, Mars: Possible Tidal Forcing on Ancient Mars. **2020**. P. Das, A. Basu Sarbadhikari, R. Sarkar, S. Karunatillake, K. S. Edgett, P. P. Paul, J. P. Brothers, S. A. Armstrong. **51st Lunar and Planetary Science Conference**.
2. Soil-Moisture Interaction on Present-Day Surface Processes at Gale Crater, Mars. **2020**. P. Das, A.

- Basu Sarbadhikari, S. Subham. **36th IGC, New Delhi.**
3. New constraints of the petrogenesis of Piplia Kalan Eucrite, 2017. M. S. Sisodia A. Basu Sarbadhikari, R. R. Mahajan, P. Das, S. Chakraborty, E. V. S. S. K. Babu, T. Vijaya Kumar. **80th Annual Meeting of the Meteoritical Society. Germany.**
 4. Subaqueous mass-flow deposits at Noachian Terby Crater, Mars: Decoding rheology and depositional style. 2017. P. Das, A. Basu Sarbadhikari. **European Planetary Science Congress. Riga, Latvia.** (not presented)
 5. Subaqueous Sediment Remobilization and Development of Syndepositional Deformational Structures on Mars: A Kinematic Approach from the Noachian Terby Crater. 2017. P. Das, A. Basu Sarbadhikari R. Sarkar. **AGU Fall meeting.** US. (not presented)
 6. Remanent magnetization in lunar samples and implication to lunar dynamo: Resent appraisal. 2017. J. Ghosh, A. Basu Sarbadhikari, P. Das, G. Arora. **Brainstorming session, Physical Research Laboratory, Ahmadabad. India.**
 7. Paleosol genesis on Mars: Decoding ancient aqueous processes at the surface atmosphere interface. 2016. P. Das, A. Basu Sarbadhikari, J. Ghosh. **Brainstorming session, Physical Research Laboratory, Ahmadabad. India.**
 8. Mass flow from the Paleo-proterozoic Bayana sub-basin: decoding rheology, grain support mechanism and depositional style. 2017. S. Basu Roy, P. Das. **National Geo-research scholar meet 2016 WIHG. India.**
 9. Evolution of a Mesoproterozoic craton-margin basin: Evidences from the Singhora basin, central India. 2012. P. P. Chakraborty, P. Das, S. Saha, K. Das. **29th Meeting of International Association of Sedimentologist (IAS), Schlading, Austria.**
 10. Depositional architecture of a siliciclastic Mesoproterozoic basin in sequence stratigraphic backdrop: Singhora Group, Chhattisgarh Supergroup, central India. 2012. P. Das, P. P. Chakraborty, S. Saha, K. Das. **29th Meeting of International Association of Sedimentologist (IAS), Schlading, Austria.**
 11. Structural evolution and possible tectonic framework of the Singhora Basin, Central India. S. Saha, P. Das, K. Das, S. Karmakar and P. P. Chakraborty. 2011. **International Symposium on Precambrian Accretionary Orogens and Field Workshop in the Dharwar craton, Southern India. - University of Delhi, India.**
 12. Geochemistry and Geochronology of basaltic dykes in Mesoproterozoic Singhora Group, Chattisgarh Supergroup, India. 2010. P. Das, K. Das, S. Balakrishnan and P. P. Chakraborty. **6th International dyke conference, Varanasi. India.**

Research impact (Google Scholar):

Citations- **163**

h-index- **6**

i10-index- **6**

Publication details can be found in: <https://scholar.google.co.in/citations?user=QRraFUoAAAAJ&hl=en>

PhD thesis: <http://ir.lib.hiroshima-u.ac.jp/en/list/creator/Priyabrata,Das/item/37442>
