

CURRICULUM VITAE

Dr. Prabodha Ranjan Sahoo

Associate Professor

Department of Applied Geology

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FIELD OF SPECIALIZATION:

Mineral Exploration, Ore Geology, Mineralogical Characterization and Geochemistry

EDUCATIONAL QUALIFICATIONS:

Ph.D. in Applied Geology: IIT(ISM) Dhanbad

Thesis Title: Metallogenetic Aspects of Gold Mineralization in and around Kundarkocha area of the Singhbhum Orogenic belt, eastern India.

M. Phil in Geology: Utkal University, Bhubaneswar, Odisha

M. Sc. in Geology: Utkal University, Bhubaneswar, Odisha

B. Sc. in Geology (Hons): North Orissa University, Odisha

EXPERIENCE IN ACADEMIC/INDUSTRY/ R&D LABORATORY OF REPUTE

Associate Professor

13.04.2022 – present

Assistant Professor

11.06.2013 – 12.04.2022

Department of Applied Geology

Indian Institute of Technology (Indian School of Mines)

Dhanbad, Jharkhand

Geologist

28.06.2010 to 07.06.2013

Geological Survey of India, Western Region, Jaipur

PROFESSIONAL RECOGNITION/AWARD

National Geoscience Award, Ministry of Mines, Govt. of India in the year 2015 for contribution in the field of Mineral Discovery and Exploration.

MEMBERSHIP OF PROFESSIONAL BODIES

Society of Economic Geologist (SEG), USA

Life Member, Society of Geoscientist and Allied Technologist, Odisha

CONFERENCE/WORKSHOP ATTENDED/DEPUTATION ABROAD

1. Attended 37th International Geological Congress 2024 at Busan, South Korea.
2. Attended India-Australia joint workshop on “critical mineral research: sustainable transition to green energy” at IIT Bombay from 3-4 March 2023.
3. 16th Annual Meeting of Asia Oceania Geosciences Society (AOGS) at Singapore in July, 2019 and presented research work.
4. Visited Democratic Republic of Congo (DRC) to mentor student summer training (2019) for exploration and characterization of Tin-Tungsten-Coltan-Lithium mineralization around Kanuka-Manono area (Sponsored by Mining and Mineral Resources Sprl).
5. 13th Annual Meeting of Asia O Asia Oceania Geosciences Society (AOGS) at Beijing in July, 2016 and presented paper.
6. Attended the Eighty fourth Annual Meeting of the Indian Academy of Science at Banaras Hindu University, Varanasi as an invited Young Teacher during November, 2018.
7. Workshop on “Advances in Earth System Science” at BHU, Varanasi from 31.10.2018 to 01.11.2018.
8. Participated in “MPT 2018” at IIT(ISM) Dhanbad.
9. Participated in Asian Current Research on Fluid Inclusions VI (ACROFI VI) at IIT Bombay in November, 2016.

DETAILS OF SPONSORED R&D PROJECT

1. Characterization of sulphide minerals in Indian basemetal and gold deposits for assessment of strategic element recovery opportunity. Project tenure: 2024-2027, Sponsoring Agency: **DST-SERB**, Sanctioned Budget- **Rs. 56.76 Lakhs**, **PI: Dr. P R Sahoo**, Co-PI” Dr. A S Majumdar.
2. Geochemical and mineralogical approach for the classification of pegmatites and related rocks in Koderma, Jharkhand and Mandya, Karnataka to evaluate the economic potentiality for Li-Cs-Rb, Nb-Ta and REE. Project tenure: 2023-2026, Sponsoring Agency: **DST-SERB**, Sanctioned **Budget- Rs. 20.10 lakhs**, **PI: Dr. R Anand**, **Co-PI: Dr. P R Sahoo**.
3. "Metallogenetic Evolution of Gold (+ PGE) Mineralization with implications for crust-mantle processes, invisible gold and role of organic matter linked to mineralization events in parts of Archean Singhbhum orogenic belts". Sponsoring Agency: **DST-SERB**, **Sanctioned Budget- Rs. 51.80 lakhs**, **PI: Prof. A S Venkatesh**, **Co-PI: Dr. P R Sahoo**
4. Insights into the metallogenesis, tectonic elements, fluid evolution and controls of copper mineralization around Mundiawas area, Alwar District, Rajasthan: Implications for exploration. Sponsoring Agency: **DST-SERB**, **Sanctioned Budget- Rs. 19.11 lakhs**, **PI: Dr. P R Sahoo**

Outreach programmes:

1. Organised a field training programme on “**Geological Mapping of Jharia Coal Field**” from 07.03.2016 to 16.03.2016 for postgraduate students, research scholars of different universities and organisation at the level of co-coordinator with Dr. Sahendra Singh (Co-ordinator) and Prof. A S Venkatesh (co-coordinator). The programme was supported by MOES, Govt. of India.
2. Co-convener of Two weeks Professional Development Programme on “**Advanced Geological Technology**” for Tata Steel Executives.

Research Guidance:

PhD awarded	Thesis Submitted	PhD ongoing
08	-	06

Dissertation Guidance (Completed): 42 nos. (09 M.Tech. + 33 M. Sc. Tech)

List of Publications:

a) Refereed Journals (Published/Accepted)

1. Satapathy, J.S., Singh, S and **Sahoo, P. R** (2025) Mineralogical and Geochemical Characteristics of Emeralds from the Bahutiya and Gurabanda Deposits of Jharkhand, India, and Comparison with Other World Emerald Occurrences. Accepted for publication in *Acta Geologica Sinica*.
2. Mahanta, C.R., **Sahoo, P.R.**, Mohanta, M.K., Rath, R.K., Dey, S., Tripathy, S.K., Venkatesh, A.S. (2024) Mineralogical Characteristics of Hematitic Iron Ore: A Geometallurgical Study on Ore from Eastern India. *Minerals* **13** (9), 1194.
3. Arasada, R.C., Kumar, S., Rao, G.S., Biswas, A., **Sahoo, P.R.**, Singh S. (2024) A fuzzy C-means clustering approach for petrophysical characterization of lithounits in the North Singhbhum Mobile Belt, Eastern India. *Acta Geophysica*, 1-17.
4. Sahoo, J., **Sahoo, P. R.**, Khan, I. and Venkatesh, A.S. (2023) Facies variations of felsic volcanic rocks around Mundiawas-Khera copper deposit, Alwar Basin, North Delhi Fold Belt, western India. *Journal of the Geological Society of India*, v. **99**, pp. 259–267.
5. Prasad, J., Venkatesh, A.S., **Sahoo, P.R.**, (2022) A submarine hydrothermal origin of banded iron formations from Archean Kiriburu-Meghahatuburu iron ore deposit, Singhbhum Craton, eastern India. *Ore Geology Reviews*, v. 150, 105125, <https://doi.org/10.1016/j.oregeorev.2022.105125>.
6. Sharma, J.P., **Sahoo, P.R.** and Babu, E.V.S.S.K., (2022) Evidence of ore-bearing fluid interaction with the Proterozoic metasediments for the genesis of scapolite in parts of the North Delhi Fold belt, western India. <https://doi.org/10.1017/S0016756822000681>
7. Sahoo, J., **Sahoo, P. R.**, Khan, I. and Venkatesh, A.S. (2022) Insights into the Metallogenesis of the Felsic Volcanic Hosted Mundiawas-Khera Cu Deposit, Alwar Basin, Western India. *Minerals*, 12, 370, pp. 1-24, <https://doi.org/10.3390/min12030370>

8. Dwivedy, S. and **Sahoo, P. R.** (2021) Geology and trace element geochemistry of the Albitite hosted iron ore mineralization around Khetri copper deposit, India: implications for an IOA type deposit. *Ore Geology Reviews*, v. 138, <https://doi.org/10.1016/j.oregeorev.2021.10434.3>
9. Kanouo, N. S. Kouske, A. P. Ngueutchoua, G., Venkatesh, A.S., **Sahoo, P. R.**, and Basua, E. A. A. (2021). Eoarchean to Neoproterozoic Detrital Zircons from the South of Meiganga Gold-Bearing Sediments (Adamawa, Cameroon): Their Closeness with Rocks of the Pan African Cameroon Mobile Belt and Congo Craton. *Minerals*, 11, 77. <https://dx.doi.org/10.3390/min11010077>
10. Majumdar, S., Singh, S., **Sahoo, P. R.**, (2020) Characterization of organic matter and its implications for pyrite hosted refractory gold mineralization along the South Purulia Shear Zone, eastern India. *Ore Geology Reviews*, v. 124, <https://doi.org/10.1016/j.oregeorev.2020.103584>.
11. Rao, G.S., Rama Chandrudu, A., **Sahoo, P.R.**, (2020) Integrated geological and geophysical studies for delineation of laterite covered chromiferous ultramafic bodies around Bhuban, south western part of Sukinda Massif complex, Odisha. *Ore Geology Reviews*, V. 119, April 2020, <https://doi.org/10.1016/j.oregeorev.2020.103402>.
12. Sharma, J.P., **Sahoo, P.R.**, Mahanta, H., Venkatesh, A.S., Babu, E.V.S.S.K., John, M.M., (2020) Constraints on the genesis of the Proterozoic bornite dominated copper deposit from Nim ka Thana, western India: An IOCG perspective. *Ore Geology Reviews*, V 118, March 2020, <https://doi.org/10.1016/j.oregeorev.2020.103338>
13. Sengar, V.K., Venkatesh, A.S., Champati Ray, P.K., **Sahoo, P.R.**, Khan, Israil, Chhatoraj, S.L., (2020) Spaceborne mapping of hydrothermal alteration zones associated with the Mundiawas-Khera copper deposit, Rajasthan, India, using SWIR bands of ASTER: Implications for exploration targeting. *Ore Geology Reviews*, v, 118, <https://doi.org/10.1016/j.oregeorev.2020.103327>.
14. Suresh Kumar, Rambabu Singh, A. S. Venkatesh, G. Udayabhanum, **P. R. Sahoo** (2019) Medical Geological assessment of fluoride contaminated groundwater in parts of Indo-Gangetic Alluvial plains. *Scientific Reports* volume 9, Article number: 16243.
15. Majumdar, S., Singh, S., **Sahoo, P. R.**, and Venkatesh, A S (2019) Trace-element systematics of pyrite and its implications for refractory goldmineralisation within the carbonaceous metasedimentary units of Palaeoproterozoic South Purulia shear zone, eastern India. *Journal of earth System Sciences*, 128:233
16. Swati Pant, Sahendra Singh, **P.R. Sahoo**, Ajay Kumar, B. Saravanan, A.S.Venkatesh, G.S. Yadav, Pramod Kumar (2019) Mineral Chemistry and Geothermometry of Chlorites in Relation to Physico-Chemical Conditions of Uranium Mineralisation in Central Part of Singhbhum Shear Zone, Eastern India. *Ore Geology Reviews*, V 112, <https://doi.org/10.1016/j.oregeorev.2019.102997>.
17. Rao, G. S., Ramachandrudu, A., **Sahoo, P.R.**, Khan, I (2019) Integrated Geophysical investigations in the Mudiyawas-Khera block of Alwar Basin of North Delhi Fold Belt (NDBF): Implications on Copper and associated Mineralization. *Journal of earth System Sciences*, 128:161, <https://doi.org/10.1007/s12040-019-1193-7>.

18. Chakravarti, R., Singh, S., Venkatesh, A.S., Patel, K. and **Sahoo, P.R.** (2018) A Modified Placer Origin for Refractory Gold Mineralization Within the Archean Radioactive Quartz-Pebble Conglomerates from the Eastern Part of the Singhbhum Craton, India. *Economic Geology*, v. 113, NO. 3, pp. 579-596.
19. Prasad, J., Venkatesh, A.S., **Sahoo, P.R.**, Singh, S., and Nguo Sylvestre Kanouo, N. S., (2017) Geological Controls on High-Grade Iron Ores from Kiriburu-Meghahatuburu Iron Ore Deposit, Singhbhum-Orissa Craton, Eastern India. *Minerals* 7, 197; [doi:10.3390/min7100197](https://doi.org/10.3390/min7100197).
20. Yadav, G. S., Pandey, U. K., Aravind, S. L., Panchal, P. K., Venkatesh, A. S., **Sahoo, P. R.**, Chaturvedi, A. K., Rai, A. K. and Parihar, P.S. (2016). U-Pb, Pb-Pb and Sm-Nd ages of Davidite within albitite zone from Bichun, Jaipur District, Rajasthan, India: Possible link between uranium mineralization and Grenvillian orogeny. *Current Science*, v. 111, NO.5, pp. 907-913.
21. **Sahoo, P.R.** and Venkatesh, A.S., (2015) Constraints of mineralogical characterization of gold ore: Implication for genesis, controls and evolution of gold from Kundarkocha gold deposit, eastern India. *Journal of Asian Earth Sciences*, v. 97, pp. 136-149.
22. Khan, I., **Sahoo, P.R.** and Rai, D. K. (2015) Geological set up of low grade copper ores at Mundiawas-Khera area, Alwar district, Rajasthan. Geological Survey of India, Recent Development in Metallogeny and Mineral Exploration in Rajasthan Special Publication, Vol. No. 101, June 2015, pp. 43-58.
23. **Sahoo, P. R.** and Venkatesh, A.S., (2014) "Indicator" carbonaceous Phyllite/graphitic schist in the Archean Kundarkocha gold deposit, Singhbhum orogenic belt, eastern India: Implications for gold mineralization vis-a-vis organic matter. *Journal of Earth System Science*, v. 123, No. 7, pp. 1693-1703.
24. Khan, I., **Sahoo, P.R.** and Rai, D. K. (2014). Paleoproterozoic felsic volcanics in Alwar Basin of North Delhi fold Belt, Rajasthan: Implication for copper mineralisation. *Current Science*, v. 106, No. 1, pp. 27-28.
25. Chandan, K.K., Jha, V., Roy, S., Khatun, M., **Sahoo, P.R.** and Singh, S., (2014). Ore Microscopic Study of the Gold Mineralization within Chandil Formation, North Singhbhum Mobile Belt, Eastern India. *International Journal of Earth Sciences and Engineering*, v.7, No. 1, pp. 213-222.
26. Khan, I., Rai, D. K. and **Sahoo, P.R.** (2013). A note on new find of thick copper and associated precious metal mineralisation from Alwar Basin of North Delhi fold Belt, Rajasthan. *Journal of Geological Society of India*, v. 82, pp. 495-498.
27. **Sahoo, P. R.**, Prasad, J., Prakasam, M., Singh, S. and Venkatesh, A. S. (2009). Orogenic Gold Mineralisation in and around Kundarkocha, East Singhbhum, Jharkhand. *Journal of the Indian Academy of Geoscience*, v. 52, No. 1, pp. 11-18.

Conference Proceedings/Records/Abstracts

1. **P R Sahoo**, Israil Khan, P R Golani, A S Venkatesh, Sushmita Gupta (2016) Geological aspects and fluid evolution for copper mineralization in the Mundiawas-Khera area,

Alwar district, Rajasthan, western India. Asian Current Research on Fluid Inclusions (ACROFI VI) Abstract volume, pp. 139-140.

2. **Sahoo, P.R.**, Venkatesh, A.S. and Singh, S. (2016) Genesis of Gold Mineralization in Kundarkocha Gold Deposit, Singhbhum Craton, Eastern India: Evidences from Host Rock Geochemistry. 35th International Geological Congress, Cape Town, South Africa.
3. Khan, I., **Sahoo, P.R.**, Venkatesh, A.S., Golani, P.R., Jena, P.K. and Siddiqui, S. (2016) Geological controls, environment of formation and style of copper and gold mineralization in the Mundiawas-Khera area of Alwar district, Rajasthan, Western India. 35th International Geological Congress, Cape Town, South Africa.
4. Sharma, J.P., Mahanta, H., **Sahoo, P.R.**, Venkatesh, A.S., and Patil, D.J. (2016) Stable Isotopic Signatures and Genetic Implications on Copper (+Ag) Mineralization in and Around Nim Ka Thana, North Delhi Fold Belt, Western India. 13th Annual Meeting of the Asia Oceania Geosciences Society, Beijing, China.
5. Chakravarti, R., Singh, S., Mahanta, S., **Sahoo, P.R.**, Venkatesh, A.S. (2016) Source Characterization of Quartz Pebble Conglomerates within Gorumahisani-Badampahar Belt, Singhbhum-Orissa Iron Ore Craton, India: Implications for Radioactive and Gold Mineralization. 13th Annual Meeting of the Asia Oceania Geosciences Society, Beijing, China.
6. Majumdar, S., Singh, S. and **Sahoo, P.R.**, (2016) Invisible Gold Occurrence within the Sulfides of Paleo to Mesoproterozoic South Purulia Shear Zone, Eastern India Craton- Implications from EPMA and SEM Analysis. 13th Annual Meeting of the Asia Oceania Geosciences Society, Beijing, China.
7. Kumar, A., **Sahoo, P.R.**, and Venkatesh, A.S., (2016) Significance of Sulfosalts within the Archean Kundarkocha Gold Deposit, Eastern India. 13th Annual Meeting of the Asia Oceania Geosciences Society, Beijing, China.
8. Majumdar, S., Singh, S. and **Sahoo, P.R.**, (2016) Mineralization along South Purulia Shear Zone, eastern India Craton. National Conference on Recent Advances in Science and Engineering (RASE-2016), March 28-29, 2016, ISM Dhanbad.
9. Chakravarti, R., Mahanta, S., Singh, S., **Sahoo, P.R.**, Venkatesh, A.S. (2016) Rare Au-U mineralization within Quartz Pebble Conglomerates from the Gorumahisani-Badampahar Belt, Singhbhum-Orissa Iron Ore Craton, India: Implications from SEM, EPMA and petrographic studies. National Conference on Recent Advances in Science and Engineering (RASE-2016), March 28-29, 2016, ISM Dhanbad.
10. Khan, I., **Sahoo, P.R.** and Rai, D.K., (2014) Copper mineralisation in Mundiawas-Khera area: An opportunity for mining of low grade and high tonnage copper deposit ; Indian Institute of Metals, Khetri Nagar Chapter, 34th National Seminar on Indian Mineral Industries- Challenges and Opportunities held at Khetri Nagar, Rajasthan, India, 2014, pp. 87-88.
11. Khan, I., **Sahoo, P.R.** and Rai, D.K (2014) Copper-Gold mineralisation: Mundiawas-Khera area, Alwar Basin, Rajasthan. Abstract volume of National workshop on “recent trends in mineral exploration Strategies in India” organised by Geological Survey of India, Nagpur on 14th and 15th July 2014.
12. Pritvi Karan, M., Vidyarthi, S., **Sahoo, P. R.**, Singh, S. and Venkatesh, A.S., (2013) Nature of barite and associated possible shungite mineralisation in south-eastern part of Cuddapah basin, A.P. Abstract volume of International Conference on Future Challenges

in Earth Sciences for Energy and Mineral Resources (ESEMR 2013) held at ISM Dhanbad from 14th-16th Nov. 2013. pp. 278.

13. Khan, I. and **Sahoo, P.R.** (2013) Investigation for copper and associated precious metals, Khera Block, Mundiawas-Khera area, Alwar district, Rajasthan, Records of GSI, V.145-146, pp 33-34.
14. Sharma, V., Mondal, B. and **Sahoo, P. R.** (2013) Investigation for base metal in Mahawa east block, Sikar district, Rajasthan. Records of GSI, V.145-146, pp 37.

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