1. **Name in full : Sahendra Singh, PhD**
2. **Designation: Professor &**
   Institute Chair Professor (Kamala and Yugal Agrawal Chair)
   Dept. of Applied Geology
3. **Department: Applied Geology**
4. **Institution : IIT(ISM) Dhanbad: 826004, Jharkhand**
5. **Address of correspondence : Dept. of Applied Geology, IIT(ISM), Dhanbad- Jharkhand.**
   Cell No: 9471191375
   Phone: +91-326-2235723 (O); +91-326-2235037(R)
   E-mail:sahendra@iitism.ac.in
   sahendrasingh02 @gmail.com

Website: **https://www.iitism.ac.in/index.php/Departments/faculties_detail_apgeo**
Academics IIT (ISM) Dhanbad (irins.org)

Examination	Branch/ Specialization	College/University /Institute	Year
Ph.D	Economic Geology	IIT(ISM), Dhanbad	2007
M. Sc. Tech	Applied Geology	IIT(ISM) Dhanbad	1996
B.Sc.	Geology(Hons)	St. Xavier's College Ranchi	1993
I. Sc.	Science (Maths)	St. Xavier's College Ranchi	1988
Matriculation	Science, Maths, English, Hindi, S.Studies	Vivekananda Vidya Mandir (Ram Krishna Mission)	1986

6. **Teaching/Research/Industrial Experience**:

Employer	Position held	Date of Joining	Date of leaving
IIT(ISM), Dhanbad	Professor	12.07.2024	Continued…
IIT(ISM), Dhanbad	Kamla & Yugal Agrawal Institute Chair Professor	08.12.2022	Continued…
IIT(ISM), Dhanbad	Associate professor	06.06.2019	11.07.2024
IIT(ISM), Dhanbad	Assistant Professor	22.11.2017	05.06.2019
IIT(ISM), Dhanbad	Assistant Professor	28.04.2013	21.11.2017
IIT(ISM), Dhanbad	Assistant Professor	28.04.2010	27.04.13
St. Xavier's College	Sr. Lecturer	01.04.2006	27.04.2010

Ranchi			
St. Xavier's College Ranchi	Lecturer	01.04.1999	01.04.2006
CIMFR, Dhanbad	CSIR-UGC JRF	11.11.1997	30.03.99

Area of Expertise: Application of nanogeosciences in the gold mineralizing system and its exploration implications

Current area of Research: Genesis of sulfide hosted refractory gold mineralization within the carbonate and the carbonaceous metasedimentary units of the Archean-Proterozoic terrain of India

Major Research Achievements:

i. Reported nano gold occurrences within the auriferous pyrites along the Babaikundi-Birgaon axis of the North Singhbhum Mobile Belt, Singhbhum Crustal provice, Eastern India along with my PhD student Dr. Vandana Jha.

ii. Reported crystal lattice bound gold occurrences within the carbonaceous meta-sedimentary units along the South Purulia Shear Zone North Singhbhum Mobile belt, Singhbhum Crustal province, eastern India along with my PhD student Ms.Subhashree Majumdar.

.

iii. Reported sulfide hosted refractory gold occurrences within the Quartz Pebble Conglomerates of Gurumahisani-Badam pahar belt Eastern India along with Dr Rajarshi Chakravarti.

iv. Proposed modified placer origin of the refractory gold mineralization in the Archean QPC's of the Gurumahisani-Badampahar belt, Singhbhum craton along with Dr Rajarshi Chakravarti.

v. Reported the presence of the primitive life forms i.e. ancient cynobacteria within the Archean gold bearing QPC's of eastern India along with my PhD student Dr Rajarshi Chakravarti. The results are yet to be published.

vi. Used the integrated application of geological, geochemical and geophysical technique to study the petrophysical properties of the auriferous host rocks and its implication on the gold mobilization/precipitation.

vii. Applied the trace element systematic of the auriferous sulfide hosted within the Vempalle dolostone, Cuddapah Supergroup to decode the gold mineralization episodes within the ore system. The results are yet to be published.

viii. Worked on the microstructural control on the uranium mineralization along the central sector of Singhbhum Shear Zone(SSZ), eastern India.

ix. Carried out collaborative work with Geological Survey of India and Vedanta exploration on the prospect of Carlin type of gold occurrences in the Archean and Proterozoic terrain of India

7. No. of Research Publications in SCI indexed Journals

i. Sathapathy, J.S.,Singh, S.,Sahoo, P.R., 2025:Mineralogical and Geochemical Characteristics of Emeralds fromthe Bahutiya and Gurabanda Deposits of Jharkhand, India, and Comparison with Other World Emerald Occurrences. Acta Geologica Sinica (accepted for publication)

ii. Rao G.S., Arasada R. C., Kumar, S.,Biswas,A.,Sahoo,P.R., and Singh, S., 2024: Afuzzy C-means clustering approach for petrophysical characterization of lithounits in the North Singhbhum MobileBelt, Eastern India. Acta Geophysica https://doi.org/10.1007/s11600-024-01402-7

iii. Horo, D.; Pal, S.K.; Singh, S.,2023 New Insights into the Gold Mineralization in the Babaikundi– Birgaon Axis, North Singhbhum Mobile Belt, Eastern Indian Shield using Magnetic, Very Low-Frequency Electromagnetic (VLF-EM), and Self-Potential Data. Minerals 2023, 13, 1289. https:// doi.org/10.3390/min13101289

iv. Kumar, S., Arasada R. C., Rao G.S. and Singh, S., 2023: Inversion of Gravity and Aeromagnetic Data over the Western North Singhbhum Mobile Belt, Eastern Indian Shield, for Delineating Prospective Sulfide (Au) Mineralization Zones. Natural Resources Research https://doi.org/10.1007/s11053-023-10241-0

v. Chatterjee, S., Singh, S., Shalivahan, Mondal, S., Magneto-tectonic framework of the East Indian Shield: 2023: The present state of knowledge, Journal of Asian Earth Sciences (2023), doi: https://doi.org/ 10.1016/j.jseaes.2023.105667.

vi. Citation: Anand, A.; Singh, S.; Gantait, A.; Srivastava, A.; Mayachar, G.K.; Kumar, M.,2022 Geological Constraints on the Genesis of Jagpura Au-Cu Deposit NW India: Implications from Magnetite-Apatite Mineral Chemistry, Fluid Inclusion and Sulfur Isotope Study. Minerals, 12, 1345. https://doi.org/10.3390/ min1211134

vii. R. Chakravarti, H.E. Frimmel, **S. Singh**, A. Barla, A.S. Venkatesh, S. Balakrishnan.,2022. A geochemical and mineral chemical assessment of sediment provenance and post-depositional alteration of auriferous conglomerates in the Singhbhum Craton. Journal of Geochemical Exploration. https://doi.org/10.1016/j.gexplo.2022.107095 (SCI Impact factor:3.746)

viii. **Singh,S**., Chakravarti,R.,Barla,A., Behera,R.C.,Neogi,S., 2021. A holistic approach on the gold metallogeny of the Singhbhum crustal province: Implications from tectono-metamorphic events and the Archean-Proterozoic regime. Precambrian Research V. 365 (2021) 106376. **https://doi.org/10.1016/j.precamres.2021.106376 (SCI Impact factor-4.725)**

ix. **Singh,S**., 2021: Nanogeoscience in Gold Exploration: Challenges and Opportunities in India. Accepted for publication in the special issue of the Jour. Geol. Soc. India. **(SCI Impact factor-0.899)**

x. Dharmita Horo,.; Sanjit Kumar Pal,; Sahendra Singh,2020: Mapping of gold mineralization in Ichadih, North Sighbhum Mobile Belt, India using Electrical Resistivity Tomography and self-potential methods. Mining, Metallurgy & Exploration (2021) 38:397–411; https://doi.org/10.1007/s42461-020-00340-4 / **(SCI Impact factor:1.020)**

xi. 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 Review, v.124(2020), 103584 https://doi.org/10.1016/j.oregeorev.2020.103584 **(SCI Impact factor-3.809)**

xii. Barla, A., Singh, S.,Chakravarti,R., 2020: Genesis of metasomatic gold mineralization in the Pahardiha-Rungikocha gold deposit, eastern India: constraints from trace element signatures in chromite-cored magnetite and bulk rock geochemistry. Accepted in Ore Geology Review V. 21 (2020)103482. Elsevier's publication. 10.1016/j.oregeorev.2020.103482 ***(SCI Impact factor:3.387)***

xiii. Dharmita Horo, Sanjit Kumar Pal, **Sahendra Singh** and Saurabh Srivastava, 2020: Combined self-potential, electrical resistivity tomography and induced polarisation for mapping of gold prospective zones over a part of Babaikundi-Birgaon Axis, North Singhbhum Mobile Belt, India. Journal of Exploration Geophysics. Doi:10.1080/08123985.2020.1722026.(***SCI Impact factor:0.758)***

xiv. Khatun, M; **Singh, S**; Chakravarti, R; Venkatesh, A.S; (2020). Genetic constraints and possible mechanism of gold mineralization within the carbonaceous metasedimentary units of the Dalma volcano-sedimentary Belt, North Singhbhum Mobile Belt, eastern India: implications from pyrite geochemistry and carbon isotope studies. Accepted in Geological Journal.V.55, Issue.7, pp-5233-5250 Doi:10.1002/gj.3736; ***(SCI Impact factor: 1.949).***

xv. **Singh, S.,** Jha, V., Chandan, K. K., (2019) Geochemistry of Palaeo to Mesoproterozoic Metasedimenaty Units of Chandil Formation, North Singhbhum Crustal Province: Implications for Provenance and Source Area Weathering (Discussion). Jour. Geol. Soc. India, Vol.94,No.2. pp.219-220. **doi:** *10.1007/s12594-019-1293-7* ***(SCI Impact factor:0.63).***

xvi. Pant, S., Singh, S., Sahoo, P.R., Kumar A, Saravanan, B., Venkatesh,A.S.,Yadav,G.,Kumar,P.,2019 Chemistry and Geothermometry of Chlorites in Relation to Physico- Chemical Conditions of Uranium Mineralization in Central Part of Singhbhum Shear Zone, Eastern India. V, 112, 102997 https://doi.org/10.1016/j.oregeorev.2019.102997. Ore Geology Reviews, Elsevier Publication. ***(SCI Impact factor: 3.387).***

xvii. Majumder, S; **Singh, S**; Sahoo, P.R; Venkatesh, A.S; (2019). Trace element systematics of pyrite and its implications for refractory gold mineralization within the carbonaceous metasedimentary units of Paleoproterozoic South Purulia Shear Zone, eastern India: Evidences from FTIR, LA-ICP-MS and EPMA studies. Springer Publication. ***J. Earth Syst. Sci. (2019) 128:233 https://doi.org/10.1007/s12040-019-1256-9 (SCI Impact factor: 1.104).***

xviii. Khatun, M; **Singh, S**; Chakravarti, R; (2019). Palaeo-weathering characteristics and nature of source lithology of carbonaceous metasedimentary units in the Dalma volcano-sedimentary basin, North Singhbhum Mobile Belt, eastern India. Vol.94, pp.53-61. **doi 10.1007/s12594-019-1226-x*.(SCI Impact factor:0.69.).***

xix. R.K.Singh, V.P Maurya, Srivastava, S; **S. Singh**; (2019). Imaging Regional Geology and Au - Sulphide mineralization over Dhanjori greenstone belt: Implications from 3-D Inversion of Audio Magnetotelluric data and Petrophysical Characterization. *Ore Geology Reviews (2019)*, doi:https://doi.org/10.1016/j.oregeorev.2019.01.027.***(SCI Impact factor:3.98).***

xx. Behera, G.S., Sarkar, B.C., Kumar, R., **Singh, S**.,(2019).Mineral Inventory and Grade-Tonnage Modelling of a Ferruginous Bauxite Deposit using Geostatistics – A Test Case in Eastern India. Vol.94, pp.62-68. **doi 10.1007/s12594-019-1267-9*.(SCI Impact factor:0.68).***

xxi. Chakravarti, R., **Singh, S.,** Venkatesh A. S., Patel K, 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 113(2): 579-596**.** (**doi: 10.5382/econgeo.2018.4563**) ***(SCI Impact factor:3.03)***

xxii. Khatun, M., **Singh, S.,** (2018). Genesis of the Sulfide Hosted Refractory Gold Occurrences within the Carbonaceous Metasedimentary Units of the Dalma Volcano-sedimentary Basin, North Singhbhum Mobile Belt, Eastern India. Jour. Geol. Soc. India, Vol.92, July 2018, pp.11-18. ***(doi: 10.1007/s12594-018-0947-1) (SCI Impact factor: 0.63).***

xxiii. **Singh, S.,** Jha, V., Chandan, K. K., (2018) Geochemistry of Palaeo to Mesoproterozoic Metasedimenaty Units of Chandil Formation, North Singhbhum Crustal Province: Implications for Provenance and Source Area Weathering. Jour. Geol. Soc. India, Vol.92, pp.166-172. **doi: 10.1007/s12594-018-0976-9*(SCI Impact factor:0.63).***

xxiv. Sahu, S. S., **Singh, S.,** Sathapathy, J.S., (2018). Lithological and Structural Controls on the Genesis of Emerald Occurrences and their Exploration Implications in and around Gurabanda Area, Singhbhum Crustal Province, Eastern India. Jour. Geol. Soc. India, Vol.92, pp.291-297. **doi 10.1007/s12594-018-1008-5** ***(SCI Impact factor:0.63).***

xxv. Prasad, J; Venkatesh, A.S; Sahoo, P.R; **Singh, S**; Nguo, K.S; (2017). Geological Controls on High-Grade Iron Ores from Kiriburu- Meghahatuburu Iron Ore Deposit, Singhbhum -Orissa Craton, Eastern India. Minerals, v.7; 197**.** ***(doi.org/10.3390/min7100197) (SCI Impact factor: 1.4).***

xxvi. Yadav, B.D., Gupta, S.K., **Singh, S;** (2016) Study of Suction Vs Water Content of Soil of Turamdih Area Mixed with Bentonite and its implication on the Liner Property of Tailing Dam: A Case Study from East Singhbhum Jharkhand, Eastern India. Water Resource management, Springer Nature.. **doi 10.1007/978-981-10-5711-3_14.** ***(SCI Impact factor: 2.64).***

xxvii. Jha, V., **Singh., S.,** Venkatesh, A.S., (2015). Invisible gold occurrence within the quartz reef pyrite of Babaikundi area, North Singhbhum fold-and-thrust belt, Eastern Indian Shield: Evidence from petrographic, SEM and EPMA studies. Ore Geology Reviews, v. 65, p. 426–432. ***dx.doi.org/10.1016/j.oregeorev.2014.100030169-1368 (SCI Impact factor: 3.99).***

xxviii. Sahu, S.S; **Singh, S;** Sathapathy,J.S.(2014). Genesis of Emerald occurrences and their exploration implications within Singhbhum Shear Zones, Eastern Indian Craton. Acta Geologica Sinica. v.88, p. 1481-1482. **DOI 10.1007/s12594-018-1008-5 (SCI Impact factor: 2.506).**

xxix. **Singh, S.,** Venkatesh, A.S; (2009). Geochemistry of host rocks and its implication on the genesis of orogenic gold mineralization within Sonakhan schist belt, Central India. Geochimica et Cosmochimica Acta v.73,Issue 13,supplement,June 2009, Page A1139-A1301. **doi.org/10.1016/jca.2009.05.015** ***(SCI Impact factor:4.69).***

xxx. Rajpurohit, S. S., Sinha R. K., Sen P., **Singh S.**, (2018) "Influence of Physico-mechanical Properties of Indian Dimension Stones on Cutting Rate of Diamond Wiresaw" Accepted for publication in Arabian Journal of Geosciences. (**doi: 10.1007/s12517-018-3913-8**) **(SCI Impact factor:0.86)**

8. Research Articles in SCOPUS indexed Journals

i. Yadav, B.D; Gupta, S.K., **Singh, S;** (2016). Interface Shear Strength of Compacted Clay Liner with Parent Foundation Soil of Turamdih Dam Site and Some Geo Textile Materials in

Composite Liner System. Accepted for publication in Journal of Mines, Metal & Fuel (JMMF).

ii. Chandan,K.K., Jha,V.,Roy,S., Khatun,M., Sahoo, P.R. **Singh, S.**(2014). Ore Microscopic Study of the Gold Mineralization within Chandil Formation, North Singhbhum Mobile Belt, Eastern India. International journal of Earth Science and Engineering. v. 6 (6), p. 213-222.

9. Research Articles in Peer-reviewed Journals

i. **Singh, S;** Prasad, A.K; (2018). Delineation of Gold Prospective Zones within the North Singhbhum Mobile belt, Eastern India. A Regional Scale Analytical Approach through the Integrated Applications of Geospatial Technologies. Applications of Geospatial Applications & Technologies: India case Studies. Editors: **Sarda**, N.L., **Acharya**, P.S., **Sen**, S. (Eds.), ***Springer Publications***.393p. **doi: 10.1007/978-981-13-2330-0.**

ii. **Singh; S;** (2018). Exploration prospects of Refractory Gold within the carbonaceous metasedimentary Units of North Singhbhum Mobile belt. Mining Engineering journal. v. 19 (6). p.18-21.

iii. Sil, S., Kumar M.,and Singh, S., (2018) Solution of constantly inclined rotating two phase magnetohydrodynamic flows through porous media. International Journal of Mathematical Archive-9(3), 2018, 225-231.

iv. Khatun, M; **Singh, S**; (2017). Petrographic and Ore Microscopic Study of Carbonaceous Host Rocks and Associated Gold Mineralisation within Dalma Volcano-Sedimentary Basin,North Singhbhum Mobile Belt, Eastern Indian Craton. Journal of Geosciences Research, Special Volume.v.1. p. 35-41.

v. Majumder, S; **Singh, S**; (2017). Petrographic Characterization of Host Rocks and Ore Mineralization from Palaeo to Mesoproterozoic South Purulia Shear Zone, Eastern Indian Craton. Journal of Geosciences Research, Special Volume.v.1. p. 43-510.

vi. Chakravarti, R; **Singh, S**; (2017). Gold Mineralisation within Quartz Pebble Conglomerates of Gorumahisani- Badampahar Schist belt, Singhbhum Craton, Eastern India. Journal of Geosciences Research, Special Volume.v.1. p. 27-34.

vii. Sahoo, P.R; Prasad, J; Prakasam, M; **Singh, S**; Venkatesh A.S; (2009). Orogenic Gold mineralization in and around Kundarkocha, East Singhbhum, Jharkhand. Indian Academy of geosciences.v. 52 (1), p. 11-18.

viii. Sinha, H.N.,Gosh,T.K.,Kumari,K.,**Singh,S.,2008**:Trace and Rare Earth Elements study of Meso-Neoproterozoic shales of Semri Group of Son Valley, Sonbhadra District, Uttar Pradesh. Gondwana Geology magazine,v .23(1).p.13-19.

ix. **Singh, S.,**Sahoo, P., Venkatesh, A.S**;** (2006). Geochemistry of Host rocks associated with Gold mineralization within Sonakhan Group, Central India. V.21(2),381-400.

x. Chandan K. K., Jha Vandana, Sairaj K., **Singh S**, Venkatesh A.S.,2013: Greenfield Exploration Prospects of Orogenic Gold Mineralization in and around LAWA Area, North Singhbhum Mobile belt, Eastern Indian Craton. International Journal of Applied and Natural Sciences (IJANS).V.2,Issue.4, p2319-4022.

10. Research articles under review in SCI indexed journal

i. Chakravarti, R., Singh,S.,venkatesh,A.S.,2020 Evidence of primordial life forms in 3.25 Ga auriferous pyrite-bearing quartz pebble conglomerates in the Singhbhum Craton, eastern India.

ii. Anand,A., Dutt,K.,Singh,S.,Mayachar,G.K.,(2020) Geology, fluid inclusion and sulfur isotope systematics of quartz-chlorite schist hosted Au-Cu mineralization of Jagpura prospect, Bhukia-Dagocha gold belt, Rajasthan, India: Implications for ore genesis and mineral exploration.

Book Chapters

i. Singh,S., (2022) Gold Phytomining in India: An Approach to Circular Economy in the 21st Century. **Environmental Management in India: Waste to Wealth (pp.249-257).** DOI:10.1007/978-3-030-93897-0_12

11. Conference Proceedings (Full Paper)

i. Bhagde, N.V.,Murthy, V.M.S.R., Srivastava, S.,Pal.S.,**Singh,S**.2018.Assesment and control of backbreak using near-field vibration signatures in dragline bench blasting.12th international symposium on rock fragmentation by blasting,Lulea Sweden, 11-13 June 2018.p.125-137.

ii. **Singh S**., Jha, V. and Khatun, M., 2014. Exploration Prospects of Hydrothermal Gold Mineralization, South of Tamar Porapahar Shear Zone, North Singhbhum Crustal Province. Evidences from Petrographic, SEM and EPMA studies. Expo Cum Symposium on Mining-Minefest India'2014, National Symposium Socio-Mechanics of Mining- Present & Future. p. 41-48.

iii. **Singh S**., Chandan K. K. and Jha, V., 2014. Exploration prospects of Gold Mineralization in North Singhbhum Fold Belt, Eastern Indian Craton. Expo Cum Symposium on Mining-Minefest India'2014, National Symposium Socio-Mechanics of Mining- Present & Future. p. 10-15.

iv. Maly, A., **Singh,S**., Indrajeet, 2010: Application of Integrated Satellite technology with smart card to develop a mine information system. Seminar on present challenges in mining and Allied Industries, MEAI, Bhubaneswar, p.29-32.

v. **Singh,S**., Venkatesh,A. S., Tirkey,V.,2010: Environmental hazards due to Coal Mine Fire: A Geological perspective of Coal mine fire in Kuju area, Ramgarh district, Jharkhand.

vi. **Singh, S**. and Venkatesh, A. S. 2006: Metallogenetic modelling of Gold mineralization in Sonakhan Greenstone belt, Central India. Abs. accepted in the conf. Frontier Areas in

Geological and Technological aspects of Fossil Fuel and Mineral, Indian School of Mines, Dhanbad in Nov 2-4, 2006.

vii. Sinha, J.,**Singh, S.,** Sinha, P., 2002: Geo-informatics based disaster management system. National seminar on natural hazards, 2002. St.Xavier's college Ranchi.

viii. Sinha, J.,**Singh,S.,** 2002: Evaluation of parameter controlling earthquake management system: An analytical Approach using 3S' technology, MAP ASIA 2002, BANGKOK.

ix. **Singh, S**., Sinha, J., 2001: Application of GPS in geological mapping; a preliminary thought. ASIAN GPS CONFERENCE 2001, New Delhi.

x. **Singh,S**.,Sinha,J., 2002: Geotechnical study of an engineering project: A geomatic approach, MAP INDIA 2002, New Delhi.

12. Conference Abstracts

i. Singh,S.,(2019). Nanogeosciences in gold exploration: Challenges and opportunities. National seminar on Gold Mining in India: The way forward.Organized by geological society of India and Dr. Thimmaiah Instititute of Technology, Oorgaum,Kolkar Gold Field during 15-16th February 2019.Abstract Volume,p.148-149

ii. Chakravarti, R., **Singh, S**., Venkatesh A. S., Patel K., (2018). Pyrite hosted refractory gold mineralization within Archean quartz pebble conglomerates of Singhbhum craton: Implications from petrography, SEM, EPMA and LA-ICP-MS studies. National Seminar on Dynamics of Surface and Subsurface Geological Processes, Pondicherry University, Pondicherry. Abstract Volume, p. 90.

iii. **Singh, S;** (2014). Metallotectonic evolution of North Singhbhum Mobile belt and its implication on the Province scale orogenic Gold. Penrose Conference30.03.14-04.04.14 Asheville, North Carolina.

iv. **Singh, S**., Biswas, S., Ravi, S., Das, S., Ranjan, S., Mansoor, A.; (2014). Metallogeny in the Precambrian Belt in Singhbhum Craton/Singhbhum Crustal Province with Special reference to Au Mineralization: Brain storming session on IGC 2020:21.03.14-22.03.14: GSI, Eastern Region, Kolkata.

v. **Singh S**., Jha, V., Chandan K. K., Khatum, M., Venkatesh, A.S., (2014) Metallotectonic Evolution of North Singhbhum Mobile Belt and its Regional Scale Exploration Implications on the Gold Metallogeny of Chandil Formation: Evidences from Host Rocks Geochemistry, SEM & EPMA Studies. International seminar on Sedimentary processes and Metallogeny through Time (SPMT)-2014, SDM College Dharwad, Abstract Volume, p. 13.

vi. Jha, V., Chandan, K.K., Lakra, A., and **Singh, S.**, (2014). Tectonic Evolution of North Singhbhum Mobile Belt and its Metallogenetic Implications on the Gold Metallogeny of Chandil Formation, Singhbhum Crustal Province. Nainital MTM conference (2014) from 27th to 29th March, International Association for Gondwana Research Conference Series 18, Abstract Volume, p. 160.

vii. **Singh S**., Chandan K. K., Jha, V; Venkatesh, A.S.;(2013). Metallotectonic Evolution and its Implications on the Exploration Prospects of Orogenic Gold Mineralization within North Singhbhum Mobile Belt, Singhbhum Craton, Eastern India. Proceedings volume Second Symposium on the Geological Resources in the Tethys Realm, 5-8 January, 2013, Aswan, Egypt.

viii. Chandan, K.K., Jha, V., Khatun, M., **Singh, S**., and Venkatesh, A.S., (2013). Geochemistry of Paleao to Mesoproterozoic Metasedimenaty Units, Lawa-Mayasera Area, Chandil Formation, Eastern Indian Craton: Implications for Provenance and Source Area Weathering. Geological Society of America, Abstracts with Programs. Vol. 45, p. 241.

ix. Jha, V., Chandan, K.K., Khatum, M., **Singh, S**., Venkatesh, A.S., (2013), Geology and Geochemistry of Gold bearing Meso-Proterozoic Chandil Formation, North Singhbhum Mobile Belt, Eastern Indian Craton: Evidences form Trace- REE signatures, EPMA and SEM analysis. Future Challenges in Earth Sciences For Energy and Mineral Resources (ESEMR-2013), ISM Dhnabad. Abstract Vol. p. 53.

x. Chandan, K.K., Jha, V., Khatun, M., **Singh, S**., and Venkatesh, A.S., (2013). Geology and Geochemistry of Paleo to Meso Proterozoic Mafic Volcanics from Lawa Mayasera area, Chandil Formation and its Implications on the Tectonic Evolution of Northern Singhbhum Mobile Belt, Eastern Indian Craton. PGCT 2013 from 23rd to 26th November International Association for Gondwana Research Conference Series 16, Abstract Volume, p. 40.

xi. **Singh, S**; Venkatesh, A.S., Chandan,K. K.'(2011)**.** Crustal Evolution of Earth and its Control on Global Scale Orogenic Gold Metallogeny. Proceedings International Conference on Fragile earth, 4-7 Sept 2011, Munich, Germany.

xii. **Singh, S**., Sathpathy, J.S., Venkatesh, A.S., (2011). Implication of Global scale crustal processes on exploration prospects of orogenic Gold mineralization.17th convention of Indian Geological Congress and International Conference NPESMD 2011, Nov 10-12, 2011,p 771-776.

xiii. **Singh, S**., Venkatesh, A.S., Tirkey, V.; (2010). A Geodynamic Model for the Tectonic Evolution of Sonakhan Greenstone Belt, Bastar Craton, Central India". Proceeding volume of the Fourth international conference on "**The Geology of Tethys**" at Cairo University, EGYPT.2008.

xiv. **Singh, S**., 2006: Geodynamic evolution of Sonakhan greenstone belt, Central India and its implications for gold mineralization. "Evaluation of Mineral Resources of India". March 2-4, 2006.

xv. Venkatesh, A. S. **Singh, S.**, Kumar, Navin. and Tirkey V.'(2006)An Autochthonus Model for the Tectonic Evolution of Sonakhan Greenstone Belt, Bastar Craton, Central India published in the

pre-seminar abstract volume on the "Role of Geology in the Development of Central India: A Retrospective and Potential**"** held at Nagpur University in Dec. 27-28 at Nagpur.

xvi. **Singh, S**., Sahoo, P., Asthana, D and Venkatesh, A.S., (2005). Geology and Geochemistry of orogenic gold mineralization in the Sonakhan Greenstone belt, Central India. Research paper presented in National Seminar on Proterozoic system of India: Evolution and Economic potential. November 11-12, 2005. pp. 47.

xvii. **Singh, S** and Kumar, N., (2005). Sonakhan greenstone belt: Gold mineralization, exploration potential and economic realities. Research paper, presented in "National symposium on geochemistry of earth resources and its bearing on their development". Dec. 27-28, 2005. pp. 41.

xviii. **Singh, S**., Venkatesh, A. S.; (2004). Geodynamic significance of Rajahmundry Traps. A.P. India. International Geological Congress, 2004, Italy.

13. Books-One

i. Singh, S. & Venkatesh, A.S., 2012**:** Gold Mineralization within Sonakhan Schist Belt, Central India**:** Exploration Prospects and Metallotectonic Implications; Lap Lambert Academic Publishing, Saarbrucken, Deutschland, 208p.

14. Edited Conference proceedings/Abstract Volumes-2

i. Varma, O.P., Sarkar, B. C.,Varma, A. K., Mukherjee, M. K. ,Singh, S.,2011:,Edi. Volume, Proceedings; 17th Convention of Indian Geological Congress and International Conference on New Paradigms of Exploration and Sustainable Mineral Development: Vision 2050 (NPESMD 2011) held at Indian School of Mines Dhanbad**.**

ii. Asthana,D.,Sarangi,S.,Varma,A.K.,Singh,S.2013:Edi.Abstracts Volume, Annual General Meeting of the Geological Society of India and International Conference on Future Challenges in Earth Sciences for Energy & Mineral Resources(ESEMR 2013),312p.

15. . Details of Ph. D/Post-DOC Supervision:

(a) No. of Ph. Ds Supervised/Awarded as sole/main Guide:

i. Metallogenetic Studies of Gold Mineralization within Lawa- Mayasera Region, North Singhbhum Mobile Belt, Eastern India, 2015.
ii. Metallotectonic Evolution of Gold Mineralization in and Around Babaikundi Area within the North Singhbhum Crustal Province, Eastern India, 2015.
iii. Geological Constraints on the Gold Mineralization within the Carbonaceous Meta-sedimentary Units of Dalma Volcano-sedimentary belt, eastern India, 2020.
iv. Genesis of Gold Mineralization associated with Archean Quartz-Pebble-Conglomerates (QPCs) in and around the Eastern Iron Ore Group, Singhbhum Craton, Eastern India.2020

v. Microstructures and their Implications on the Genesis of Uranium Mineralization in the Central Sector of the Singhbhum Shear Zone, Jharkhand, Eastern India, 2021.
vi. Geological constraints on the genesis of pyrite hosted refractory Au and the associated REE mineralization within the carbonaceous metasedimentary units along the South Purulia Shear Zone, eastern India, 2021.
vii. Geological Constraints on the Gold Mineralization of Pahardiha-Rugnikocha Area, North Singhbhum Mobile Belt, Eastern India.
viii. Metallogeny of the Gold and Basemetal Mineralization of Jagpura Gold Prospect, Banswara district, Rajasthan.

(b) No. of Ph. Ds (Full time) Supervised/awarded as Co-Guide

i. Integrated Geological and Geophysical approach for Mineral Mapping in Tamar-Ichagarh area, North Singhbhum Mobile belt, Jharkhand.

(c) No. of Ph. Ds (Full time) Supervising as main Guide

i. Ore genesis and its characterization in Korivipalle area, Anantapur, Andhra Pradesh and its implications on the processing of refractory gold mineralization.

(d) No. of Ph. Ds (Full time) Supervising as Co-Guide

i. Mineralogical and Geochemical Approach to Understand the Genesis of Manganese Mineralization in and around Waraseoni- Katangi, and Ukwa Mine areas, Balaghat District, Central India.

e. No. of PhDs (Part time) Supervising as main Guide

i. Genesis of Emerald and associated gemstones during Singhbhum orogeny in and around Ghatsila and Mayurbhanj district, Eastern Indian Craton.
ii. Uranium and Molybdenum Metallogeny of Vempalle Formation of the South Western Cuddapah basin, Tummalapalle, , Southern India.
iii. Geological Constraints on the gold Mineralizing System of Parasi-Sindauri area, North Singhbhum Mobile Belt, Eastern Indian Craton.
iv. Trace element systematics of carbonaceous shale hosted Pyrites and its Implications on the ore mineralizing system of North Singhbhum Mobile Belts, Eastern India

(e) No of Post-Doc supervision (One)

i. Dr. Saurodeep Chatterjee
PhD (Dept. of Geological Sciences, Jadavpur University, Kolkata)
Specialization:Solid Earth Geophysics
Present research area: Rock magnetism and magnetic anisotropy of Rajmahal basalt.

16. Details of R & D Projects:

A. Completed: Five (5)

i. Metallogenetic study of Gold mineralization within Lava-Mayasera region, East Singhbhum (Total Amount: Rs. One Lakh: ISM Funded).
ii. Geochemistry of Host Rock associated with orogenic Gold Mineralization within Kunderkocha Area (Total Amount: Rs. 1,77,000.00: UGC Funded).
iii. Geospatial Fusion of Parameters Controlling orogenic Gold Mineralization and Delineation of Gold prospective Zones within Chandil Formation, North Singhbhum Mobile belt, Eastern Indian Craton. A Regional Scale Analytical Approach through the Integrated Applications of GIS, GPS and Remote Sensing Technology (Total Amount: **Rs. 38.5 Lakh sponsored by NRDMS Division**, DST, New Delhi). **Project No: DST (128) / 2015-2016/ 447/AGL.**
iv. Proterozoic gold Mineralizing System in the North Singhbhum Mobile belt (Accepted proposal for development of geological traverse during IGC 2020 at New Delhi) Sponsored by International Geological Congress (New Delhi).(Rs.225,000.00). **Project No: IGC/2018-2019 /610/AGL (Field Trip).**
v. Geological Field Excursion to the Jharia Coal field: A Tribute to Sir Cyril Sidney Fox (*A legacy of 125 years of Indian Mining and Mineral industry*). (Accepted proposal for development of geological traverse during IGC 2020 at New Delhi) Sponsored by International Geological Congress (New Delhi).(Rs.250,000.00). **Project No: IGC/2018-2019 /611/AGL (Field Trip).**
vi. Trace element systematics of Dolostone hosted Sulfide and its Implication on the gold prospects of Vempalle Formation, Cuddapah Supergroup, Andhra Pradesh. MRP (TEQIP III)

(B)(Ongoing: Three (03) –

i. Trace element systematics and sulfur isotope signature of auriferous sulfides within the Vempalle dolostone: Implications for refractory gold mineralization in and around Tummalapalle area of South-western Cuddapah basin,Andhra Pradesh". Sponsored by SERB, Department of Science & Technology, New Delhi. CRG/2021/007183 dated 10.03.2022 (Total outlay is Rs. 73,20,240.00 (Rupees Seventy Three Lakh Twenty Thousand Two Hundred and Forty only). **Institute project No : DST(SERB)(325)/2021-2022/881/AGL**
ii. Geophysical prospecting along northern fringes of Dalma Volcanics around Kantaldih – Pharenga area", Sponsored by DAE (BRNS). Department of Atomic Energy (Board of Research in Nuclear Sciences. Rs. 29,93, 600.00 (Rupees Twenty Nine Lakh Ninety Three Thousand Six Hundred only). **Institute Project No : DAE(BRNS)(7)/2019-2020/669/AGP. (As Co-PI)**
iii. Integrated non-invasive geophysical, archeological and biogeochemical characterization of Itkhouri heritage sites in the Mohane River Valley, sponsored by DST(TDT)(SHRI) [DST {Technology Development & Transfer (Science and Heritage Research Initiative)}]. Rs. 1, 25,92, 682.00 (Rupees One Crore Twenty Five Lakh Ninety Two Thousand Six Hundred Eighty Two only). **Institute Project No: DST(TDT)(SHRI)(327)/2021-2022/888/AGP. (As Co-PI)**

(iii). Training Conducted

iv. Earth Day, 2014: Sponsored by MoES, New Delhi(as a coordinator). **MoES/SSWC/18/2004-PC-V dated 14/11/2013.**

v. Geological mapping of Jharia Coalfield (Approved in December 2015: Sponsored by MoES, New Delhi, ***(MoES/17/AGL/2015-16)***

(iv). Collaborative project

GSI, Ranchi & IIT(ISM) for FSP(18-19) to develop a geological traverse entitled" Proterozoic Gold Mineralizing System in North Singhbhum Mobile belt" (Accepted by IGC, New Delhi) to be conducted in the month of March 2020 as part of post conference field trip program.(Completed)

17. Details of Consultancy Projects:

(i) Completed: Three (3)

i. Chai, C. C. and Singh,S.,2008: Technical Due Diligence & preliminary Assessment of the Coal Mine at Marimun, Borneo Island, East Kalimantan Indonesia**"**
ii. Off campus Executive Development Programme; iGATE , Pune
iii. Artificial Recharge & Rain Water Harvesting-Ministry of Water Resources, New Delhi.
iv. Geological and geological survey in and around the proposed alleged gold treasure sites in UP ***(CONS/2383/2015-16)***
v. Scientific Study for Controlling the Ground Vibrations And Improving The Dragline Productivity In Nigahi And Dudhichua Mines, Singrauli, NCL. Project No.: Cons/3417/16-17; Cost: Rs.20.125 lakh. **Cons/3417/16-17**
vi. Physical/petrological/mineralogical characterization of an unidentified sample.(Rs.23,600.00) **Cons/3863/2018-19**

18. Fellow/member of national and International Academic Society

i. Fellow of Society of Economic Geologist (SEG),USA
ii. Fellow of Geological Society of India(GSI), Bangalore, India
iii. Fellow and life member of the Gondwana Geological Society, Nagpur, India
iv. Fellow and life member of Mining Engineering Association (MEA), Hyderabad
v. Fellow and life member of the The Mining, Geological and Metallurgical Society of India, Kolkata
vi. Member,Geological Society of America, USA
vii. Member International Association for Genesis of Ore Deposits (IAGOD), USA
viii. Member, Society for Geology Applied to Mineral Deposits(SGA), Germany
ix. Member, Society of Resource Geology, Japan
x. Life member, Indian Geological Congress
xi. Life member, Mining Engineering Association of India, Hyderabad
xii. Life member, Indian Society of Applied Geochemists (ISAG)

xiii. CSIR-UGC Junior Research Fellowship and GATE qualified, 1996

19. Member of International/national Committee

i. Expert member of Executive Committee (EC), National Mineral Exploration Trust (NMET), Ministry of Mines, New Delhi, Government of India.(2022… onward)
ii. Member of the Thayer Lindsley lecture committee,Society of Economic Geologist, USA.(2018-20).
iii. Expert member of the Eastern Regional Advisory Committee (ERAC) of Atomic Mineral Division (AMD), Eastern Region, Jamshedpur.(2015-18).
iv. Editorial board member, Mining Engineering Journal, Published by Mining Engineering association of India (2017-19).
v. Editorial board member, Journal of Geoscience Research (JGR), Published by Gondwana Geological society, Nagpur.
vi. Executive committee member, Dhanbad chapter, MEAI, Hyderabad.
vii. Member, Board of Courses of Study, Vinoba Bhave University, Hazaribag(April 2018 onwards….)

20. Member of Reviewer committee for

i. Journal of Geological Society of India (Springer Publication),
ii. Journal of Earth System Science (Springer Publication)
iii. Current Science(Indian Academy of Sciences & Current Science Association)
iv. Arabian Journal of Geosciences(Springer Publications)
v. Journal of Geoscience Research(Gondwana Geological Society)
vi. Mining Engineering journal, Mining Engineering Assocation of India(MEAI)

19. International Assignment

i. Presented research paper at Penrose conference organized by Geological Society of America (GSA) at North Carolina, USA, 2014.
ii. Presented and participated in International conference at Aswan university, Egypt (2013).
iii. Awarded Geohost travel grant by Geological Society of America (GSA) to present a paper in an international conference held at Munich, Germany (2012).
iv. Visited Cairo University Egypt to participate and chair a technical session in the Fourth International conference on "The geology of Tethys" from 17^{th}- 24^{th} Nov at CAIRO, EGYPT under Cultural Exchange Program (CEP), sponsored by University Grant Commission New Delhi and Ministry of higher education, Government of Egypt (2008).
v. Visited Borneo Island, East Kalimantan Indonesia to prepare a field report on "Technical Due Diligence & Preliminary Assessment of the Coal Mine at Marimun" for Subhas Marketing and Project Limited (SPML), Kolkata (2008)..

20. Administrative responsibilities undertaken at Institute and Departmental level

1. Institute level

i. Associate Dean, (Faculty-Administration & Carrier progression), 2022 -2023
ii. Associate Dean, (Faculty-Selection & Carrier progression), 2020-2022
iii. Vice chairman, IIT,JEE (Advance) Cell (2019-2020)
iv. Liaison officer, OBC Cell, IIT(ISM), Dhanbad (April 2023 onwards)
v. Co-Convener, III (Industry Institute Interaction) 2023
vi. Faculty In-Charge (FIC)-Swimming Club-2023
vii. Member, Monitoring and Review Cell, IIT(ISM), Dhanbad, 2018-2020
viii. Member: Gender Sensitization Committee(2012-14)
ix. Member: Internal Complain Committee (ICC) (2016 onwards…)
x. Member (user representative),Swimming Pool committee, IIT(ISM), Dhanbad
xi. Warden: OPAL Hostel: April 2012 to April 2014
xii. Member, Task Force (To monitor Mess operation of all ISM hostel):April 2014-2018
xiii. Institute Representative(IR) for JEE Advanced Examination 2017, 2018
xiv. Member: M.Sc / M.Sc. Tech Entrance Examination 2013-15
xv. Member: M.Sc / M.Sc. Tech Entrance Examination 2016
xvi. Coordinator, M. Tech (MEX), 2016-2019
xvii. Chairman, Moderation board, M.Tech (MEX), 2016(continued…)
xviii. Cultural Secretary: SCOLOMIN Club: 2011,2012
xix. Member: ISM Foundation day Committee-2012, 2013
xx. Member: Cultural Committee: IMC-2011,2012, 2013,2014,2015
xxi. Member: Registration: Basant Committee-2012, 2013,2014,2015
xxii. Organizing Committee Member: Annual Sport Fest:2010, 2011, 2012, 2013
xxiii. Faculty Co-Coordinator:Concetto-2014
xxiv. Treasurer: ESEMR, 2013
xxv. Faculty Coordinator: Earth Day 2014(sponsored by Ministry of Earth Science)

2. Departmental Level

i. Member, Departmental Faculty Scrutiny Committee(DFSC)
ii. Departmental Post Graduation Committee (DPGC)(2018 onward…)
iii. Member: DRC Committee, Dept. of Applied Geology(2013-16)
iv. Member: Stock Verification Committee, Dept. of Applied geology(2010-2014
v. Co-In charge: Ore geology/Fluid inclusion Lab, AGL
vi. Co-In charge: Geostatistics Lab, AGL
vii. Faculty Co-In charge: Training: Dept. of Applied Geology
viii. Faculty Co-In charge: ISM Geological Society:2010-12
ix. Faculty Incharge: ISM Geological Society:2012-2015
x. Organizing Committee member: IGC &NPESMD-2011
xi. Organizing Committee member: SDGRIR-2012
xii. Organizing Committee member: CSECS-2010
xiii. Organizing Committee member: DST meeting of PAC on earth Science
xiv. M.Sc. Tech AGL Exam Tabulator: 2010, 2011, 2012, 2013
xv. Member, BOCS, Applied Geology
xvi. Economic Geology field Training: Faculty Co-Incharge:2010-2012
xvii. Economic Geology field Training: Faculty Co-Incharge:2012-2015
xviii. Faculty Co-In charge/AGL: Industrial Training

xix. Faculty Advisor: Integrated M. Sc. Tech, Applied Geology:2012-2015

Sahendra Singh
Assistant Professor, Dept. of Applied Geology