Name and Designation	**DR. MRINAL KANTI MUKHERJEE** Full Professor (Structural geology, Engineering Geology and Exploration) Department of Applied Geology Indian Institute of Technology (Indian School of Mines), Dhanbad – 826004 India Phone – (0326)-2235472 (O) 09431711148 (Mobile) Fax – (0326) 2203645 E-mail: mrinal@iitism.ac.in mrinal_km67@yahoo.co.in	
Date of Birth	28th April 1967	
Qualification:	M. Sc. Tech (Applied Geology) Indian School of Mines, Dhanbad-826004 PhD (Indian Statistical Institute-Calcutta, University of Calcutta)	
Specialization:	Structural Geology, Geometric and Kinematic analysis of Brittle and Ductile deformation structures of rocks at all scales, Sedimentation and Tectonics	
Research Interest	♦ Rock deformation:Geometric, kinematic and dynamic analysis of deformation, Tectonic modelling ♦ Basin evolution through integrated study of sedimentation, tectonics, deformation and thermal events. ♦ Application of Structural Geology in Mineral exploration, Petroleum Exploration and Engineering Geology problems. ♦ Applied Hydrogeology, Water influx in underground and opencast mines, rainwater harvesting and artificial recharge.	
Research Guidance	Ph.D (Completed): **04 (Principal/Sole Guide), 02 (as Joint-guide)** PhD (Ongoing) **: 08 (sole), 01 (Joint-guide)** Dissertations: (M.Sc Tech +Int. M. Sc Tech) :**74**; M.Tech : **16**	
Honors	Ranked **First** in All-India Entrance Examination for admission to M.Sc (Tech) programme in Applied Geology, in Indian School of Mines, Dhanbad in the year 1990. Ranked **First** in All-India Entrance Examination for admission to Ph.D programme in Geology in Indian Statistical Institute, in the year 1993. Awarded the prestigious National Scholarship in 1990 by Govt. of India for study in the post graduate course.	

ORCID ID: 0000-0003-0372-2642

Scopus AU-ID: 57196676322

Date of Joining IIT(ISM) Dhanbad: 16th May 2007

Ph.D Thesis

1. **Mukherjee, M.K. (2000):** Structures, kinematic framework of deformation and shallow crustal deformation mechanisms in the southern Nallamalai fold-fault belt, Cuddapah dt., Andhra Pradesh, South India; *Unpublished Ph.D thesis, Indian Statistical Institute, (University of Calcutta).*

List of Research Papers Published in SCI journals

1. **Mukherjee, M.K.* (2001):** Structural Pattern and Kinematic framework of deformation in the southern Nallamalai fold-fault belt, Cuddapah district, Andhra Pradesh, Southern India; *Journal of Asian Earth Sciences, Elsevier* 19, 1-15. [Q2]

2. Chaudhuri, A.K.,Saha D., Deb, G., Deb, S.P., **Mukherjee, M.K.,** and Ghosh,G. **(2002):** The Purana basins of Southern Cratonic Province of India — A case for Mesproterozoic Fossil Rifts; *Gondwana Research, Elsevier* 5, 23-33. [Q4]

3. **Mukherjee, M.K.* (2003) :** Very low-grade Metamorphism vis-a-vis Penetrative deformaton in the southern Nallamalai Fold-Fault Belt, Cuddapaph Basin, Andhra Pradesh; *Journal of the Geological Society of India,* 62, 535-548. [Q4]

4. **Mukherjee, M.K.*,** Das, S. & Modak, K., **(2016):** Basement-Cover structural relationships in the Kaladgi Basin, southwestern India: Indications towards a Mesoproterozoic gravity gliding of the cover along a detached unconformity. *Precambian Research (Elsevier)* 281: 495-520. [Q1]

5. **Mukherjee, M.K.* and** Modak, K **(2019)**: Timing of cleavage development in relation to folding and its implications: an example from the deformed Mesoproterozoic sedimentary cover of Kaladgi basin, southwestern India. *Journal of Geological Society of India,* 93, 379-391. [Q4]

6. **Mukherjee, M.K.*,** Modak, K and Ghosh, J. **(2019)**. Illite Crystallinity (IC) index from the Mesoproterozoic sedimentary cover of the Kaladgi basin; southwestern India: implications on crustal depths of subsidence and deformation, *Journal of Earth System Science* 128:101. https://doi.org/10.1007/s12040-019-1124-7 [Q3]

7. Gupta, A.K. and **Mukherjee M.K.* (2022).** Evaluating Road-Cut Slope Stability Using Newly Proposed Stability Charts and Rock Microstructure: An Example from Dharasu-Uttarkashi Roadway, Lesser Himalayas, India. *Rock Mechanics ad Rock Engineering*, 55, 3959-3995. https://doi.org/10.1007/s00603-022-02846-3 [Q1]

8. Padhi, A.K.; **Mukherjee, M.K**.*; Tripathi, B.K.; Pande, D.; Bisht, B.S.; Sarkar, B.C. **(2023)**. Polymetallic Uranium Mineralisation in Rohil, Rajasthan, Western India: Insights from Mode of Occurrences, Structural Controls, Alteration Geochemistry and Exploration. *Minerals*, *13*, 555. https://doi.org/10.3390/min13040555 [Q2]

9. Mishra P.K, Mohanty S.P, Mohanty, D, and **Mukherjee M.K.(2023)** Phosphorous concentration in iron-rich rocks of the Chilpi Group, Bastar Craton, India: implications on late Palaeoproterozoic seawater palaeoproductivity. *Geological Magazine*, 160, 1687-1700. [Q3]

10. Bhaumik, A.K., Kumar, S., Chaudhury, S., Mohanty, S., **Mukherjee, M. K**., Sain, K., Gupta, A. K., and Kumar, P. **(2024).** Accumulation of gas hydrates in mass transport deposits at Krishna-Godavari Basin, Bay of Bengal: Foraminiferal, sedimentologic, and seismic evidence. *AAPG Bulletin,* 108, 1687-1703. DOI:10.1306/03222423052 [Q2]

11. Dora, M. L., Upadhyay, D., Baswani, S. R., Meshram, T., **Mukherjee, M. K.,** Mahapatro, S.N., and Randive, K. **(2025).** Age and genesis of hydrothermal Ni-PGE-Te mineralisation in the Gondpipri mafic ultramafic complex, central India: constraints from zircon U–Pb geochronology and magnetite-pyrite geochemistry. *Mineralium Deposita*, 60, 429-452. [Q1] https://doi.org/10.1007/s00126-024-01338-4

12. Padhi, A.K**.; Mukherjee, M.K.*;** Bisht, B.S.; Tripathi, B.K.; Pande, D.; Baskaran, S. **(2025)** Mineral Chemistry of Chlorites and Feldspars and Their Genetic Linkage to Uranium Mineralization: An Example from Polymetallic Uranium Deposit in Rohil, Rajasthan,Western India. *Minerals*, 15, 41. https://doi.org/10.3390/min15010041 [Q2]

13. Karmakar, S. **Mukherjee, M.K**.* Dora, M. L., Mohanty, B. **(2025).** Differential core-to-periphery emplacement of mafic magma in an Archean Complex and its implications: An example from Southern Granulite Terrain, India. *Precambrian Research*, 418, 107673. [Q2] https://doi.org/10.1016/j.precamres.2024.107673

14. Padhi, A. K., Mukherjee, M. K.*, Bisht, B. S., Saravanan, B. **(2026).** Growth rims in uraninite: Evidence of episodic changes in hydrothermal fluid composition in Rohil uranium deposit, Rajasthan, India. *American Mineralogist*, [Q2] https://doi.org/10.2138/am-2024-9669

15. Zooelnon, A.A., Ghosh, S**, Mukherjee, M. K**., Rajput, A. **(2025)**. The influence of mineralogy and geomechanical properties on the development of natural fractures in coal bearing Strata and its implications: An example from Barakar Formation, Eastern India. *International Journal of Earth Sciences* [Q3] https://doi.org/10.1007/s00531-025-02541-y

16. Gangula H., Alvarez, I.G., Manikyamba, C., D'Anderes, J., Yadav, J.K., **Mukherjee, M. K. (2025)**: Critical Mineral Potential of Indian Phosphorites: Evidence of REE enrichment in Ediacaran Sediments from the Cuddapah Basin. *Journal of Geochemical Exploration* [Q1] https://doi.org/10.1016/j.gexplo.2025.107918

17. Dora, M. L., Kumaravel, V., Khuntia, D.B.K., Lenka, S., Manu Prasanth, M.P., Malviya, V. P., **Mukherjee, M. K.,** Meshram, T., Baswani, S. R., Raghuram, J., Randive, K. **(2026)**: Rare preservation of epithermal Cu–Au–Pb–Zn mineralization associated with mesoproterozoic arc magmatism in the Bastar Craton, Central India. *Lithos*, 524-525, 108415. https://doi.org/10.1016/j.lithos.2026.108415 [Q2]

18. Zooelnon, A. A., Ghosh, S., **Mukherjee, M. K.* (2026)**. Control of lineaments on the distribution of hazardous coal fire zones in Jharia coalfield, Eastern India. *Natural Hazards,* 122:326**,** https://doi.org/10.1007/s11069-026-08088-8 [Q2]

Book Chapters

1. **Mukherjee, M. K.** and Gupta A. K**. (2024)**. Integrating rock mass classification, rock microstructure and neotectonic activity index for predicting road-cut slope failures: An example from Dharasu-Uttarkashi Road section, Northern India. *In* Tomas, R., Cano, M. Riquelme, A., Pastpr, J. L., Benavente, D., and Ordonez, S. (Eds). *New Challenges in Rock Mechanics and Rock Engineering,* CRC Press (Taylor & Francis), 1205-1210.

2. **Mukherjee, M. K. (2023).** Prediction of water inflow in a proposed underground coal mine of the Rajgamar dipside (South of Phulakdih Nala), in Chattisgarh, India. *In* Sinha, A., Sarkar, B. C. and Mandal, P.K. (Eds). Proceedings of the 10th Asian Mining Congress 2023: Roadmap for best mining practices vis-à-vis global transformation. *Springer*, 16-31.

3. Gupta A. K. and **Mukherjee M. K. (2014):** Rock Mass strength: How does it contribute to the stability of rock slopes? *In*, *Proceedings of the National Seminar on Innovative Practices in Rock Mechanics (IPRM-2014), Bengaluru; 81-93.*

4. **Mukherjee, M. K.,** Sahu, A.K. and Mahanta, S. K **(2011)**: Deformation structures of the Banded Iron Formation around Kiriburu and Meghahatuburu deposit, Jharkhand, India, *in New Paradigms of Exploration and Sustainable Mineral Development*: *Vision 2050*, ISM Dhanbad, 723-732.

List of other research papers

1. Khan, A.S., **Mukherjee, M.K.,** and Sarkar, R.L. **(2003):** A Re-interpretation of Geology of Ramakona-Sausar-Mogra area, of Sausar fold belt, M.P.; *Gondwana Geological Magazine Special Publication,* 7, 119-128.

2. **Mukherjee, M.K.** and Roy, A. **(2004):** Some serious difficulties faced by plate tectonic model of geodynamics and problems within the Indian plate. *Geological Survey of India Special Publication,* 84, 351-363.

3. Khan, A.S. and **Mukherjee, M.K. (2004):** Specialized Thematic mapping in Sausar Fold Belt in parts of Maharashtra and Madhya Pradesh, *Records, Geological Survey of India,* 137, 48-50.

4. Devarajan, M.K. **Mukherjee, M.K.** Thorat, P.K., Shrivastava, R.K. and Chourasia, A.H. **(2006)**: Report on the Geological Investigations around Jaitapur, in parts of Ratnagiri and Sindhudurg districts, Maharashtra. (Phase-II, Part-I) *Unpublished GSI Reports. GSI, Central Region, Nagpur-440006.*

5. **Mukherjee, M.K.** and Jeere, D.S. **(2006):** Thematic mapping of Gneiss–Granulite Terrain, Western Bastar Craton, Chandrapur district, Maharashtra. *Records, Geological Survey of India,* 139, 28-30.
6. **Mukherjee, M. K. and Singh A. K. (2009):** Thematic mapping of Gneiss Granulite Terrain, Western Bastar Craton, Chandrapur district, Maharashtra, FSP-2006-07, *Records, Geological Survey of India, vol 142.*

7. **Mukherjee, M. K. (2010):** The importance of Clay Minerals in Evaluating Thermal Maturity of Sedimentary basins and Petroleum Potential, *in Geological and Technological facets of CBM, Shale gas Energy Resources and CO2 Sequestration,* 126-134.

8. Sinha, D., Das, S., **Mukherjee, M. K.**, Bandhopadhyay, A., Sadhu, P.K. and Pal, N **(2010)**: Speed Control of Drill Motor for Different Types of Rock Mass according to their Drillability, *Drills and Drilling- an Update, ISM Dhanbad,* pp 103-108.

9. **Mukherjee, M. K** and Modak, K., **(2017):** Structural Geometry and Deformation Patterns in Mesoproterozoic cover sediments of Kaladgi Basin: Implications for Exploration of Uranium and Hydrocarbons. *Journal of Geoscience Research*, Special vol. 1, 217-22

10. **Mukherjee, M. K., Tripathy, S. K. Jeere, D. S. and Singh A. K. 2010:** Final report on thematic mapping of Gneiss-Granulite terrain, Western Bastar Craton, Chandrapur district, Maharashtra (FS 2004-2007). Unpublished Report, Geological Survey of India, Central Region, Nagpur 440006.

Papers in National Conference/ Symposium

1. **Mukherjee M. K. (2000)**. Interaction Of Low-Grade Metamorphism And Penetrative Deformation – A Case Study From The Southern Nallamalai Fold Belt of Cuddapah Basin, South India; Abstracts of *National Symposium on Milestones in Petrology at the end of the millennium and Future Perspectives November 14-16, at Banaras Hindu University, Varanasi.*

2. **Mukherjee M. K. (2003)** :On Mechanisms of Faulting and Seismogenesis; *Proceedings of National Workshop on Seismic microzonation and risk hazard management organised by GSI Training Institute, Hyderabad at Nagpur.*

3. **Mukherjee, M. K. (2011):** Syn- and Post depositonal deformation structures from the Proterozoic cover in the North eastern Sectors of the Godavari Graben: Implications on the behaviour of the basin margin Fault during basin growth and closure *Abstracts of Field workshop on Godavari Basin: Proterozoic and Phanerozoic Evolutionary trends and Coal Exploration & Exploitation; Kothagudem, AP*, p24

4. Das S., and **Mukherjee, M. K.**, **(2011)**: Deformation Pattern of the Mesoproterozoic Kaladgi group in east-central parts of Kaladgi basin, Bagalkot district, Karnataka; *Abstracts of the National Seminar on Geodynamics and Metallogenesis of the Indian Lithosphere, BHU, Varanasi*. pp 98.

5. **Mukherjee, M. K. (2011a):** The Shale Gouge Ratio – an important parameter for characterization of fault seals in Hydrocarbon Reservoirs; *Proceedings of International Seminar on Recent Advances in Geosciences, ISM Dhanbad 135-137.*

6. Apat A. **and Mukherjee M. K.** (2012): Characterizations of igneous plutons and their components within Chotonagpur Gneissic complex around Baliapur-Sabaigarha, Dhanbad district, Jharkhand *in Proceedings of National Workshop on Recent Advances in Geosciences in Bihar and Jharkhand*, p 16.

7. **Mukherjee M. K**., Karmakar S and Mohanty B (2013): Geometry and Classification of shear zone related foldsfrom Moyar Bhavani Shear zone around Pulliyamkombai and Vanipudur, Erode district, Tamil Nadu. Abstracts, *National Workshop on Recent Scientific advances in the southern Granulite Terrain, 20.*

8. Gupta A. K. and **Mukherjee M. K. (2014):** Rock Mass strength: How does it contribute to the stability of rock slopes? in *Proceedings of the National Seminar on Innovative Practices in Rock Mechanics (IPRM-2014), Bengaluru; 81-93.*

9. **Mukherjee, M. K. (2016).** The importance of composition, chemistry, and properties of clays in landslide studies. Abstracts, *National seminar on the improvement of road construction techniques in the Himalayan region, April 4 2016, Graphic Era Hill University, Dehradun*

Papers in International Conference/ Symposium

1. **Mukherjee, M. K.**, Jeere, D. S. Tripathy, S. K. and Singh, A. K. **(2008)** : Basin-margin fault history and evidence for associated seismicity along the north eastern margin of the Godavari rift, Chandrapur district, Maharashtra, South Central India. *Proceedings International Conference on Geology—Indian Scenario and Global Context Indian Statistical Institute, Kolkata. 53.*

2. **Mukherjee, M. K. (2008) :** Paleoseismic signatures in basin- margin fault history: implications on pre-, and syn- Gondwana basin evolution along the north-eastern margin of the Godavari rift, Chandrapur district, Maharashtra, South Central India. *Proc. International Gondwana 13th Conference, Dali, China, 153*

3. Mukherjee, M. K. (2011): Cleavage development in the southern Nallamalai-fold-fault belt, Cuddapah Basin, South India: Implications from Geometry, morphology, Deformation mechanisms and strain; *Proceedings of the International symposium on Precambrian accretionary orogens and Field workshop in the Dharwar Craton, Southern India, New Delhi, India, 90-91.*

4. Mukherjee, M. K. (2013): Contrasting deformation Geometry, Kinematics and Microstructures between the Basement and the Mesoproterozoic cover rocks of the Kaladgi Basin, Southwestern India: indications towards deformation of the cover by gravity gliding along a detached unconformity. *Proceedings of the International Conference on Deformation Mechanisms, Rheology and Tectonics, Leuven Belgium pp 73.*

5. **Mukherjee, M. K. (2014):** Clay Minerals: the importance of their crystal structure, composition and properties in hydrocarbon exploration and landslide studies; *in Proceedings of the International Conference on Emerging Materials: Characterization and Application, Kolkata. I14.*

6. **Mukherjee, M. K., (2015).** Basement-cover relations in the intracratonic Kaladgi basin, southwestern India: Deformational evidence of a Mesoproterozoic gravity gliding of the cover over the basement, in Siégel, C., Verdel, C., and Rosenbaum, G. (Eds.), *Riding the Wave: GSA Specialist Group in Tectonics and Structural Geology conference, November 2015, Geological Society of Australia, Abstract no.* 113, 104-105.

7. **Mukherjee, M. K.,** Modak, K., and Das, S., (2015). Deformation scenario and metamorphism of the Mesoproterozoic cover rocks of the Kaladgi basin, southwestern India. Proceedings of the *4th Annual International Conference on Geological & Earth Sciences (GEOS 2015), October 2015, Singapore, Global Science and Technology Forum,* 50-61. doi:10.5176/2251-3353_GEOS15.42 *(Best Research Paper Award)*

8. **Mukherjee, M. K.,** Gupta, A. K. **2015**: Assessment of slope stability along the road section between Dharasu and Uttarkashi, Uttarkhand, India: Insights from continuous slope mass rating and back analysis of failed slopes. *Abstracts of the International Conference on "Engineering Geology in New Millenium"* at IIT Delhi, New Delhi, 27-29 October 2015, p. 215.

9. De, A., **Mukherjee, M. K. 2015**: Review of stability of pillars in underground coal mines: Recognizing the importance of the strengths of roof and pillar and their interrelationships. *Abstracts of the International Conference on "Engineering Geology in New Millenium*" at IIT Delhi, New Delhi, 27-29 October 2015, p. 152.

10. **Mukherjee, M. K. (2016).** Deformation patterns in the Bagalkot Group of rocks in the intracratonic Kaladgi basin, south western India: A case of Mesoproterozoic gravity gliding of the cover over the basement during basin uplift. Paper number 1859, *Abstract 35th International Geological Congress, Cape Town, South Africa.* http://www.americangeosciences.org/information/igc)

11. Karmakar, S, **Mukherjee, M.K,** Mohanty, B and Jaja Uruzula A. **(2016).** Geometry and kinematics of Moyar-Bhavani shear zone (central part), Tamil Nadu India: Characterising a Neoproterozoic oblique transpression. Paper number 459, *Abstract 35th International Geological Congress, Cape Town, South Africa.* http://www.americangeosciences.org/information/igc)

12. Gupta A. K. and **Mukherjee, M. K. (2016).** Assessment of rock slope failure analysis and rock mass characterization along road-cuts (NH-108) in Lesser-Himalaya region, India. Paper number 2012, *Abstract 35th International Geological Congress, Cape Town, South Africa* http://www.americangeosciences.org/information/igc)

13. Kumbhakar, S., Khan, M. A., **Mukherjee, M. K. (2016).** Gold mineralization along the Gurharpahar ridge in the Mahakoshal fold belt, Central India: Mode of occurrence, distribution, structural controls and exploration. Paper number 3986, *Abstract 35th International Geological Congress, Cape Town, South Africa.* http://www.americangeosciences.org/information/igc)Naim, F and **Mukherjee, M. K. (2017):**

14. Naim, F., **Mukherjee, M. K. (2017).** Use of fault displacement vector to identify future zones of seismicity: an example from earthquakes of Nepal Himalayas. Paper no. 293-10, Geological Society of America *Abstracts with Programs.* Vol. 49, No. 6, *GSA Annual Meeting, Seattle, USA.* doi: 10.1130/abs/2017AM-301896

15. **Mukherjee, M. K. (2019).** An Integrated study on Cleavage development in the contractional zone of a Paleo-Mesoproterozoic sedimentary cover deformed by gravity gliding: An example from Kaladgi Basin, South western India. In Glorie S, Wise T and Dutch R (Eds). *SGTSG and SGSEG 2019 abstracts: biennial meeting of the Specialist Group for Tectonics and Structural Geology and the Specialist Group in Solid Earth Geophysics, Convergence on the Coast, 18–22 November 2019, Port Lincoln, South Australia,* Report Book 2019/00019. Department for Energy and Mining, South Australia, Adelaide, p 58.

16. Mishra, P.K., Mohanty, S.P**, Mukherjee, M. K. (2022).** Low level of phosphorous concentration at the late Paleoproterozoic shallow seawater: Evidence from the BIF rocks of the Chilpi Group, Bastar Craton, Central India. *Goldschmidt 2022 Abstracts.* https://doi.org/10.46427/gold2022.9003

17. **Mukherjee, M. K. (2025):** Structural Geometry, Geochemistry and Emplacement Scenario of a Gabbro Intrusive in Archaean Bhavani Gneissic Complex, Southern Granulite Terrain, India:Petrogenetic and Metallogenic Implications. (SE-16 A005), *Proceedings of the International Conference of AOGS 2025., 27 July-1 Aug 2025, Singapore.*

18. Harshitha, G., Ignacio González-Álvarez, Manikyamba, C., D'Andres, J., **Mukherjee, M.K.,** Yadav, J.K., **(2025).** Ediacaran pristine Phosphorites from the Cuddapah Basin, India: Rare Earth Element mobilization, accumulation and enrichment mechanisms. *Abstracts of Goldschmidt Conference, 6-11 July, 2025, Prague*

Awards/ Recognitions:

1. **International Best Research Paper Award 2015** in the *4th Annual International Conference on Geological & Earth Sciences (GEOS 2015), October 2015, Singapore, Global Science and Technology Forum. DOI :* 10.5176/2251-3353_GEOS15.40

2. **Certificate of Excellence 2019** by M/s Mahanadi Coalfields Limited (A subsidiary of Coal India Ltd) for imparting industrial training on Geological Mapping in Mines for the executives of MCL.

3. **Letter of appreciation**, from Vice Principal of Parvatibai Chowgule college of Arts and Science (Autonomous, DBT Star), Goa, for the lecture on Geometry, Kinematics and Dynamics of Rock Deformation" and "Observing, Measuring, Documenting, Analyzing and Interpreting Structures in the Field" during **16-19 February 2020**.

4. **Comments of Appreciation** from Director IIT(ISM) Dhanbad **on 07.03.2019** for imparting training to the Officers of Mahanadi Coalfields Limited as a single coordinator resource person.

5. **Letter of Appreciation** from Director IIT (ISM) Dhanbad on 14.03.2023 for excellent teaching feedback from students for the subject GLC-503, Methods of Structural Geology in the Monsoon semester of **2022-2023.**

6. **B.P Radhakrishna Award** for the best research paper 2019, Geological Society of India, conferred on **24th September 2021**

7. **MGMI award of excellence** in Earth Sciences **2023,** by Mining, Geological, and Metallurgical Institute of India.

8. Contributor and Corresponding author of the best research publication that received **Inder Mohan Thapar Award (IMTR Award) 2023** at IIT ISM Dhanbad

9. **Honour of being invited** by the General President of **Indian Science Congress Association** to deliver the **Platinum Jubilee lecture in the section of Earth System Science** in the 108th Congress of ISCA held at Nagpur during 3-7 January **2023.**

Professional membership:

Member, Geological Society of India (L-1774)
Member, Indian Geological Congress (LM-725)
Member, American Association of Petroleum Geologists (10045036)
Member, Mining, Geological and Metallurgical institute of India (LM 10866)

Research Projects completed:

PI: Principal investigator, Co-PI: Co-Principal Investigator

1. **Mukherjee, M. K. (PI),** Jeere D.S., Tripathy, S.K. and Singh, A.K. (2004-2007); Thematic Geological Mapping of Gneiss Granulite Terrain, Western Bastar Craton, Chandrapur district, Maharashtra. ***Funding Agency: Geological Survey of India, Govt of India*** **(Completed)**

2. Devarajan, M. K.(PI) and **Mukherjee, M. K. (PI) 2005**: Active Fault Geological Mapping (Phase-1) in and around proposed Nuclear Power Plant Site, at Jaitapur, Ratnagiri district, Maharashtra, India. 2005**.** ***Funding Agency: Nuclear Power Corporation of India Limited*** **to Geological Survey of India (Central region) (Project value: 75.00 lakhs) (Completed)**

3. Khan A.S. and **Mukherjee, M. K. (PI) 2003**: Thematic Geological Mapping of Archean Sausar Belt around Ramakona Area, Chindwara District, M.P.: ***Funding Agency: Geological Survey of India.*** **(Completed)**

4. **Mukherjee M. K. (P.I)** (**2011-2014**): Structural Geometry, Kinematics of deformation and Metamorphism of the Proterozoic Kaladgi Group in the eastern parts of the Kaldgi Basin, Bagalkot district, Karnataka: Implication to basin tectonics. ***Funding Agency:*** *SERB,* ***Department of Science and Technology, Govt of India.*** **(Project value Rs. 17.44 lakhs)** IIT ISM Project No. DST (55)/2010-2011/276/AGL **(Completed)**

5. **Mukherjee M. K. (2012) (Technical Advisory Committee member) (Preparation of DPR, drafting of Recharge Pit design, Active Field investigation of drilling in representative wells of the sites) in** Artificial recharge and Roof Top rainwater Harvesting structures within the premises of **Indian School of Mines (*Funding Agency: Central Ground Water Board, Govt. of India***, (**Project value Rs. 1,74,85,645/-).** IIT (ISM) Project No**:** MWR(2)/2011-2012/307/AGL **(Completed)**

6. **Mukherjee, M. K. (2020) (PI):** Structural Geometry, Kinematics of deformation, Grain Scale deformation mechanisms and Geothermobarometry of the east-central part of the Mahakoshl belt, Central India: Implication on the tectonic evolution of the Central Indian Tectonic Zone. Funding Agency: ***Science and Engineering Research Board, Department of Science and Technology, Govt of India*** **(Project value: Rs. 69. 85 lakhs) IIT (ISM) Project No.** DST(SERB)(252)/2019-2020/701/AGL **(Completed)**

7. Mukherjee, M. K. (P.I), Sarkar, B. C. (External Member) and Banka, H. (2023): Development of AI-Based Integrated System for Exploration Targeting of Copper Deposits". Project No.: PSF-IH-2Y-TD-007. Funding Agency TEXMIN (DST) (**Project value Rs. 24.92 lakhs) (Ongoing)**

Consultancy:

CI: Consultant In-charge Coordinator, Co-CI: Co-consultant In-charge/Co-Coordinator

1. Mohanty S and **Mukherjee M. K. (Co-CI) (2008):** Structural mapping of deformed mica rich pegmatite veins within Chotonagpur gneissic complex, around Moko, Dhanbad district Jharkhand, *Funding Agency* ***Castron Technologies Ltd. Dhanbad (Project value Rs 89,888/- CONS/0556/08-09)*** **(Completed)**

2. **Mukherjee, M.K. (C I) (2009):** Petrographic examination of coarse-fine aggregates for landslide analysis : *Funding Agency:* ***Central Institute of Mining and Fuel Research, Dhanbad. (Project value Rs. 44,944/- CONS/0911/09-10))*** **(Completed)**

3. **Mukherjee, M. K (CI) and** Sarkar B. C **(2010)** : Petrographic examination of coarse-fine aggregates for landslide analysis : *Funding Agency:* ***Central Institute of Mining and Fuel Research, Dhanbad. (Project value Rs. 19,854/- CONS/1143/10-11)*** **(Completed)**

4. Sarkar, B.C., Venkatesh, A.S. **and Mukherjee M. K. (Co- CI) (2011)**: Vetting of DMG Report on: A concise study report on the Iron Ore Deposits of Lease Hold areas of Steel Authority of India Limited in West Singbhum District, Jharkhand. *Funding Agency*: ***Department of Mines and Geology, Govt. of Jharkhand, Ranchi. (Project Value: Rs. 3,86,050/- CONS/1185/10-11)*** **(Completed)**

5. Sarkar, B.C. and **Mukherjee M. K (Co- CI) (2012):** Evaluation studies of the Promotional Scheme of M/S MECL Nagpur. *Funding Agency*: ***Mineral Exploration Corporation Ltd. Nagpur (Project value: Rs. 8,98,880/- CONS/ 2000/2012-13)*** **(Completed)**

6. **Mukherjee, M. K (CI)** and Sarkar , B. C **(2012):** A Report on Hydrogeological Study for Rajgamar Dipside (South of Phulakdih nala) in the SECL Premises in Korba District, Chattisgarh*. Funding Agency:* ***Monnet Ispat & Energy Ltd, New Delhi. (Project value: 11,03,000/- CONS/1672/2011-12)*** **(Completed)**

7. **Mukherjee, M. K (CI)** and Sarkar, B. C **(2013):** A Report on Hydrogeological Study for Gare-Palma IV/5 Coal Block, Mand Raigarh Coalfields, Chattisgarh. Funding Agency*:* ***Monnet Ispat & Energy Ltd, New Delhi. (Project value 15,16,860/- CONS/2041/2012-13)*** **(Completed)**

8. Mohanty, S., **Mukherjee, M. K. (Co-CI)** and Anand, R **(2017)**: Evaluation of XII Plan Schemes of Geological Survey of India, Govt. of India, during July and August 2017. Funding Agency: **Ministry of Mines, Govt. of India, (*Project value: 22,000,00/- +GST, CONS/3579/17-18*)**(Completed)

9. Paul. B. **Mukherjee, M.K. (Co-CI)** and others **(2024).** A Scientific Study on the Assessment of Impact of Mine Blasting Operations on Environmental Pollution and Important Structures of Chittorgarh Fort for Suggesting Suitable Remedial Measures **(Ongoing).** Funding Agency: **M/S Birla Corporation Ltd., (*Project value:* 2,06,50,000/- *CONS/7214/2023-24*)** (Completed)

10. **Mukherjee, M. K., (CI)** Mishra, D.P., and Shravan Kumar **(2025).** Vetting of valuation reports, market research, and estimation of minimum recovery rate and determining the suitability of auction criteria of tailing dumps of Bharat Gold Mines Limited **(Ongoing).** Funding Agency: **M/S SBI Capital Markets Ltd. (Project Value: 17,70,000/-** ***CONS/7054/2022-23*****) (Ongoing)**

Skill/capacity development for Industry sponsored personnel/ Professional Development Programs

CI: Consultant In-charge/Coordinator, Co-CI: Co-consultant In-charge/Co-Coordinator

Conducted training courses:

1. Sarkar B. C **and Mukherjee M. K. (Co- CI) (2008)** : Training Course on *Exploration and Orebody Modelling*, for Geologists and Mining Engineers of Steel Authority of India Limited at Management Training Institute, Ranchi in August 2008. *Funding Agency*: **Steel Authority of India Ltd. New Delhi (CONS/0674/08-09, Project value: Rs. 73,030/-)**

2. Sarkar B. C and **Mukherjee M. K. (Co. CI) (2012):** Training Program on "A Primer on Geostatistics" for the officers of AMD during 01.10.2012-12.10.2012. *Funding Agency*: **Atomic Minerals Directorate for Exploration and Research, Hyderabad (Project Value: 7,86,520/- CONS/1925/2012-13)**

3. Mohanty, S. and **Mukherjee M. K. (Co- CI) (2013)**: Training Program on Geotechnical Engineering and Soil Mechanics for executives of DRDO, Govt of India from 3.6.2013 to 12.06.2013. *Funding agency:* **Ministry of Defence, Govt. of India, (Project value: 10,16,858/- CONS/2175/2013-14)**

4. **Mukherjee, M. K. (2011) (CI):** Imparted Specialized training on invitation, to officers of Geological Survey of India, Govt. of India on Structural Mapping in Moyar-Bhavani Attur Lineament (Shear zone) around Gopichettipalyem, Erode district Tamil Nadu from 05.12.2011 to 09.12.2011. **(Funding Agency: Geological Survey of India Training Institute).**

5. **Mukherjee, M. K. (2012) (CI):** Imparted training on invitation, to officers of Geological Survey of India, Govt. of India, on Refresher Course on Structural Geology including fieldwork and structural mapping in Cuddapah Basin Andhra Pradesh from 21.09.2012 to 29.09.2012 **(Funding Agency: Geological Survey of India Training Institute)**

6. **Mukherjee, M. K. (2013) (CI):** Imparted training on invitation, to officers of Geological Survey of India, Govt. of India, on Specialized Thematic Mapping (STM) in Sausar Mobile Belt around Ramtek, Maharashtra from 08.07.2013 to 12.07.2013. **(Funding Agency: Geological Survey of India Training Institute)**

7. **Mukherjee, M. K (2014) (CI):** Imparted training on invitation, to officers of GSI, Govt. of India, on Geological and Structural mapping in the Barapani Shear Zone, Meghalaya Plateau, Shillong from 21.07.2014 to 26.07.2014. **(Funding Agency: Geological Survey of India Training Institute)**

8. **Mukherjee, M. K. (2019) (CI)**: On invitation to provide on-site training in *Geological Mapping in Mines* for the officers of Mahanadi Coalfields Limited**. (Project value: Rs. 10,19,520/-,** *Funding Agency***: Mahanadi Coalfields limited (Coal India Limited).** IIT(ISM) Project No**: MCL/2018-2019/616/AGL**

9. Venkatesh, A. S., **Mukherjee, M. K.(Co-CI),** Singh, S and Sahoo, P.R. **2019:** Imparted training in "Professional Development Programme on Advanced Geological Technology" for the Executives of Tata Steel Ltd. from 01-13 July 2019. (IIT (ISM) Project No: **EDP /5043/2019-2020**) **22.0 LAKHS**

10. **Mukherjee, M. K. (2019) (CI):** Imparted Field training on invitation, to officers of GSI, Govt. of India, as Guest faculty in "Advanced Course in Structural geology for Mineral targeting" at Zawar, Rajasthan from 27.08.2019 to 30.08.2019. **(Funding Agency: Geological Survey of India Training Institute)**

11. **Mukherjee, M. K. (2022) (CI):** Imparted Field training on invitation, to officers of GSI, Govt. of India, as Guest faculty in "Refresher Course in Structural geology" at Chitradurga, Karnataka from 17.06.2022 to 19.06.2022. **(Funding Agency: Geological Survey of India Training Institute).**

12. **Mukherjee, M. K. (2025) (CI):** Imparted Field training on invitation, to officers of GSI, Govt. of India, as Guest faculty in "Advanced Course in Structural Geology" at Zawar, Rajasthan from 05.07.2025 to 12.07.2025. **(Funding Agency: Geological Survey of India Training Institute).**

Expertise availability with the undersigned:

- Basin analysis involving interplay of sedimentation, tectonics and climate,
- Structural Geology and its application in Mineral and Petroleum Exploration, Engineering Geology, Thematic Mapping; Geological Mapping in Mines,
- Applied Hydrogeology, Water influx in underground and opencast mines, rainwater harvesting and artificial recharge.
- Slope stability evaluation in highways in hilly regions, Stability and performance analysis in Tunnels and Dams.

Laboratory Development:

1. Actively contributed in the renovation of the Petrology Laboratory in 2009. Served as In-Charge/Joint In-Charge of Petrology laboratory in the Department of Applied Geology and engaged in Instrument procurement, maintenance of equipments, consultancy works, training and education of students in thin section photomicrography, optical crystallography and petrography. Procured Research Microscope of LEICA DM 750 P, (Value 13,598 Euros + 3050 GBP)

2. Renovated the old Engineering Geology Laboratory in First Phase (2011-2012). Served as Co-In-Charge of the Engineering Geology and Soil Mechanics Laboratory in the Department of Applied Geology. Actively engaged in maintenance of equipments, drafting of renovation and supervision of renovation, consultancy, training and teaching of M. Tech (Engg. Geology) Students in (1) Rock Slope Engineering (2) structural methods in site Engineering and (3) Geotechniques of Dams tunnels and underground space)

3. Development (ongoing) of the laboratory of Rock microstructural and fabric analysis. Procurement of advanced Research Microscope Axio-Imager M2M by Zeiss with automated stepper stage point counting facility from DST SERB grant CRG/2019/006086 and installation of the same as a part of the development of the laboratory.

4. Development of Experimental Rock deformation Laboratory with Triaxial stress determination facility as a part of UG-PG teaching program.

Courses Taught

Theory

1. Geology IV for Mining Engineers (9th sem B. Tech ME) 2007-2009
2. Geology for Petroleum Engineers (6th Sem B. Tech P.E) 2007-2010
3. Structural Methods for Exploration (6th M. Sc Tech AGL) 2009
4. Physical and Structural Geology (4th Sem M.Sc Tech AGP and 6th Integrated M. Sc Tech AGP) 2008-2014)
5. Tectonics and Structural Methods for Exploration (1st sem. M. Tech Mineral Eploration) 2007-2019
6. Tectonics and Structural methods for Exploration (1st sem M. Tech Geoexploration) 2020-2021
7. Rock Slope Engineering (1st sem. M. Tech Engineering Geology) 2010-2012
8. Structural Methods in Site engineering (1st M. Tech Engineering Geology) 2011-2013
9. Methods of Structural Geology (Ist sem M. Sc Tech AGL and 5th Integrated M. Tech AGL) 2014-2018, 2022-2025
10. Kinematics of Rock Deformation (6th Sem M. Sc Tech AGL) 2014-2024
11. Geomorphology (4th sem m. Sc Tech AGL and 6th Integrated M. Tech AGL) 2011-2024
12. Sequence Stratigraphy and Basin Analaysis (5th Sem. M. Sc Tech AGL and 9th Interated M. Tech AGL, 2nd Sem M. Tech Petroleum Exploration) 2019-2021
13. Earth System Science (Ist Sem B. Tech Common) 2017-2019
14. Geotechniques of Dams, Tunnels and Underground Space (1st M. Tech Engineering Geology + 1st M. Tech Tunneling and Underground Space Technology) 2015-2021

Practical

1. Petroleum Geology Practical (5th Sem M. Sc Tech AGL + 9th sem Int. M. Tech AGL) 2019
2. Physical and Structural Geology Practical (4th Sem M.Sc Tech AGP and 6th Integrated M. Sc Tech AGP) 2008-2014
3. Geology IV for Mining Engineers Practical (9th sem B. Tech ME) 2007-2009
4. Geomorphology Practical (4th sem m. Sc Tech AGL and 6th Integrated M. Tech AGL) 2011-2024
5. Basin Analysis Practical (2nd Sem. M. Tech Petroleum Exploration)
6. Methods of Structural Geology (Ist sem M. Sc Tech AGL and 5th Integrated M. Tech AGL) 2018, 2019, 2025.

7. Crystallography Practical (3rd Sem Integrated M. tech AGL) 2009-2013
8. Fieldwork for Geological mapping of Deformed and metamorphosed terrain (4th Sem M. Sc Tech AGL +8th Integrated M. Tech AGL) 2007-2024

Administrative Charges handled:

- Coordinator (M. Tech Mineral Exploration) 2008-2010
- Coordinator (M. Tech Engineering Geology) 2010-2012
- Coordinator (M. Tech Geoexploration) 2019- 2021
- Tabulator (Semester Examination, Applied Geology): (2007-2013)
- Faculty Advisor (3 yrs M. Sc Tech (Applied Geology): 2009-2013
- Member (Departmental Research Council, AGL): 2010-2012
- Observer, Kolkata Center (ISM Entrance Examination for M. Sc /M. Sc Tech/JRF): 2011-2017
- Member (Academic Council, ISM Dhanbad): 2013-2016.
- Faculty In-charge (Training and Placement, AGL): 2013-2015
- Organizing Joint Secretary (International Conference on NPESMD 2011, Vision 2050 organized by AGL): 2011
- Founder and Faculty Advisor, AAPG Student Chapter, Department of Applied Geology, IIT (ISM) Dhanbad. 2009-continuing.
- Mentor and faculty Advisor of IIT (ISM) Team for participation in AAPG Imperial Barrel Award 2018, 2025.
- Faculty in Charge- Students Training: 2019-2021
- Faculty in Charge-Departmental Examinations 2017-2021
- Faculty in Charge- Students Placement 2015- continuing).
- **Head of the Department of Applied Geology** 2021- 2024

Participation in jobs of various Ministries, Govt. of India / Other Organizations of National importance

1. Special Invitee of the Expert committee of the Prime Minister's Early Career Research Grant, ANRF (2025), Ministry of Science and Technology, Govt. of India.

2. Member of Technical Coordination and Cost Committee (TCC-2) of NMET, Ministry of Mines, Govt. of India (2024- continuing) and ongoing participation in technical and financial evaluation of several projects submitted by the agencies to the ministry (total 15 meetings till date).

3. Member of the Committee for Confidential Operations for paper setting for GATE–JAM 2025, at IIT Bombay, during 20.07.2024 to 26.07.2024

4. Member of the Committee for Confidential Operations for paper setting for GATE–JAM 2024, at IIT Kharagpur, during 26.07.2023 to 03.08.2023

5. Represented Director of IIT(ISM) in the meetings of the Central Geological Programming Board (CGPB) of the Ministry of Mines, Govt. of India in 2022, 2023, and 2024.

6. Member of the Assessment Promotion Committee of the Wadia Institute of Himalayan Geology and evaluated the applications of eligible scientists for promotion to the next higher grades on 20.12.2021.

7. Member of the Evaluation Committee for IndiaAI-GSI Mineral targeting with AI Hackathon 2025 of Ministry of Mines and Ministry of Electronics and Information Technology, Govt. of India.

Conferences/Workshops Organized: Convener and Organizer of AAPG Students Chapter IIT(ISM) National Annual Conference: 2013, 2014, 2015, 2016, 2017, 2018

Reviewer assignments completed

- Journal of Geological Society of India
- Journal of Earth System Science
- Geological Journal
- Bulletin of Engineering Geology and Environment
- Physics and Chemistry of the Earth
- Rock Mechanics and Rock Engineering
- Gondwana Geological Magazine
- Palaeontological Society of India

Industrial Experience

Served as Geologist (Jr) (Group A, Gazetted, executive) in Geological Survey of India from May 2002 to May 2007.

Dr. Mrinal Kanti Mukherjee
Associate Professor, Department of Applied Geology.
Indian Institute of Technology (Indian School of Mines)
Dhanbad-826004, India