

Bankim Mahanta

Assistant Professor,
Department of Geology,
Central University of Tamil Nadu

Work Experience

Jun 2020 -	Postdoctoral Associate
Dec 2019	Civil Engineering, University of Calgary, Canada
Nov 2019 -	Research Associate (Project)
Apr 2019	Department of Earth Sciences, IIT Bombay, India
Feb 2019 -	Research Associate
Sep 2018	Department of Earth Sciences, IIT Bombay, India

Education

Jan 2019 -	Doctor of Philosophy (Geomechanics)
Jul 2014	IIT Bombay, India & Monash University, Australia
May 2014 -	Master of Science (Applied Geology)
Jul 2012	IIT Bombay, India
May 2012 -	Bachelor of Science (Geology)
Aug 2009	North Orissa University, India

Awards and Achievements

2020	Excellence in Ph.D. Research Award Dept. of Earth Sciences, IIT Bombay, India
2019	Eyes High Postdoctoral Award Dept. of Civil Eng., University of Calgary, Canada

List of Publications

A. Journal (Selected)

- Mahanta, B.**, Ranjith, P.G., Vishal, V., Singh, T.N., 2020. Temperature-induced deformational responses and microstructural alteration of sandstone. **Journal of Petroleum Science and Engineering**. 192, 107239. [IF-3.706]
- Mahanta, B.**, Vishal, V., Ranjith, P.G., Singh, T.N., 2020. An insight into pore-network models of high-temperature heat-treated sandstones using computed tomography. **Journal of Natural Gas Science and Engineering**. 77, 103227. [IF-3.841]
- Vishal, V., **Mahanta, B.**, Pradhan, S.P., Singh, T.N., Ranjith, P.G., 2018. Geologic sequestration of anthropogenic CO₂ for enhanced coalbed methane recovery in Jharia coalfields, India. **Energy**. 159, 1185-1194. [IF-6.082]



Contact

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Language

- Odia
- English
- Hindi

Hobbies

- Playing Cricket

Professional Skill

- Image analysis using Avizo
- High T-P experimentation of rocks
- Pore network modelling
- Rock permeability evaluation
- Experimental rock fracture mechanics (mode-I, mixed mode, mode-II)

Teaching Interest

- Engineering geology
- Rock mechanics
- Reservoir geomechanics
- Applied rock mechanics for unconventional energy

Research Interest

- Geomechanics and rock mechanics
- Geological CO₂ sequestration
- Fracture mechanics of rock
- Slope stability analysis

Research Output

- Cumulative Impact Factors: 49.8
- Journal Articles: 13
- Conference Articles: 6
- Book Chapter: 1
- Number of citations: 339
- 'h'-index: 9
- 'i'10-index: 9
- Journal Reviewer: 16

Google Scholar:

<https://scholar.google.com/citations?user=bkOVAsYAAAAJ&hl=en>

ResearchGate:

https://www.researchgate.net/profile/Bankim_Mahanta

Software Skill

- Avizo
- Abaqus

4. **Mahanta, B.**, Singh, T.N., Ranjith, P.G., Vishal, V., 2018. Experimental investigation of the influence of strain rate on strength; failure attributes and mechanism of Jhiri shale. **Journal of Natural Gas Science and Engineering**. 58, 178-188. [IF-3.841]
5. **Mahanta, B.**, Tripathy, A., Vishal, V., Singh, T.N., Ranjith, P.G., 2017. Effects of strain rate on fracture toughness and energy release rate of gas shales. **Engineering Geology**. 218, 39–49. [IF-4.779]
6. **Mahanta, B.**, Singh, T.N., Ranjith, P.G., 2016. Influence of thermal treatment on mode I fracture toughness of certain Indian rocks. **Engineering Geology**. 210, 103–114. [IF-4.779]
7. **Mahanta, B.**, Singh, H.O., Singh, P.K., Kainthola, A., Singh, T.N., 2016. Stability analysis of potential failure zones along NH-305, India. **Natural Hazards**. 83, 1341–1357. [IF-2.427]
8. Kundu, J., **Mahanta, B.**, Sarkar, K., Singh, T.N., 2018. The Effect of Lineation on Anisotropy in Dry and Saturated Himalayan Schistose Rock Under Brazilian Test Conditions. **Rock Mechanics and Rock Engineering**. 51, 5–21. [IF-4.140]
9. Sirdesai, N.N., **Mahanta, B.**, Ranjith, P.G., Singh, T.N., 2019. Effects of thermal treatment on physico-morphological properties of Indian fine-grained sandstone. **Bulletin of Engineering Geology and Environment**. 78, 883-897. [IF- 3.041]
10. Vishal, V., Chandra, D., Bahadur, J., Sen, D., Hazra, B., **Mahanta, B.**, Tiwari, D., 2019. Interpreting pore dimensions in gas shales using a combination of SEM imaging, small angle neutron scattering and low-pressure gas adsorption. **Energy & Fuels**. 33, 4835–4848. [IF-3.421]

B. Conference (Selected)

1. **Mahanta B.**, Ranjith P G, Singh T N, Vishal Vikram, Duan WenHui, Sazid Mohammed, 2018. Digital rock physics and application of high-resolution micro-CT techniques for geomaterials, in: **International Conference on Geomechanics, Geo-energy and Geo-resources (IC3G)-2018, Sichuan University, Chengdu, China.**
2. **Mahanta, B.**, Sirdesai, N.N., Singh, T.N., Ranjith, P.G., 2017. Experimental Study of Strain Rate Sensitivity to Fracture Toughness of Rock using Flattened Brazilian Disc. *Procedia Eng*, in **EUROCK 2017, Ostrava, Czech Republic.**
3. **Mahanta, B.**, Vishal, V., Singh, T., Ranjith, P.G., 2016. Strain Rate Dependency of Fracture Toughness, Energy Release Rate and Geomechanical Attributes of Select Indian Shales, in: **AGU Fall Meeting 2016, San Fransisco, USA.**

Journal Reviewer

- Engineering Geology
- Journal of Natural Gas Science and Engineering
- International Journal of Rock Mechanics and Mining Sciences
- Journal of CO₂ Utilization
- Geophysical Journal International
- Process Safety and Environmental Protection
- Journal of Structural Geology
- Journal of Petroleum Science and Engineering
- Bulletin of Engineering Geology and the Environment
- Arabian Journal of Geosciences
- Energy and Climate Change
- Oil & Gas Science and Technology
- Experimental Techniques
- Plos One
- Geomechanics and Geophysics for Geo-Energy and Geo-Resources
- Process Safety and Environmental Protection

C. Book Chapter

1. **Mahanta, B.**, Vishal, V., 2020. CO₂ sequestration and enhanced coalbed methane recovery: Worldwide status and Indian scenario, in: De Maio, M., Tiwari, A.K. (Eds.), *Applied Geology: Approaches to Future Resource Management*. Springer. pp 161-181.

Membership

1. Member of International Society for Rock Mechanics (ISRM)
2. Life Member of Indian Science Congress Association (ISCA)
3. Association of Environmental & Engineering Geologists (AEEG)

Position of Responsibilities

1. Student Co-ordinator: Carbon capture, storage and re-use in India, Mumbai, India (2018)
2. Student Co-ordinator: Carbon capture, storage and re-use in India, Mumbai, India (2016)
3. Teaching Assistant: Department of Earth Sciences, IIT Bombay (July 2014-Jan 2017 & Feb 2018-Jan 2019)
4. Organizer: Odia Utkala Cultural Association, IIT Bombay (July 2012-Jan 2017)
5. Coordinator (Accommodation): Indorock-2016 conference, IIT Bombay (2016)
6. Treasurer: Odia Utkala Cultural Association, IIT Bombay, Mumbai (July 2014-July 2015)

Professional Development and Certification

1. Programming for Everybody (Getting Started with Python), *Coursera.org & University of Michigan*
 2. Python Data Structures, *Coursera.org & University of Michigan*
 3. Oil & Gas Industry Operations and Markets, *Coursera.org & Duke University*
 4. Python for Data Science and Machine Learning Bootcamp, *Udemy.com*
 5. Learn to Code in Python 3: Programming beginner to advanced, *Udemy.com*
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