

Dr. BIJAY MIHIR KUNAR, ASSOCIATE PROFESSOR

B.E. (Mining), M.E. (Mining, IEST), Ph.D. (Mining, IIT KGP), Member of SGAT and IEI

Second Class Manager Certificate of Competency (Restricted), DGMS Dhanbad

Former Scientist NIRM, Ministry of Mines, Govt of India.



Dr. B. M. Kunar has joined in the Department of Mining Engineering NITK Surathkal on 23rd September 2013. Prior to join NITK Surathkal, he worked as an **Assistant Professor in the Department of Mining Engineering Indian School of Mines (ISM), Dhanbad & Scientist at National Institute of Rock Mechanics (NIRM), Bangalore**. He joined Dungri Limestone Quarry of M/s ACC Limited in March 2003 and worked there for the period of one and half year. He obtained **Second Class Manager Certificate of Competency (Restricted)** from the Govt. of India in 2004. He completed his B.E (Mining) from Odisha School of Mining Engineering, Keonjhar (now GCE Keonjhar), M.E. (Mining) from Bengal Engineering and Science University Shibpur (now IEST Shibpur) and Ph.D. in Mining Engineering (Mine Safety) from Indian Institute of Technology Kharagpur. His area of specialization is **Mine Safety Engineering and Management, Occupational Health and Safety, Mine Surveying and Geomatics, and Rock Mechanics**. He has published more than 40 technical research papers in various reputed International Journal having high impact factor, National Journal and Seminar proceedings. He was associated with the French National Institute for Health and Medical Research (INSERM, France) on an epidemiological study to assess the relationships between job, lifestyle, age and occupational injuries of coal miners. Dr. Kunar also worked as a Research Assistant in the Department of Mining Engineering IIT Kharagpur from July 2008 to September 2008 in a Project entitled “Investigation of Ensemble Modelling of Multiple Networks Using Negative Correlation Learning for Ore body Modelling” sponsored by ISIRD. He has successfully completed two sponsored projects as an investigator. He has also received CORE RESEARCH GRANT (CRG) from DST-SERB in the year 2020. He has authored a book titled “Risk analysis of coal miners’ injuries: An Epidemiological Approach” by LAP Lambert Academic publishing AG & Co.KG, Germany. He is having wide experience in working funded research projects, preparation of proposals and technical reports. He is actively involved in teaching and research for more than 10 years in research lab and academic institute. While he was working as a faculty in the Department of Mining Engineering Indian School of Mines Dhanbad during the period (2009-2013) he was associated with teaching undergraduate and postgraduate students. He has guided several B. Tech and M. Tech dissertation work. Apart from teaching he was associated with different Executive Development programs (EDP), R&D (Research & Development) and consultancy projects. He was also handled different administrative responsibility such as faculty in-charge mining engineering society, faculty in-charge CLMM Lab, faculty adviser of final year students and other administrative responsibility successfully. He is a recipient of various awards, prizes and other honors for his contribution to mining engineering.

Name Date of Birth	Dr. Bijay Mihir Kunar 15th March 1976
Correspondence	DEPARTMENT OF MINING ENGINEERING NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL, MANGALORE Phone No: +91 +824 +2473377 Fax: +91 +824 +2474033, 2474039 Email: bkunar@nitk.edu.in bkunar@gmail.com web: https://mining.nitk.ac.in/faculty/bijay-mihir-kunar
Marital Status Category	Married General
Present Employment	Presently working as Associate professor, Dept. of Mining Engineering, National Institute of Technology, Karnataka, Surathkal, Mangalore
Research Areas	Mine Safety Engineering and Management, Occupational Health and Safety, Safety Data Analytics, Mine Surveying and Geomatics, and Rock Mechanics
Research Interest	GIS and Remote Sensing, IT Applications in Mining,

Academic Performance Details

Degree/Examination	University/Institution	Year	Discipline	% of Marks	Division/Class
Ph.D. (Mining Engineering)	I.I.T Kharagpur	2009	Mining Engineering	-	-
M.Tech./M.E.	IEST, Shibpur. (Formerly BESU, Shibpur)	2003	Mining Engineering	75.78	1st
B.Tech./B.E.	GCE, Keonjhar, Odisha (Formerly OSME, Keonjhar)	2001	Mining Engineering	72.69	1st
H.S.or Equivalent (+2 Science)	S.V.M College, Jagatsinghpur C.H.S.E, Odisha	1994	+2 Science	70.55	1st
Madhyamik/Matric or Equivalent	S.K. Academy Jagatsinghpur B.O.S.E, Odisha	1992	-	72.13	1st
BSc (Physics)	S.V.M College, Jagatsinghpur Utkal, University Odisha	1997	+3 Science (PhyHons)	Completed Pedigreed Exam	-

Awards/ Prizes/Honors Won

- ❖ **Core Research Grant** received from DST-SERB in 2020 (PI: B.M Kunar Co- Pi Late Prof. M. Aruna).
- ❖ **BOS Member BPUT and Centurian University ODISHA.**
- ❖ **Indian Examiner** for PhD thesis Evaluation
- ❖ **UPSC advisory Committee Member**
- ❖ **Outstanding reviewer award** from **Journal of Safety Science** (Elsevier Publisher).
- ❖ **Best reviewer award** from **Journal of safety science** (Elsevier Publisher).
- ❖ **NIR Silver Jubilee Medal** for distinguish service as scientist to the Institute (Ministry of Mines, Govt of India)
- ❖ **Second Class Managers' Certificate of Competency (Restricted)** from **Directorate General of Mines Safety**, Govt. of India.
- ❖ Recipient of the **“Hindustan Zinc Limited Prize”** by the Institution of Engineers (INDIA) for the best technical research paper.

- ❖ Reviewer for DST-SERB, CSIR (Govt. of India) and GIAN project proposal.
- ❖ Awarded SRF **Fellowship** from MHRD Govt. of India to carry out Ph.D. at IIT Kharagpur.
- ❖ Recipient of GATE **Scholarship**, NRTS and National Merit Scholarships.
- ❖ GATE 2001 All India Rank 37 in Mining Engg
- ❖ OJEE Rank 1997: 733 (All Odisha Rank)

Teaching and Research Experience

ORGANIZATION	DESIGNATION	DURATION
NITK Surathkal	Associate Professor	09.10.2023 to till date (with AGP-9500/-)
NITK Surathkal	Assistant Professor	23.09.2013 to 08.10.2023 (with AGP-8000/-)
ISM Dhanbad	Assistant Professor	From 22.06.2010 – 13.09.2013 (With AGP-8000/-)
ISM Dhanbad	Assistant Professor	15.06.2009 - 22.06.2010 (With AGP-7000/-)
National Institute of Rock Mechanics (NIRM), Under Ministry of Mines Govt. of India	Scientist-I	27/10/2008 to 03/06/2009 (With AGP-5400/-)
IIT Kharagpur	Research Assistant	July 2008 to September 2008 (With award of fellowship)

Working and Training Experience

ORGANIZATION	DESIGNATION	DURATION
Dungri Limestone Quarry of Baragarh Cement LTD (A subsidiary of M/S Associate Cement Company Limited)	Mining Engineer	March 2003-June 2004
Central Mining Research Institute Dhanbad (A Unit of Council of Scientific and Industrial Research, India).	Project Trainee	September '02 – January '03
Joda East Iron Mines of M/S Tisco Ltd.	Trainee	One month
Deulibera Colliery of M.C.L (A Subsidiary of Coal India Ltd)	Trainee	One month
Gurpahar Mines of M/S B.S.L Co. Ltd	Trainee	One month

Academic Administrative Responsibility

ADMINISTRATIVE POST	TITLE	DURATION
Food Quality Monitoring Committee	Member	23-06-2026 To till date
Q&M Warden	VINDHYA & TRISHUL SHIVALIK	13-07-2015 To 12.07.2026
Block Warden	EVEREST	19-10-2023 TO 13-06-2024 13-06-2024 TO 12.07.2025
Faculty Advisor/First Year/Second Year/Fourth Year	First Year Faculty Advisor Second Year Faculty Advisor	July 2021-Continuing June 2020 - May 2021 2018 – 2020 (For 2 Years)
Secretary DUGC/DPGC/DRPC	DUGC DPGC DRPC	2018 – 2020 (For 2 Years) June 2020 - May 2021 2015-2017 (For 2 Years) April 2023-Continuing

Faculty-In-Charge Mine Surveying Lab//Mine Planning and Design Lab	LAB In-charge	July 2021-Continuing 2019 – 2021(For Two Years) <u>Mine Planning and Design Lab</u> 2019 – 2020 (For 1 year)
Faculty-In-Charge Rock Mechanics Lab	Lab In-charge	2015-2017 (For 2 Years)
Institute Level Committee Member	Rajbhasha Adhikari	July 2021-July 2023 2018 – 2021 (For Three Years)
Institute Level Committee Member	Library Advisory Committee	2015 – Till Date
Institute Level Committee Member	Web Content Management	July 2021-July 2024 2019 – 2021 (For 2 Years)
Institute Level Committee Member	Faculty-In-Charge Career Advance Cell/Startup cell	July 2021-July 2023 <u>Startup Cell</u> 2018 – 2019 (For 1 Year)
Institute Level Committee Member	Mining Engineering NIRF Coordinator/NBA Coordinator	2018 – 2019 (For NIR Coordinator) <u>For NBA</u> 2019 – 2021 (For 2 Years)

Paper publication

Annexure – I

Research Guidance List

Annexure – II

Short Term Course/Training Program

Annexure – III

R&D Projects

Annexure – IV

Consultancy Projects

Annexure-V

Member of Professional Bodies

- Life member of Society of Geoscientists and Allied Technologists (MSGAT)
- Life member Institute of Engineers India (IEI)

Reviewed Journal Paper/Editorial Activity

- ☐ Reviewer of Journal of Safety Science (Elsevier)
- ☐ Reviewer Journal of Global Public Health (Taylor & Francis)
- ☐ Arabian journal of Geosciences (Springer Nature)
- ☐ Journal of Geological Society of India (Springer Nature)
- ☐ Sadhana-Academy proceedings (Springer Nature) Editorial

Board Member journal of risk, insurance and safety

Member of Professional Bodies

- Life member of Society of Geoscientists and Allied Technologists (MSGAT)
- Life member Institute of Engineers India (IEI)

Organizing Seminar/Symposium/Workshop

- “SAFETY DATA ANALYTICS APPLICATIONS IN MINING AND OTHER CORE INDUSTRIES”, Sponsored by Department of Science and Technology (DST), Science & Engineering Research Board (SERB), Govt. of India under Accelerate Vigyan Scheme (KARYASHALA: High End Workshop) with financial support of Rs. 5 lakhs for conducting the High-End workshop from 6th March to 12th March, 2024.
- Five days "GIAN" course on "COMPUTER APPLICATION AND DATA ANALYSIS IN MINING AND OTHER CORE INDUSTRIES" with financial support of Rs. 5.44 lakhs for conducting the course during March 12-16, 2018.
- One Day Lecture Series on "Role of Rock Engineering in Nation Building" by NIRM, Bengaluru & NITK, Surathkal on 06.03.2023.
- Two days' workshop on "Industrial Safety and Health" sponsored by DST-SERB from 19-20th October, 2022
- Two days' workshop on "Recent Trends in Environment, Health, and Safety Management in Mining and other Core Industries" during January 27-28, 2017.
- Technical Committee member of 34th international conference of safety in mines research institutes (34th ICSMRI) held in the year 2011 at IIT Kharagpur.
- Organizing and Technical Committee member of the international mine ventilation congress held in the year 2009 (9th IMVC) at ISM Dhanbad.

Short Term Courses/Training Programs/Workshops Attended

- Geoenvironment 2026 22-23 May 2026, School of Infrastructure, IIT Bhubaneswar
- Design and Entrepreneurship 29-30 December 2025
- Remote sensing & GIS Technology & Applications for University Teachers & Govt officials, (IIRS), ISRO Dehradun, 13/06/2020 to 01/07/2020.
- Risk Assessment, Safety Management Plan and Accident Prevention in Mines July 1-5, 2019.
- Short term course on Mines safety and Legislation, June, 2006
- Short term course on Mine Management and Safety, April, 2008
- Short term course in Mine closure and management, July, 2004
- Short term course on Application on numerical modeling techniques to underground excavations and slopes, 1st April 09-08 April 09 at NIRM, Bangalore.
- International Workshop on “Methane Drainage from Underground Mines and Mine Gas Control, and Longwall Ventilation Practices”, Organized by Dept. of Mining Engineering, ISM Dhanbad on November 10, 2009 at Delhi.

Books Authored

Bhattacharjee A, **Kunar, B.M.** 2010 “**Risk analysis of coal miners’ injuries: An Epidemiological Approach**” LAP Lambert Academic Publishing AG & Co. KG, Germany, ISBN: 978-3-8383-4263-4.

Patent: IOT-Based Energy Generation and Monitoring System for Solar Power Optimization and Predictive Maintenance. Date of Grant: 10/07/2025.

Personal Details

Father’s Name: Late Sri. Jogendranath Kunar

Passport number: G1145913

Permanent Address:

Dr. Bijay Mihir Kunar

C/o: Late Sri. Jogendranath Kunar

At: Jogadhari (Near District Circuit House)

Po/Dist.: Jagatsinghpur, Odisha, Pin-754103

DECLARATION:

I hereby affirm that the information furnished in this resume is true and correct.

Date: 25 August 2026

Place: NITK Surathkal

(Bijay Mihir Kunar)

Annexture 1

Publication List

JOURNALS

1. Sahas V S, Kunar, B. M., & Chandar, K., R, 2025. Estimation of Strength Properties of Some Rocks using Ball Mill Grinding Characteristics, **Journal of Disaster Advances**, **18(5)**, 92-103. <https://doi.org/10.25303/185da920103>
2. Sahas V S, Kunar, B. M., & Chandar, K. R., 2025. A Hybrid Random Forest Optimized with the Dolphin Swarm Algorithm for Predicting P-Wave Velocity of Sedimentary Rocks Using Ball Mill Grinding Characteristics, **Journal of Disaster Advances**, **18(5)**, 1-9. <https://doi.org/10.25303/185da0109>
3. Sahas, Kunar, B. M., & Chandar, K. R., 2023. An Overview of The Applications of Soft Computing Methods for Predicting the Physico-Mechanical Properties of Rocks from Indirect Methods, **International Journal of Mining and Minerals Engineering**, 14(2), 124-156
4. Sangram Kishore Mallick, Dr Bijay Mihir Kunar, 2026, Enhancing Efficiency by Automated Monitoring of Dumper Performance Through Sensor Technology: A Case Study, INTERNATIONAL JOURNAL OF ENGINEERING RESEARCH & TECHNOLOGY (IJERT) Volume 15, Issue 03 , March – 2026
DOI: <https://doi.org/10.5281/zenodo.19388420>
5. Kumar, B.S., Kunar, B.M. & Murthy, C.S.N. Performance Evaluation and Machine Learning Analysis of 3 kW Grid-Connected Bifacial Solar Photovoltaic Systems. J. Inst. Eng. India Ser. B 106, 1929–1939 (2025). <https://doi.org/10.1007/s40031-025-01204-5>
6. BS Kumar, BM Kunar, CSN Murthy: An adaptive modeling for bifacial solar module levelized cost and performance analysis for mining application Progress in Photovoltaics: Research and Applications, 32(3), 186–198. (SCI-Q1) DOI: <https://doi.org/10.1002/pip.3746> Mar, 2024
7. BS Kumar, BM Kunar, CSN Murthy: Performance Evaluation and Machine Learning Analysis of 3 kW Grid-Connected Bifacial Solar Photovoltaic Systems Journal of The Institution of Engineers (India): Series B, 1-11. Springer. DOI:<https://doi.org/10.1007/s40031-025-01204-5> Feb, 2025
8. BS Kumar, BM Kunar, CSN Murthy: Performance analysis of a 50 MW grid-connected solar PV system for sustainable mining operations Journal of Disaster Advances 18(5), 196–201. (Scopus-Q4) DOI:[10.25303/185da1960201](https://doi.org/10.25303/185da1960201) May, 2025
9. Khale, B. R., Kunar, B. M., & Murthy, C. S. (2025). A Comparative Study and Regression Analysis on Physico-Thermal Properties using Pongamia Pinnata - Waste Cooking Oil Methyl Ester Mixture. *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 47(1), 7238–7249. <https://doi.org/10.1080/15567036.2021.1918289>
10. Kar, M. B., Aruna, M., & Kunar, B. M. (2023). Structural equation modelling of work-related musculoskeletal disorders among dumper operators. *Scientific Reports*, 13(1), 14055. <https://doi.org/10.1038/s41598-023-40507-9>
11. Kar, M. B., Aruna, M., & Kunar, B. M. (2023). Risk factors associated with work-related musculoskeletal disorders among dumper operators: A machine learning approach. *Clinical Epidemiology and Global Health*, 24, 101438. <https://doi.org/10.1016/j.cegh.2023.101438>
12. Kar, M. B., Aruna, M., & Kunar, B. M. (2023). Fuzzy Logic-Based Rapid Upper Limb Assessment: A Novel Approach to Evaluate the Postural Risk of Dumper Operators. *Journal of The Institution of Engineers (India): Series C*, 104(5), 1047-1055. <https://doi.org/10.1007/s40032-023-00986-1>
13. Shankar, V. K., Lakshmikanthan, A., Selvan, C. P., Girish, B. M., Kunar, B. M., de Jesus Agustin Flores Cuautle, J., ... & Malik, V. (2023). Prediction of transient temperature at bit-rock interface using numerical modelling approach and optimization. *International Journal on Interactive Design and*

- Manufacturing (IJIDeM), 1-13. <https://doi.org/10.1007/s12008-023-01543-x>
14. Kumar, B. S., Kunar, B. M., & Murthy, C. S. An adaptive modeling for bifacial solar module leveled cost and performance analysis for mining application. Progress in Photovoltaics: Research and Applications. <https://doi.org/10.1002/pip.3746>
 15. Sahas, Kunar, B.M. and Chandar, K.R. (2023) ‘An overview of the applications of soft computing methods for predicting the physico-mechanical properties of rocks from indirect methods’, Int. J. Mining and Mineral Engineering. DOI: [10.1504/IJMME.2023.133651](https://doi.org/10.1504/IJMME.2023.133651)
 16. Bekalkar M., Kunar, B.M, Aruna, M., (2021). Postural Analysis of Dumper Operators and Construction Workers- A Case Study. Journal of Mines Metals and Fuels, 69(6), 180- 185. <https://doi.org/10.18311/jmmf/2021/28525>
 17. Kumar B S., **Kunar, B. M.**, & Murthy, Ch. S. N. (2022). Application of Bifacial Solar power for Mining Operations – A review. **Journal of Mines, Metals and Fuels**, 70(12A): 1-150. <https://doi.org/10.18311/jmmf/2022/29942>.
 18. Khale, B. R., **Kunar, B. M.**, & Murthy, C. S. (2021). A Comparative Study and Regression Analysis on Physico-Thermal Properties using Pongamia Pinnata-Waste Cooking Oil Methyl Ester Mixture. **Energy Sources, Part A: Recovery, Utilization, and Environmental Effects**, 1-12. <https://doi.org/10.1080/15567036.2021.1918289>
 19. Vijay Kumar. S., **Kunar, B. M.**, Murthy Ch. S. N. (2019), “ANN model for prediction of bit-rock interface temperature during rotary drilling of limestone using embedded thermocouple technique” **Journal of Thermal Analysis and calorimetry**, <https://doi.org/10.1007/s10973-019-08646-2>.
 20. Shankar, V. K., Kunar, B. M., Murthy, C. S., & Ramesh, M. R. (2020). Measurement of bit-rock interface temperature and wear rate of the tungsten carbide drill bit during rotary drilling. Friction, 8(6), 1073-1082.
 21. Vijay Kumar. S., **Kunar, B. M.**, Murthy Ch. S. N. (2018), “Experimental investigation and statistical analysis of operational parameters on temperature rise in rock drilling” **International Journal of Heat and Technology**, Vol.36 (4), pp. 1174-1180. https://www.researchgate.net/publication/330158994_Experimental_investigation_and_statistical_analysis_of_operational_parameters_on_temperature_rise_in_rock_drilling
 22. Vijay Kumar S, Ch. S. N. Murthy, **Kunar B.M.** , (2018) “Effect of thermal response on physical properties during drilling operations-A case study”, **Materials Today**, Vol. 5 (2) 2018, pp. 7404-7409. <https://www.sciencedirect.com/science/article/pii/S2214785317326810>
 23. Reddy K.Sandip., **Kunar, B. M.**, Murthy Ch. S. N, (2017) “Impact of various factor on roof stability in underground coal mines”, **International Journal of Earth Science and Engineering**, Vol. 10(3), pp.626-632. https://www.researchgate.net/publication/318989677_Impact_of_Various_Factors_on_Roof_Stability_in_Underground_Coal_Mines
 24. Bhattacharjee, A., **Kunar, B.M.** (2016),” Miners’ return to work following injuries in coal mines, **Medycyna Pracy**, Vol. 67 (6),2016, pp. 729-742. <http://medpr.imp.lodz.pl/Miners-return-to-work-following-injuries-in-coal-mines.64056.0.2.html>
 25. **Kunar B.M.**, Bhattacharjee A., Samanta B.,Mitra A.(2014). “Relationships of Individual andworkrelated factors with obstructive type lung function disorder of underground coal miners-A Spirometry study” **Journal of Geology and Mining Research** 2014, Vol.6(5), pp.57-63. <https://academicjournals.org/journal/JGMR/article-abstract/99251CC47354>
 26. Bhattacharjee A., **Kunar B.M.**, Baumann Michele, Chau N, Lorhandicap group (2013). “The role of occupational activities and work environment in occupational injury and interplay of personal factors in various age groups among Indian and French coal miners” **International Journal of Occupational**

Medicine and Environmental Health 2013; Vol. 26(6), pp.1-20.

<http://ijomch.eu/The-role-of-occupational-activities-and-work-environment-in-occupational-injury-and-interplay-of-personal-factors-in-various-age-groups-among-indian-and-french-coalminers.2139.0.2.html>

27. Bhattacharjee A. **Kunar B.M. (2011)**.“Epidemiology: A tool for risk analysis of mine injuries” *Transactions of the Society of Mining, Metallurgy, and Engineering (SME)* USA, 2011, Vol. 328, pp. 490-500.
https://www.researchgate.net/publication/236949456_Epidemiology_a_tool_for_risk_analysis_of_mine_injuries
28. **Kunar B.M.,** Bhattacharjee A., Chau N. (2010). “A matched case-control study of occupational injury in underground coalmine workers” The *Journal of the South African Institute of Mining and Metallurgy (SAIMM Journal)*, Vol. 110, pp. 1-9.
http://www.scielo.org.za/scielo.php?script=sci_abstract&pid=S222562532010000100004&lng=es&nrm=iso
29. Chau N.,Bhattacharjee A.,**Kunar B.M.,** Lorhandicap group (2009).“Relationship between job, lifestyle, age and occupational injuries” *Occupational Medicine*, London, 2009, Vol. 59, pp.114 -119.
<https://www.ncbi.nlm.nih.gov/pubmed/19233831>
30. **Kunar, B.M.,** Bhattacharjee, A., Chau N. (2008).“Relationships of job hazards, lack of knowledge, alcohol use, health status and risk taking behaviour to work injuries of underground coal miners: A case-control study in India” “*Journal of Occupational Health, Japan*” 2008, Vol. 50 (3), pp.236-244.<https://www.ncbi.nlm.nih.gov/pubmed/18431033>
31. **Kunar, B.M.,** Bhattacharjee, A (2006)“Study of some occupational and individual factors in coal miners injuries” *Journal of Mines, Metals and Fuels*, 2006, Vol. 54, No.12. pp. 356-360.
https://www.researchgate.net/publication/286863087_Study_of_Some_Occupational_and_Individual_Factors_in_Coal_miners_Injuries
32. **Kunar B.M.,** Maiti J., Mandal P.K. (2007)“Numerical modeling – A Prerequisite for Support Design in Mines” “*Journal of Mine Tech*”, January-March, 2007, Vol. 28 (1), pp. 19-28.
https://www.researchgate.net/publication/286924093_Numerical_Modeling_Based_Study_In_Bord_and_Pillar_Working-A_Prerequisite_for_Support_Design_in_Mines
33. Maiti, J., Mandal, P.K., Singh, R.,**Kunar B.M. (2006)**“Impact of Stress Redistribution on Stability of Workings during Depillaring” *Journal of the Institution of Engineers (India)*, Mining Engineering Division, 2006, Vol. 87, PP. 10-22.
https://www.researchgate.net/publication/283724079_Impact_of_stress_redistribution_on_stability_of_workings_during_depillaring

Springer Book Series/Book Chapter

1. Bhattacharjee, A., Kunar, B. M., & Chau, N. (2007, September). Contribution of physical hazards and health-related factors in occupational injuries of underground coal miners: A matched case-control study. In Proceedings of the 32nd International Conference of Safety in Mines Research Institutes (SIMRI), Beijing, China, September (pp. 28-29). Available at: https://www.researchgate.net/publication/258628420_Contributions_of_physical_hazards_and_health-related_factors_in_occupational_injuries_of_coal_miners_A_matched_case-control_study.
2. Bhattacharjee, Ashis & Kunar, Bijay & Chau, Narkasen. (2009). Role of working condition, behavioral, lifestyle and health related factors in underground coal miners injuries: A case-control study. In Proceedings of 33rd international conference of safety in mines research institute. Wisla, Poland, September 15-18, 2009. Available at: https://www.researchgate.net/publication/258628351_Role_of_working_condition_behavioural_lifestyle_and_health_related_factors_in_underground_coal_miners_injuries_A_case-control_study.
3. Bhattacharjee A, Kunar B.M & Baumann, M & Chau, N. (2012). Associations between occupational factors and occupational injury and the interplay of personal factors in Indian and French coal miners (Book of proceedings, complete paper). In Proceedings of the 34th International Conference of Safety in Mines Research Institutes,

7-10December,2011.Availableat:

https://www.researchgate.net/publication/258447416_Associations_between_occupational_factors_and_occupational_injury_and_the_interplay_of_personal_factors_in_Indian_and_French_coal_miners Book of proceedings complete paper.

4. Kunar B.M, Bhattacharjee, A, Samanta, B & Shahid M. (2011). Relationships of Some Individual and Work-Related Factors to Lung Function Disorder of Underground Coal Miners – A Spirometry Study. In proceedings of Conference: 34th International Conference of Safety in Mines Research Institutes At: New Delhi, India Volume: 34. Available at: https://www.researchgate.net/publication/286877317_Relationships_of_Some_Individual_and_Work_Related_Factors_to_Lung_Function_Disorder_of_Underground_Coal_Miners_-_A_Spirometry_Study.
5. Swamy, S. V., Channabassamma, N., Kunar, B. M., Chandar, K. R., Senapati, A., & Avchar, A. (2025). A Hybrid Random Forest Optimized with the Dolphin Swarm Algorithm for Predicting P-Wave Velocity of Igneous Rocks Using Ball Mill Grinding Characteristics. Springer Proceedings in Earth and Environmental Sciences, 433-448. https://doi.org/10.1007/978-3-032-09929-7_31
6. Kumar, B.S., Swamy, S.V., Channabassamma, N., Kunar, B.M., Murthy, C.S.N. (2026). Hybrid Bifacial Solar Pv Grid-Interconnected Pumping System for Continuous Power Supply in Open Cast Mines. In: Sinha, A., Sarkar, B.C., Mandal, P.K. (eds) Innovative and Responsible Mining for Inclusive Growth. AMC 2025. Springer Proceedings in Earth and Environmental Sciences. Springer, Cham. https://doi.org/10.1007/978-3-032-09929-7_27
7. Swamy, S.V., Kunar, B.M., Chandar, K.R. (2025). Predicting Rock Properties of Limestone Using Operating Parameters of Ball Mill. In: Gorai, A.K., Ram, S., Bishwal, R.M., Bhowmik, S. (eds) Sustainable and Innovative Mining Practices. ICSIMP 2023. Springer Proceedings in Earth and Environmental Sciences. Springer, Cham. https://doi.org/10.1007/978-3-031-76614-5_42
8. Mahanta, M., Kunar, B.M. (2025). Study of Electronic Permit to Work System at Limestone Mining and Cement Industry to Control Accident and Injuries. In: Gorai, A.K., Ram, S., Bishwal, R.M., Bhowmik, S. (eds) Sustainable and Innovative Mining Practices. ICSIMP 2023. Springer Proceedings in Earth and Environmental Sciences. Springer, Cham. https://doi.org/10.1007/978-3-031-76614-5_5
9. Vijay Kumar S, **B. M. Kunar**, Ch. S. N. Murthy, “Temperature measurement during rotary drilling of rocks- A statistical approach”, Learning and Analytics in intelligent systems. Volume 2, pp 303-308 (**SCOPUS**). <https://www.springer.com/gp/book/9783030243135#>
10. Tejaswaran K. M, Ch. S. N. Murthy, **B. M. Kunar** “Numerical Investigation on Factors Affecting the Behaviors of Roof Bolts for Continuous Miner Working”, Learning and Analytics in intelligent systems. Volume-2, pp 383-389 (**SCOPUS**). <https://www.springer.com/gp/book/9783030243135#>
11. BS Kumar, BM Kunar, Karuna: Hybrid Bifacial Solar PV Grid-Interconnected Pumping System for Continuous Power Supply in Open Cast Mines Book Chapter, Springer Journal

Conferences/Seminar/Symposia/workshop

1. **Kunar, B.M, Bekalkar M. (2025) Impact on human error, environmental factors, and equipment failure on mine accidents: a case study in India** Participated and presented the paper in virtual mode in the Scientific program Advances in Earth science and climate change Sep 29-30, Oct 01, 2025.
2. BS Kumar, BM Kunar, CSN Murthy: Bifacial Solar PV Systems: A Sustainable Solution for Energy-Intensive Industries IEEE 4th International Conference on Sustainable Energy and Future Electric Transportation (SEFET) (pp. 1-6). IEEE DOI: 10.1109/SEFET61574.2024.10717876 , Jul,2024

3. BS Kumar, BM Kunar, Uppala R: Towards a Greener Extraction : Renewable Energy Initiatives in India ' s Mining Industry 2024 International Conference on Computational Intelligence for Green and Sustainable Technologies (ICCIGST) IEEE DOI:10.1109/ICCIGST60741.2024.10717469 Jul, 2024
4. BS Kumar, BM Kunar, Saida R: Maximizing Power Output: MPPT and Buck-Boost Converter Analysis in PV Applications 2024 International Conference on Computational Intelligence for Green and Sustainable Technologies (ICCIGST) IEEE DOI: 10.1109/ICCIGST60741.2024.10717579 Jul, 2024
5. Bekalkar M., **Kunar, B.M**, Aruna, M., (2023). An Ergonomic Study of Dumper Operators Working in Indian Surface Mines Using Static Biomechanics Approach. Proceedings of Geomintech Symposium on New Equipment New Technology Management and safety in Mines and Mineral Based Industries
6. Balaji Rao K, **Kunar B.M**, Ch. S. N. Murthy (2022) "A Comparative Assessment and Statistical analysis of Ethanol and Acetone Emulsification in Methyl Esters of Pongamia Pinnata Blends" Proceedings of the International Conference on Advances in Energy, Environment for Sustainable Development, 7th to 8th January 2022.
7. Bekalkar M. **Kunar, B.M**, (2021). Postural analysis of road construction workers-a case study, Road Safety workshop, organized by GI Council (GENERAL INSURANCE COUNCIL) on 13.02.2021, National Insurance Building, 5th floor, J. Tata Road, Churchgate, Mumbai 400 020.
8. Ch. S. N. Murthy, **Kunar B M**, (2020) "Recent Advancements in Rock drilling for Improving Safety and Performance" international Webinar on Safe Mining and Advanced Resources Technology-2020, organized by IIT-KGP from 23rd to 16th to 18th Dec 2020.
9. Tejeswaran K M, Ch. S. N. Murthy, **Kunar B.M** (2019) presented & published a research paper " Numerical Simulation and Evaluation of Roof Bolts in Continuous Miner Panel" in Recent Advances in Mining Technology (RAMT 2019) organized by Acharya institute of technology, Bengaluru from 23rd to 24th May 2019.
10. **Kunar B.M** (2019): presented & published a research paper "Safety analysis of Occupational Accidents in Coal Mines- An ANAOVA Approach" in Recent Advances in Mining Technology (RAMT 2019) organized by Acharya institute of technology, Bengaluru from 23rd to 24th May 2019.
11. Vijay Kumar S, **Kunar B.M**, Ch. S. N. Murthy (2019), presented & published a research paper "Temperature Measurement Methods During Rotary Drilling Operations - A Review" in International Conference on Recent Trends in Technology, Engineering and Applied Science (ICRTTEAS 2019), organised by Dr. T. Thimmaiah Institute of Technology, KGF from 12th to 13th April 2019.
12. Tejeswaran K M, Ch. S. N. Murthy, **Kunar B.M**. (2019) presented & published a research paper "Numerical Investigation on Grout Stress of Roof Bolts for Continuous Miner Working" in International Conference on Recent Trends in Technology, Engineering and Applied Science (ICRTTEAS 2019), organised by Dr. T. Thimmaiah Institute of Technology, KGF from 12th to 13th April 2019.
13. **Kunar B.M**, Ch. S. N. Murthy, Balaji Rao K (2019): "Comparison of the Particle Size Distribution in Marble and Granite Rock Samples Subjected to Ball Milling Process", Smart Mining, SME Annual Conference and Expo, CMA 121st National Western Mining Conference, February 24-27, 2019, Denver, Colorado.
14. Balaji Rao K, B. M. Kunar, Ch. S. N. Murthy presented & published a research paper "A Critical Review on Different Biodiesel Blends and their Application in Underground Mining Machineries" in International Conference on Recent Trends in Technology, Engineering and Applied Science (ICRTTEAS 2019), organised by Dr. T. Thimmaiah Institute of Technology, KGF from 12th to 13th April 2019.
15. Vijay Kumar S, **B. M. Kunar**, Ch. S. N. Murthy presented & published a research paper entitled "Temperature measurement during rotary drilling of rocks- A statistical approach", in the International Conference on Emerging Trends in Engineering (ICETE19), organised by University college of Engineering, Osmania University, from 22th to 23th March 2019.
16. Vijay Kumar S, Ch. S. N. Murthy, **B. M. Kunar**, presented & published a research paper entitled "Effect of thermal response on physical properties during drilling operations - a review", in the International Conference on Deep

Excavation, Energy Resources and Production (DEEP16), organised by Department of Mining Engineering at IIT Kharagpur, from 24th to 26th January 2017.

17. Vijay Kumar S, Ch. S. N. Murthy, **B. M. Kunar**, presented & published a research paper entitled “Effect of thermal response on physical properties during drilling operations-A case study”, International conference on emerging trends in Materials and Manufacturing Engineering (IMME-17) organised by Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirappalli, from 10th to 12th March 2017.
18. Vijay Kumar S, Ch. S. N. Murthy, **B. M. Kunar**, presented & published a research paper entitled “Prediction and Measurement Methods of Thermal properties in rock drilling process- A Review”, in the National Conference on Futuristic Advancements in Mechanical Engineering (FAME2K16), organised by Department of Mechanical Engineering at College of Engineering, Thallasery, Kerala, from 8th to 9th August 2016.
19. **Kunar B.M.**, Mudgal Keshav, Gupta Neel, Kumar S., (2012): “Development of a GIS based 3-dimensional spatial information system-A case study”, Proceedings of the 2nd National Seminar on “Indian Conference on Mine Surveying (ICMS-2012)” hosted by Indian School of Mines, 29-30 October, 2012, Dhanbad, pp.101-109.
20. D. Kumar, V. Agarwal, **Kunar B.M.**, (2012): “Study of opencast coal mines for land reclamation using Remote sensing and GIS technique”, Proceedings of the 2nd National Seminar on “Indian Conference on Mine Surveying (ICMS-2012)” hosted by Indian School of Mines, 29-30 October, 2012, Dhanbad, pp.71-77.
21. **Kunar, B.M.**, Bhattacharjee, A., Samanta B, Shahid M., (2011): “Relationships of some individual and work-related factors to lung function disorder of underground coal miners- A Spirometry study” In: Bhattacharjee et al, (Ed.), “Safety in Mines (34th ICSMRI)”, Macmillan, New Delhi, India, pp.785-795.
22. Bhattacharjee, A., **Kunar, B.M.**, Baumann, M., Chau, N., Lorhandicap group (2011): “Associations between Occupational factors and occupational injury and the interplay of personal factors in India and French coal miners” In: Bhattacharjee et al, (Ed.), “Safety in Mines (34th ICSMRI)”, Macmillan, New Delhi, India, pp.481-493.
23. **Kunar, B.M.**, Kumar, P.P., (2011): “Risk assessment and safety evaluation in underground metal mines” Proceedings of the 2nd National Seminar on “Underground Metal Mining: Status and Prospects” hosted by Indian School of Mines, 13-15 October, 2011, Puri, pp.329-335.
24. **Kunar, B.M.**, Shukla G., Bahuguna P.P (2010) “Gradual Development of Total Station into Complete Mine Surveying Instruments” Proceedings of the Tenth Geo-minetech Symposium on “New Equipment New Technology Management and Safety in Mines and Mineral Based Industries” 11-12 May, 2010, Bhubaneswar, The Indian Mining Engineering Journal, pp.136-140.
25. Bhattacharjee, A., **Kunar, B.M.** (2010): “Risk Analysis of Injuries of Coal Miners Using an Epidemiological Approach: A Case-Control Study” Proceedings of the 5th China International Forum on Work Safety, hosted by State Administration of Work Safety (SAWS), P. R. Chin, 1-3 September, 2010, pp.20-27.
26. Bhattacharjee A., **Kunar B.M.**, Chau N., (2009): “Role of working condition, behavioural, lifestyle and health related factors in underground coal miners injuries: A case-control study” Proc 33rd Int Conf on Safety in Mines Research Institutes, organized by Central Mining Research Institute, Poland on 15-18 September 2009, Poland, pp.19-27.
27. **Kunar B.M.**, Bhattacharjee A., (2008): “Role of job hazards, overtime work, and individual habits to underground coal miners injuries-A case study” Proceedings of the National Seminar on “Environmental Management in Mining and Allied Industries (EMMA-2008)” 7-8 Nov, 2008, Varanasi, ITBHU, pp.35-38.
28. **Kunar B.M.**, (2008): “Numerical modeling-based study on development of support plan in depillaring operation of bord and pillar working” Proceedings of the Eighth Geo-minetech Symposium on “New Equipment New Technology Management and Safety in Mines and Mineral Based Industries” 11-12 May, 2008, Bhubaneswar, The Indian Mining Engineering Journal, pp.132-135.

29. **Kunar, B.M.,** Shahid M., Bhattacharjee, A., Samanta B (2008): "A spirometry study of lung disorder for underground coal miners" Proceedings of the Indo-Korean joint International Symposium on "Geo-Science and Technology and Utilization of Geo-Space as Solution for Energy and Environment", 12-14 February, 2008, Kharagpur, Indian Institute of Technology, pp. 70-74.
30. Bhattacharjee, A.,**Kunar, B.M.,** Chau N (2007): "Contribution of physical hazards and health-related factors in occupational injuries of underground coal miners: A matched case-control study", Proceedings of the 32nd International Conference of Safety in Mines Research Institutes (SIMRI), Beijing, China, September 28-29, 2007, SAWS, China, pp.423-430.
31. Bhattacharjee, A.,**Kunar, B.M** (2006): "Analysis of occupational injuries and health disorder of workers in mines: A case study", Proceedings of the 41st Annual Safety Week Souvenir, 2006, Singareni Coal Company limited and Directorate General of Mines Safety, pp. 46-53.
32. Bhattacharjee, A.,**Kunar, B.M.** (2007): "Application of injury epidemiology in coal mines safety" Proceedings of the Emerging trends in mineral industry, 13-15 July, 2007, Mining Engineers' Association of India, Udaipur, Rajasthan, pp. 228-233.
33. Bhattacharjee, A.,**Kunar, B.M.,** Sharan, M.B (2006): "An epidemiological study of coal miners injuries" Proceedings of the First Asian Mining Congress on "Asian Mining –towards a new resurgence, January 16-18, 2006, MGMI, Kolkata, India pp. 473-477.
34. Samanta B, Devulapally P, Bhattacharjee A,**Kunar B.M** (2008): Work related musculo-skeletal disorder study on drilling operations in an underground coal mine through human factors approach, Proceedings of the National Seminar on "Environmental Management in Mining and Allied Industries (EMMA-2008)" 7-8 Nov, 2008, Varanasi, ITBHU, pp.40-44.

Annexture 2: Research Guidance List**PhD level (Ongoing)**

Sl No .	PhD Title	Name of the student	Name of the Guide
1.	Predictive analysis of injuries caused by fatigue among HEMM operators in Indian surface mines	Harsha Vardhan U	Dr. B. M Kunar
2.	Beneficiation of low-grade iron ore using Magnetic Separator (Co-Guide Dr. Shiva Kumar Angadi, Scientist IMMT Bhubaneswar)	Rakesh Behera	Dr. B. M Kunar

Research Guidance at the PhD level (Completed)

Sl No.	PhD Thesis	Name of the Student	Name of the Guide	Year
1.	ASSESSMENT AND EVALUATION OF PONGAMIA PINNATA OIL AS AN ALTERNATIVE FUEL FOR MINE EQUIPMENT	BALAJI RAO K	Dr. B. M. Kunar & Prof. Ch. S. N. Murthy	July, 2023
2.	EXPERIMENTAL INVESTIGATION ON ASSESMENT AND PREDICTION OF TEMPERATURE DURING ROTARY DRILLING	VIJAY KUMARS	Dr. B. M. Kunar & Prof. Ch. S. N. Murthy	Sep, 2020
3.	DESIGN AND DEVELOPMENT OF A NOVEL INVERTER WITH PHOTOVOLTAIC SYSTEM FOR DRILLING OPERATIONS IN MINES	N. V. Pruthvi Krishna	Dr. B. M. Kunar & Prof. Ch. S. N. Murthy (Retd.)	November, 2023
4.	Predictive Assessment of Postural Risk and Biomechanical Analysis of Musculoskeletal Disorder (MSD) Related Problems of Dump Truck Operators in Indian Open Cast Metal Mines	Mohith Bekal Kar (JRF DST-SERB)	Prof. M Aruna & Dr. B. M. Kunar	November, 2024
5	Prediction of Physico-Mechanical properties using grinding characteristics of Ball Mill	Sahas V Swamy	Dr. B. M. Kunar & Prof. K. Ram Chandar	November, 2025
6	A Study on Adaptive modelling Bifacial solar modules and their performance analysis for water pumping applications in mining	Shiva Kumar Bojja	Dr. B. M Kunar & Prof. Ch. S. N. Murthy (Retd.)	November, 2025

M.Tech. (Research) Thesis Guidance on-going

Sl No.	M.Tech Thesis	Name of the Student	Under Guidance	Year
1	Drone Survey Applications in Mining Engineering	Prasant Kumar Sahu	Dr. B M Kunar	On-going
2	Enhancing the functional safety and reliability on HEMM for improved operational efficiency & safety in mining production	Sangram Mallick	Dr. B M Kunar	Examiners Report Received
3	Digitization and Ge-Referencing of Mining Plan by Using Advance Geoinformatics Techniques	Bhavani Shankar Mallick	Dr. B M Kunar	On-going

M.Tech. (Research) Thesis Guidance Completed

Sl No.	M.Tech Thesis	Name of the Student	Under Guidance	Year
1	Assessment And Prediction of Roof Fall in Underground Coal Mines	KANDI SANDEEP REDDY	Dr. B. M. Kunar & Dr.Ch. S. N. Murthy	2017
2	Numerical Simulation and Evaluation of Roof Bolts in Bord and Pillar Panel Working with Continuous Miner Technology	TEJESWARAN K. M.	Dr. Ch. S. N. Murthy & Dr. B. M. Kunar	2019
3	Role of Individual Characteristics, Health Disorder and Contractual Work in Surface Mine Workers Injuries	MANOHAR MAHANTA	Dr. B M Kunar	2025

Annexture 3: Short Term Course/Training Program (On-Going)

Sl. No.	Title	Year	Coordinator	Status
1	Health and Safety & OSHWC Code-2020 in Mines	2026	Dr B.M Kunar & Dr Amrites Senapati	Completed

Short Term Course/Training Program/Sponsored Workshop (Completed)

Sl. No.	Title	Year	Coordinator	Amount Allotted
1	COMPUTER APPLICATION AND DATA ANALYSIS IN MINING AND OTHER CORE INDUSTRIES, 12-16 March 2018 GIAN Course: Sponsored by MHRD	2018	Dr. B. M. Kunar	Rs.5.44 Lakhs
2	SAFETY DATA ANALYTICS APPLICATIONS IN MINING AND OTHER CORE INDUSTRIES SPONSORED BY DST-SERB FROM 06-12 TH MARCH, 2024. HIGH END Workshop Sponsored by SERB	2024	Dr. B. M. Kunar	Rs.5.00 Lakhs
3	INDUSTRIAL SAFETY AND HEALTH. 17-18 OCTOBER, 2022 Sponsored by SERB as SSR Grant	2022	Dr. B. M. Kunar	Rs. 0.50 Lakh
4	Recent Trends in Environment, Health, and Safety Management in Mining and other Core Industries Sponsored by TEQUIP	2017	Dr. B. M. Kunar	Rs. 0.50 Lakh
5	Role of Rock Engineering in Nation Building" by NIRM, Bengaluru & NITK, Surathkal	2023	Dr. B. M. Kunar	

Sponsored R&D Projects (Completed)

Sl. No.	Title	Year	Coordinator	Amount Allotted	Status
1.	Development of a GIS based spatial Information system for ISM campus	2010-2012	Dr. B. M. Kunar	1.0 Lakh	Completed
2.	An Epidemiological study to access individual characteristics and working environment on coalmines injuries	2004-2008	Prof. A. Bhattacharjee Prof M.B. Sharan & Dr. B. M. Kunar	13.0 Lakhs	Completed
3.	Predictive Assessment of Postural and Biomechanical Analysis of Musculo Skeletal Disorders (MSD) Related Problems of dump truck operators in Indian Open Cast Mines	2020	Dr. B. M. Kunar & Prof M. Aruna	Rs. 18.85 Lakhs	Completed

Sponsored R&D Projects Submitted

MTech Thesis Guidance at ISM Dhanbad

SlNo.	M Tech Thesis	Name of the Student	Under guidance	Year
1	COMPARATIVE STUDY OF EVALUATION OF VOLUMETRIC CALCULATION OF EARTHWORK	NAVEEN SOREN	Dr.B.M.Kunar	MAY,2011
2	A STUDY ON TUNNEL BEHAVIOUR UNDER HIGH STRESS CONDITION USING NUMERICAL MODELING	ARVIND KUMAR	Dr.B.M.Kunar	MAY,2011
3	DESIGN OF SUPPORT SYSTEM OF A TUNNEL USING ROCK MASS CLASSIFICATION APPROACH	SUBODH KUMAR	Dr.B.M.Kunar	MAY,2012
4	MAPPING OF GROUNDWATER PROSPECTIVE ZONES OF DHANBAD DISTRICT USING REMOTE SENSING TECHNIQUES AND GIS	ALOK SINGH	Dr.B.M.Kunar & Dr.V.K.SINGH	MAY,2013
5	STUDY AND ANALYSIS OF OPEN PIT SLOPES OF COAL MINES	UTPAL KANT	Dr.B.M.Kunar	MAY,2011
6	IDENTIFICATION AND STUDY OF LAND USE PATTERN IN JHARIA COAL FIELD REGION	MANAMOHAN ROUT	Dr.B.M.Kunar & Dr.P.P.Bahuguna	MAY,2010
7	DEVELOPMENT OF A GEOSPATIAL INFORMATION SYSTEM OF RESIDENTIAL AREA OF ISM CAMPUS DHANBAD	SATISH CHANDRA	Dr.B.M.Kunar & Dr.Dheeraj Kumar	MAY,2011
8	DEVELOPMENT OF GIS BASED SPATIAL INFORMATION SYSTEM OF ACADEMIC AND SERVICE AREA OF CAMPUS	RAJESH KUMAR SINGH	Dr.B.M.Kun & Dr.M.Shashi	MAY,2011

Annexture 4: Major Consultancy Projects Completed at (ISM Dhanbad)

Funding agency	Title of the consultancy work	status	Cost of the project (Rs.)
M/S BCCL Limited	Monitoring of Dump Slopes for Stability Assessment at KKT-2 Open cast mine for C-farm	Completed	19,01,477.00
M/S BCCL Limited	Conversion of mine plan of Chanala and Tasara Colliery	Completed	03,87,642.00
M/s Monnet Ispat and Energy Ltd.,	Check survey of Milupura and Kondekal underground Mines of M/s Monnet Ispat and Energy Ltd., MEIL, raigarh	Completed	08,34,20.00
M/s Essar Industries	Land subsidence study at Essar Raniganj CBM Block at Durgapur	Completed	23,46,917.00
M/S BCCL Limited	Surface survey of Bhutgoria colliery and preparation of Surface plan	Completed	21,49,699.00