

# Faculty Profile

**Name:** Dr. Harinandan Kumar

**Designation:** Assistant Professor

**Teaching Area:** Mining Engineering



**Research Interest:** Rock Mechanics, Soil Mechanics, Reservoir Engineering, Coal Bed Methane Production Technology, Fluid Mechanics, Thermal Engineering, Strength of Material

**Experience (In Years):** Teaching: 9 Years; Research: 04 Years

**Academic qualifications:** Ph.D. (2018; NIT Rourkela), B.E.

## Major Research Publications / Presentation:

### Publications in International Journal

1. **Harinandan Kumar (First and Corresponding Author)**, S. Ravi Kumar “An approach to CO<sub>2</sub> capture technology for Mitigating Global Warming and Climatic Change - An Overview”, DOI: 10.1109/RSTSCC.2010.5712870, IEEE Explore, pp. 364-371, 2010. (**Scopus Indexed**), **Citation 10**, DOI: 10.1109/RSTSCC.2010.5712870
2. **Harinandan Kumar (First and Corresponding Author)**, Susmita Mishra, M. K. Mishra, A. Parida, “Petrographic Characteristics of Bituminous Coal from Jharia Coalfield India: It’s Implication on Coal Bed Methane Potentially” Procedia Earth and Planetary Science, Science Direct, Vol. 11, pp. 38-48, 2015. (**Scopus Indexed**), **Citation 18**, <https://doi.org/10.1016/j.proeps.2015.06.006>
3. **Harinandan Kumar (First and Corresponding Author)** and M. K. Mishra, “Optimization and Evaluation of Fly Ash Composite Properties for Geotechnical Application” Arab. Journal of Geo-science, Vol. 8, pp. 3713-3726, 2015. **ISSN 1866-7538**, **Citation 11**, <https://doi.org/10.1007/s12517-014-1502-z>
4. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, and S. Mishra, “3D Modelling of Coal Deformation under Fluid Pressure using COMSOL Multiphysics”, Journal of Engineering Science and Technology Review. Vol. 10, pp. 62-69, 2018. (**Scopus Indexed**, **Q4**), **ISSN: 1791-2377**, **Citation 1**, doi:10.25103/jestr.106.09
5. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, and S. Mishra, “Laboratory Investigation of Gas Permeability and its Impact on CBM Potential”, Journal of Petroleum Exploration and Production Technology, Springer, Vol. 8, pp. 1183-1197, 2018. (**SCI Indexed**, **Q2**) (**Citation 11**) **Impact Factor: 2.508**, <https://doi.org/10.1007/s13202-017-0425-0>
6. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, and S. Mishra, “Effect of Permeability and Geo-mechanical Properties on Coal Matrix During CBM Production – An Overview”, Journal of Engineering Science and Technology Review, Vol. 11, pp. 160-173, 2018. (**Scopus Indexed**, **Q4**), **ISSN: 1791-2377**, **Citation 10**, doi:10.25103/jestr.112.22
7. M. Muralidhar Singh, K. V. Nagesha, T. M. Gurubasavaraju; **Kumar Harinandan**; K. M. Ajay; G. Vijaya, “Evaluation of Mechanical Properties of Polymer Composites Profiles for Marine Applications”, Grenze International Journal of Engineering & Technology, Vol. 4, pp. 343-347, 2018.
8. M. Muralidhar Singh, **Harinandan Kumar (Corresponding Author)**, G. Hemath Kumar, P. Sivaiah, K. V. Nagesha, K. M. Ajay, G. Vijaya, “Determination of Strength Parameters of Glass Fibers Reinforced Composites for Engineering Applications”, Silicon, Vol. 12(1), pp. 1-11, 2019. (**SCI Indexed**, **Q2**) **Impact Factor: 3.4**, **ISSN 1876-9918**, **Citation 21**, <https://doi.org/10.1007/s12633-019-0078-3>

9. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, and S. Mishra, "Sorption capacity of Indian coal and its variation with rank parameters", Journal of Petroleum Exploration and Production Technology, Vol. 9, pp. 2175-2184, 2019. (SCI Indexed, Q2) **Impact Factor: 2.2, ISSN 2190-0566, (Citation 6), DOI:10.1007/s13202-019-0621-1**
10. Muralidhar Singh M., **Harinandan Kumar (Corresponding Author)**, G. Hemath Kumar, P. Sivaiah, K. V. Nagesha, Ajay K M, Vijaya G, "Evaluation of Multilayer Thin Film Coatings for Solar Thermal Applications", Arabian Journal for Science and Engineering. Vol. 44, pp. 7789-7797, 2019. (SCI Indexed, Q1) **Impact Factor: 2.9, ISSN 2191-4281, Citation 5, DOI:10.1007/s13369-019-03904-9**
11. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, and S. Mishra, "Experimental and numerical evaluation of CBM potential in Jharia Coalfield India", Geomechanics and Geophysics for Geo-Energy and Geo-Resources, Vol. 5 (3), pp. 289-314, 2019. (SCI Indexed, Q1), **Impact Factor: 5.0, ISSN 2363-8427, Citation 15, DOI:10.1007/s40948-019-00114-3**
12. K. V. Nagesha, **Harinandan Kumar (Corresponding Author)**, M. Muralidhar Singh, "Development of statistical models to predict Emission rate and Concentration of Particulate Matters (Pm) for drilling operation in opencast mines", Journal of Air Quality, Atmosphere & Health, Vol. 12, pp. 1073-1079, 2019. (SCI Indexed, Q2) **(Citation 7) Impact Factor: 5.1, ISSN 1873-9326, Citation 9, DOI:10.1007/s11869-019-00723-7**
13. Upendra Singh Yadav, **Harinandan Kumar (Corresponding Author)**, Vishnu Roy, Saurabh Juyal, Anurag Tripathi, Anveshika Shanker, "Experimental evaluation of partially hydrolyzed polyacrylamide and silica nanoparticles solutions for enhanced oil recovery", Journal of Petroleum Exploration and Production Technology, Vol. 10, pp. 1109-1114, 2019, (SCI Indexed, Q2) **(Citation 8) Impact Factor: 2.2, ISSN 2190-0566, Citation 12, DOI:10.1007/s13202-019-00749-8**
14. **Harinandan Kumar (First and Corresponding Author)**, Upendra Singh Yadav, Subhash Kumar, Kishan Kumar, Ravi Yadav, Anveshika Shanker, Anurag Tripathi, Gitiksha Khandelwal, "Comparative study of coal rocks compressive behaviors and failure criteria", Arabian Journal of Geosciences, Vol. 12(23), pp. 710, 2019. **ISSN 1866-7538, Citation 7, DOI:10.1007/s12517-019-4914-y**
15. P Sivaiah, Venkata Ajay Kumar G, Muralidhar Singh M, **Harinandan Kumar**, "Effect of novel hybrid texture tool on turning process performance in MQL machining of Inconel 718 superalloy", Journal of Materials and Manufacturing Processes, Vol. 35, pp 61-71, 2019. (SCI Indexed, Q1), **Impact Factor: 4.8, ISSN: 1532-2475, Citation 68, <https://doi.org/10.1080/10426914.2019.1697444>**
16. Upendra Singh Yadav, **Harinandan Kumar (Corresponding Author)**, Vikas Mahto, "Experimental investigation of partially hydrolyzed polyacrylamide-hexamine-pyrocatechol polymer gel for permeability modification", Journal of Sol-Gel Science and Technology, Vol. 94, pp. 335-346, 2020. (SCI Indexed, Q2), **Impact Factor: 2.5, ISSN 1573-4846, Citation 11, DOI:10.1007/s10971-020-05248-5**
17. Koneti Nagesha, **Harinandan Kumar (Corresponding Author)**, Muralidhar Munisingh, "Influence of rock properties on emission rate of Particulates Matter (Pm) during drilling operation in surface mines", Iranian Journal of Earth Sciences, Vol. 13, pp. 14-20, 2020. (Scopus Indexed, Q2) **Impact Factor: 0.8, ISSN 2008-8779, Citation 1, 10.30495/IJES.2021.677471**
18. Muralidhar Munisingh M., **Harinandan Kumar (Corresponding Author)**, P. Sivaiah, "Alumina Thin film Coatings at Optimized Conditions using RF Magnetron Sputtering Process", International Journal of Thin Films Science and Technology, Vol. 10, pp. 13-30, 2020. (SCOPUS Indexed) **Impact Factor: 0.15, ISSN 2090-9519, doi:10.18576/ijtfst/100103**
19. **Harinandan Kumar (First and Corresponding Author)**, Muralidhar Munisingh M., P. Sivaiah, "Characterization of Aluminium and Alumina Thin Films Coatings using different Deposition Methods for Enhancement of Optical Properties", International Journal of Materials Engineering Innovation, Vol. 12, pp. 165-187, 2021. (Scopus Indexed, Q4) **Impact Factor: 0.9. ISSN 1757-2762, DOI: 10.1504/IJMATEI.2021.10039979**
20. Prashant Saini, **Harinandan Kumar (Corresponding Author)**, Tarun Gaur, "Cement bond evaluation using well logs: A case study in Raniganj Block Durgapur, West Bengal, India", Journal of Petroleum Exploration and Production Technology, Vol. 11, pp. 1743-1749, 2021. (SCI Indexed, Q2) **Impact Factor: 2.2, (Citation 2). ISSN 2190-0566, Citation 5, DOI <https://doi.org/10.1007/s13202-021-01151-z>**
21. **Harinandan Kumar (First and Corresponding Author)**, M. K. Mishra, S. Mishra, Muralidhar Singh M., D. K. Srivastava, "Determination of Methane Sorption Capacity using microstructural analysis in coal of Jharia Coalfield, India", Arabian Journal of Geosciences, Vol. 14, pp. 690, 2021. **ISSN 1866-7538, Citation 6, DOI:10.1007/s12517-021-07051-0**

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22. Nirlipta Priyadarshini Nayak, **Harinandan Kumar (Corresponding Author)**, Shivani Bhist, “Application of Hydraulic Flow Unit for Prediction of Flow Zone in Carbonate Reservoir”, Arabian Journal of Geosciences. Vol. 14, pp. 677, 2021. **ISSN 1866-7538, Citation 1, DOI** <https://doi.org/10.1007/s12517-021-07052-z>
23. Muralidhar Munisingh M., **Harinandan Kumar (Corresponding Author)**, P. Sivaiah, “Evaluation of Mechanical Properties of Glass Fiber-BMPM/DABAPMC Composite”, Transactions of the Indian Institute of Metals, Vol. 74, pp. 2185–2192, 2021. **(SCI Indexed, Q2) Impact Factor: 1.6, ISSN 0975-1645, DOI:10.1007/s12666-021-02314-6**
24. **Harinandan Kumar (First and Corresponding Author)**, “An overview of characterization and sorption capacity of coal for CO<sub>2</sub> sequestration”, Arabian Journal of Geosciences, Vol. 15, pp. 1364, 2022. **ISSN 1866-7538, Citation 3, <https://doi.org/10.1007/s12517-022-10641-1>**
25. **Harinandan Kumar**, Shweta Rai, Ankita Rai, Atif Faheem, Amiya Shankar Naik, Pramod Kumar Rajak, Dilip Kumar Srivastava, Deepak Singh Maurya, Don Chatterjee & Prakash K. Singh “Characterization of composite coal seam III–IV of Ramagundam coalfield, Godavari Basin (India): an attempt to evaluate CBM prospects”, Arabian Journal of Geosciences, Vol. 15, pp. 1400, 2022., **ISSN 1866-7538, <https://doi.org/10.1007/s12517-022-10681-7>**
26. Nirlipta Priyadarshini Nayak, **Harinandan Kumar (Corresponding Author)**, Suhel Ahmed, “Study of Development Cycle of down ramp in Underground Metal Mine”, Iranian Journal of Earth Sciences, 2023. **(SCOPUS Indexed, Q2) Impact Factor: 0.8, ISSN 2008-8779, 10.30495/ijes.2022.1955510.1739**
27. Sankari Hazarika, Annapurna Boruah, Harinandan Kumar, “Study of pore structure of shale formation for CO<sub>2</sub> storage”, Materials Today: Proceedings, 2023. **(SCOPUS Indexed, Q2), Impact Factor 24.2, ISSN: 1873-4103, Citation 3, <https://doi.org/10.1016/j.matpr.2023.06.014>**
28. **Harinandan Kumar (First and Corresponding Author)**, “Effect of sorption isotherm on CO<sub>2</sub> storage capacity in Indian coal seam”, Arabian Journal of Geosciences, Vol. 16, Article number: 75, 2023. **ISSN 1866-7538, Citation 2, <https://doi.org/10.1007/s12517-022-11167-2>**
29. **Harinandan Kumar (First and Corresponding Author)**, Nirlipta Priyadarshini Nayak, Ashish Aggarwal & M. Muralidhar Singh, “Geomechanical characteristics and failure analysis of the limestone slope at Sahastradhara–Chamasari road Dehradun Uttarakhand India”, Innovative Infrastructure Solutions, Vol. 8, Article number: 253, 2023. **(SCOPUS Indexed, Q2) Impact factor 2.4, ISSN 2364-4184, <https://doi.org/10.1007/s41062-023-01214-6>**
30. **Harinandan Kumar (First and Corresponding Author)**, Muralidhar Singh Munisingh, “Development and Characterization of Fly Ash-BFS-Cement Composite for Engineering Applications”, Journal of Pavement Research and Technology, 2024. **(SCOPUS Indexed, Q2) Impact factor 3, ISSN 1997-1400, <https://doi.org/10.1007/s42947-024-00439-7>**
31. Sankari Hazarika, Annapurna Boruah, Ramen Das, **Harinandan Kumar**, “Characterizing Barail shale rock for CO<sub>2</sub> storage potential in the Assam Arakan Basin, India”, Petroleum Science and Technology, pp. 1–22, 2025. **(SCIE Indexed, Q3) Impact factor 1.3, ISSN 1091-6466, <https://doi.org/10.1080/10916466.2025.2464028>**
32. **Harinandan Kumar (First and Corresponding Author)**, Mandira Agarwal, Siddiqui Mohammad Saadat, “Numerical Modelling for Microfracture Treatment in Unconventional Reservoir based on Fluid Injection”, Iranian Journal of Earth Sciences, Accepted, 2025. **(SCOPUS Indexed, Q2) Impact Factor: 0.8, ISSN 2008-8779.**

## International Conference (published)

1. **Harinandan Kumar**, S. Mishra, and M. K. Mishra, “Experimental Evaluation of Geo-mechanical properties of Coal using Sonic Wave Velocity”, International Conference on Advances in Agricultural, Biological & Environmental Sciences, July 22 - 23, London (UK), 2015. **[Best Paper Award] (Citation 7)**
2. **Harinandan Kumar**, S. Ravi Kumar, “Keep Working after Sundown by Energy Storage from Solar Power - An Overview”, International Conference, GTEC – 2011, 15-17 Dec 2011. **[Best Paper Award]**

## National Conference (Presented/Published)

1. **Harinandan Kumar**, S. Ravi Kumar, “An Innovative Approach to Save Energy in Converting Solar Power to Hydrogen Fuel” National Conference on Trend in Renewable Energy Sources, Applications & Climatic Change, July 23 - 25, 2010. **[Best Paper Award]**
2. **Harinandan Kumar**, S. Ravi Kumar, “A review of FSW Mechanical Property Study of Aluminum Based Composite”, Aagma - 10, NLTPC, Sept. 17 - 18, 2010. **[Best Paper Award]**

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3. **rinandan Kumar**, M. K. Mishra, S. Mishra, K. T. Parida, "Petrographic and Dynamic behaviour of coal for CBM production in Jharia coal field", National Seminar on Recent Practices and Innovations in Mining Industry, NIT Raipur, Feb 19 - 20, 2016.
4. **rinandan Kumar**, "Review of Experimental studies on Heat Transfer Augmentation", National Conference on Development in Mechanical Engineering – An Impact on Ecology and Environment, March 09 - 10, 2013.
5. **rinandan Kumar**, "Nitinol: A Smart Material of Advance Technology", National Conference on Development in Mechanical Engineering – An Impact on Ecology and Environment, March 09 - 10, 2013.
6. **Harinandan Kumar**, "Effect of Process parameter of Friction Stir Welding on Macro and Microstructure of dissimilar material – An Overview", National Conference on Process and Characterization of Materials, Dec. 07 - 08, 2012.
7. **rinandan Kumar**, S. Ravikumar, "Metallurgical study in Friction Stir Welding for Aluminum Alloy – An Overview", National Conference on Recent Trend in Manufacturing and Industrial Engineering, April 09 - 10, 2010.
8. **Harinandan Kumar**, S. Ravikumar, "A review of FSW microstructure studies on dissimilar Aluminum Alloys", National Conference on Emerging Trend in Mechanical Engineering, August 09 - 10, 2010.
9. **Harinandan Kumar**, M. K. Mishra, S. Mishra, "Laboratory Investigation of Gas Permeability and its impact on CBM Production", National Conference on Waste to Energy, Carbon Capture and Storage, August 03 - 05, 2017.
10. **Harinandan Kumar**, Mandira Agarwal, Nachiket Parate, Ebin Thomas Joseph, "Evaluation of CBM Prospects in Singareni Coal Field India", International Conference on Material for Energy Storage and Conservation (MESC 2022), August 23 - 24, 2022.

## PATENT/DESIGN GRANTED

Si. No.	Name of the Author, and Designation	Title of the patent	Patent No.	Date of filing	Indian/ International patent	Author status 1st/ 2nd Author	Date of Grant	Status
01	Harinandan Kumar	Utilization of Waste Poly Ethylene Bags and Fly Ash for Engineering Application	356746	11/05/2018	Indian Patent	Sole Inventor	27/01/2021	Granted
02	Harinandan Kumar	New Design of Portable and Detachable Vice for Engineering Application	Application Number: 320476-001 Cbr Number: 14969	07/08/2019	Indian Patent	Sole Inventor	05/02/2021	Granted
03	Harinandan Kumar	Apparatus for determining time dependent deformation as well as fracture propagation of different rock specimens at variable temperature and environmental conditions	438782	12/02/2019	Indian Patent	Sole Inventor	13/07/2023	Granted
04	Harinandan Kumar	Cutting device for cutting tubular work pieces	457705	30/08/2019	Indian Patent	Sole Inventor	09/10/2023	Granted
05	Harinandan Kumar	Low cost creep testing machine with variable temperature and environmental and environmental conditions for composite material (pmmc)	505166	26/12/2017	Indian Patent	Sole Inventor	30/01/2024	Granted

## BOOK CHAPTER PUBLISHED

Mohit Hemath, Arul Mozhi Selvan Varadhappan, Hemath Kumar Govindarajulu, Sanjay Mavinkere Rangappa, Suchart Siengchin, **Harinandan Kumar**, "Mechanical and Physical Test of Hybrid Fiber Composites", Hybrid Fiber Composites: Materials, Manufacturing, Process Engineering, Print ISBN:9783527346721, Online ISBN:9783527824571, DOI:10.1002/9783527824571, Publisher Wiley, Published on 03 July 2020.

## ACADEMIC IDENTITY

1. Vidwan-ID: 96793
2. **Vidwan Score: 10**

# Faculty Profile

## PROFESSIONAL MEMBERSHIP

- Editorial Board Member of “Journal of Autonomous Intelligence”, 21 Serangoon North Avenue 5, #03-03 Ban Teck Han Building, Singapore (554864)
- Editorial Board Member of “Journal of Geological Research”, Bilingual Publishing Co., Singapore
- Editorial Board Member of “BOHR International Journal of Civil Engineering and Environmental Science (BIJCEES)”, BOHR Publishers, Plot No 2, 1st Floor, 8th Main Road, Ram Nagar, Velachery, Chennai - 600042, Tamil Nadu, India
- Reviewer of “Iranian Journal of Earth Science”, Department of Geology, Faculty of Science, Islamic Azad University, 7th Elahiyeh Ave, Mashhad Branch, Mashhad, Iran.

## REVIEWER OF RESEARCH PAPER IN INTERNATIONAL JOURNAL

- International Journal of SN Applied Sciences, Powered by Springer
- Arabian Journal of Geoscience, Powered by Springer
- Journal of Visualized Experiments, SCI and SCOPUS Indexed, Powered by Springer
- Iranian Polymer Journal, SCI and SCOPUS Indexed, Powered by Springer
- Journal of Geological Research
- Iranian Journal of Earth Sciences, SCOPUS Indexed
- Geotechnical and Geological Engineering, SCOPUS Indexed, Powered by Springer
- Greenhouse Gases: Science and Technology, SCI and SCOPUS Indexed, Powered by Wiley

## ADMINISTRATIVE RESPONSIBILITY

- Course Coordinator of UG Students
- Activity coordinator of UG Students
- Member of University Research Core Committee
- DRC Member
- Laboratory In charge
- NAAC Accreditation Process
- Students Placement Support
- Students Internship Support

## SUBJECTS HANDLED

- Engineering Mechanics (B.Tech Course+ M.Tech Course)
- Advanced Strength of Materials (B.Tech + M.Tech Course)
- Mechanical behavior of Engineering Materials (B.Tech + M.Tech Course)
- Rock Mechanics (B.Tech + M.Tech Course)
- Material Handling Systems (B.Tech + M.Tech Course)
- Soil Mechanics (B.Tech + M.Tech Course)
- Engineering Stress Analysis (B.Tech + M.Tech Course)
- Theory of Metal cutting and Tool Design (B.Tech + M.Tech Course)
- Finite Element Method (B.Tech + M.Tech Course)
- Introduction to Composites (B.Tech + M.Tech Course)

## SOFTWARE HANDLED

- AutoCAD (B.Tech Course)
- Creo-3.0 (B.Tech + M.Tech Course)
- Catia (B.Tech + M.Tech Course)
- Ansys (B.Tech + M.Tech Course)
- Comsol (B.Tech + M.Tech Course)
- Solid Work (B.Tech + M.Tech Course)
- GEM Reservoir Simulation (B.Tech + M.Tech Course)
- Design Xpert (B.Tech + M.Tech Course)
- LISA (B.Tech + M.Tech Course)
- Google Sketch up (B.Tech + M.Tech Course)

## STUDENTS GUIDED

Programme	Department	No. of Students	Year
Ph. D.	Petroleum Engineering	1 (ongoing)	2022
Programme	Department	No. of Students	Year
M.Tech.	Petroleum Engineering	1	2021
	Petroleum Engineering	2	2022
	Petroleum Engineering	1	2023

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	Petroleum Engineering	1	2024
<b>Programme</b>	<b>Department</b>	<b>No. of Students</b>	<b>Year</b>
B.Tech.	Mechanical Engineering	5	2018
	Mining Engineering	8	
	Geo Science Engineering	12	
	Mining Engineering	16	2019
	Petroleum Engineering	18	
	Mining Engineering	12	2020
	Petroleum Engineering	8	
	Petroleum Engineering	18	2021
	Mining Engineering	6	
	Petroleum Engineering	20	2022
M.Sc.	Petroleum Engineering	22	2023
	Petroleum Engineering	30	2024
	Petroleum Engineering	10	2025
<b>Programme</b>	<b>Department</b>	<b>No. of Students</b>	<b>Year</b>
B.Sc.	Petroleum Geoscience	6	2022
	Petroleum Geoscience	6	2023
	Petroleum Geoscience	2	2024
	Petroleum Geoscience	3	2025
<b>Programme</b>	<b>Department</b>	<b>No. of Students</b>	<b>Year</b>
B.Sc.	Geology	4	2024

## WORKSHOP/SEMINAR/TRAINING PROGRAMME

- One-day workshop on *New Materials and Applications* at Sathyabama University, Chennai, September 2010.
- One-day workshop on *Trends in Material Joining Technologies* at Sathyabama University, Chennai, September 2011.
- Three days' workshop on *design of experiment: An optimization tool* at National Institute of Technology, Rourkela, December 2013.
- Three days' workshop on *Multi-objective Optimization methods and Applications in Manufacturing* at National Institute of Technology, Rourkela, June 2014.
- Two days' workshop on *Aesthetics of Scientific Documentation* at National Institute of Technology, Rourkela, July 2014.
- Five days Executive Training Programme on *Best Practice in Coalbed Methane Exploration and Production (ETP: CBM E&P 2010)* at Central Institute of Mining and Fuel Research, Dhanbad, Jan. 9-13, 2017.
- Three days Exhibition on *Research Scholars' Week* at National Institute of Technology, Rourkela, Feb. 21-23, 2017.
- Three days Faculty Development Program on *Outcome Based Education (OBE)* at School of Engineering, UPES Dehradun, May 25-27, 2020.

## PATENTS PUBLISHED

Si. No.	Name of the Author, and Designation	Title of the patent	Application No.	Date of filing	Indian/ International patent	Author status	Remarks	Status
01	Harinandan Kumar	Development of New Thermal Absorber Coatings for Enhanced Solar Application	201841005118 A	12/02/2018	Indian Patent	Co-Inventor	Published on 16/02/2018	Under Examination