

CURRICULUM VITAE

Dr. Ajit Kumar

Assistant Professor, Dept. of Mining Machinery Engineering
Indian Institute of Technology (ISM) Dhanbad, India
Ph. D. (Specialization: **Fluid Power Systems and Control**)
M. Tech (**Mining Machinery Engineering**)
B. Tech (**Mechanical Engineering**)
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EXPERIENCE (including present position/ employment)

Designation	Employer	Period of Experience			Responsibility
		From	To	Total years of experience	
Assistant Professor	IIT (ISM) Dhanbad	01.04.2013	Till date	-	Teaching & Research
Management Technical Trainee	Millupara U/G Coal Mine, MIEL, Raigarh (India)	20.09.2012	31.03.2013	6 Months & 11 Days	Acting Assistant Manager (LHD, Haulage & Pump In-charge)

ACADEMIC SUMMARY

Degree	Name of the Course Passed/ Discipline	University	Year	Percentage of marks obtained/ OGPA/CGPA & Class
Ph. D.	Fluid Power Technology and Control	IIT (ISM) Dhanbad	2020	NA
M. Tech	Mining Machinery Engineering	IIT (ISM) Dhanbad	2012	8.36 (10 point scale) (First class)
B. Tech	Mechanical Engineering	Ranchi University	2010	8.5 (10 point scale) (First class with distinction)

Research Activities:

- Design and analysis of mining equipment for their optimum use in coal mining applications.
- Novel design of the hydraulic system for the simultaneous operation of the CRD drive and hydraulic power steering system of an LHD machine.
- Performance Investigation of the decay characteristics of a hydraulic accumulator using pump loading system and its workflow modelling.
- Design and development of an energy efficient steering system used in off-road vehicles.

EXTERNAL EXAMINER & INVITED LECTURES

- Delivered lecture as an **Invited Speaker** in the International Webinar on “Safe Mining and Advanced Resources Technology-2020 (SMART-2020)” organized by IIT Kharagpur held during 16th-18th December, 2020.
- Delivered **Keynote Lecture** on “Kineto-Dynamic Modeling and Analysis of Hydraulic Power Steering System” in International conference on "Present Scenario of Technology and Sciences" (PSTS-2020) held during 8th -9th August, 2020.
- Appointed as **External Examiner** for viva-voce (B. Tech, Mechanical) at SIT, Aurangabad on 19.06.2015-20.06.2015 and 23.01.2016 -24-01.2016.

AWARDS

- Awarded **Young Faculty Award 2020** for outstanding contribution in the field of teaching & research by Centre for Education Growth and Research (CEGR) during Jharkhand Education Summit held on 22.10.2020.
- Awarded **I2OR-Bright Researcher Award 2018** by The International Institute of Organized Research for remarkable contribution in the field of fluid power technology & control and design of machine elements.
- Awarded **IEI Jharkhand Engineering Excellence Awards (Teaching & Research Area)** by Jharkhand State Centre of The Institution of Engineers (India) on 10.11.2018 during 58th AGM of IEI, JSC.
- Awarded **Best Young Scientist 2018** from the Prestigious Resbee Award 2018 for remarkable achievements in Research and Publications. The award is granted in recognition of a researcher's entire achievements to date to academics whose fundamental discoveries, new theories, or insights have had a significant impact on their own discipline and who are proved their cutting-edge publications through the international conferences, journals, books and patents.
- Awarded **Er. M. P. Baya National Award – 2018** by The Institution of Engineers (India), Udaipur Local Centre for the year 2018 for outstanding contribution for Technology Advancement in the field of Mechanical Engineering. The award was given on 15.09.2018 at the premises of the Institution of Engineers (India), Udaipur Local Centre.
- Awarded **Young Researcher-Republic Day Achievers' Award 2017** hosted by IIR Group on 18.01.2018 at LICET Auditorium, Chennai. The award was given by the Vice-Chancellor of Pondicherry University of Science & Technology. The award recognizes his outstanding best practices and contribution in the field of education and research.
- Awarded **Best Research Paper Award (Engineers' Day Awards – 2017)** for the year 2017 for the papers published in the last two years in peer reviewed journals by the Jharkhand State Centre of The Institution of Engineers (India). The award was given on 15.09.2017 at Engineer Bhawan, Ranchi on the occasion of 50th Engineers' Day Celebration.

R&D PROJECTS (Research funding from external agencies)

Sl. No.	Name of PI/CO-PI	Sponsoring Authority	Topic/Field	Date of Sanction	Remarks
01.	Niranjan Kumar (PI) Ajit Kumar (Co-PI)	CMPDI)Under R&D Grant of Ministry of Coal (MoC)	Development of “Energy Efficient Ergonomically Designed (EEED) Chair Lift Man Riding System”	28.07.2021	Ongoing

02.	S. S. Rai (PI) Ajit Kumar (Co-PI) Shikha Singh (Co-PI)	TexMin, TIH	Development of predictive maintenance solutions for modern dragline system of Coal India Limited	13.05.2021	Ongoing
03.	Sanjay Kr Singh (Co-PI) Ajit Kumar (External Co-PI) Niranjan Kumar (External Co-PI)	TEQIP III NPIU (Collaborative Research Scheme)	Design and development of a solar-powered hydraulically boosted three-wheeled passenger vehicle	18.06.2019	Ongoing
04.	Prof. K. Dasgupta (PI) Dr. N. Kumar (Co-PI) Dr. J. Das (Co-PI) Ajit Kumar (Member, Project Implementation Group)	DST-FIST	Fund for Improvement of S&T, FIST 2018	28.03.2018	Ongoing
05.	Ajit Kumar (PI)	TEQIP –II	Improving Energy Efficiency by Analysis of Potential Energy Regeneration in Hydraulic System of Heavy Duty Vehicles	09.11.2015	Completed

FOREIGN CONFERENCE PARTICIPATION

- Participated and presented research paper titled ‘Performance Investigation of a Hydro-pneumatic type Accumulator used in a Hydrostatic Drive System of Off-road Vehicles’ in *11th International Fluid Power Conference (IFK 2018)* held at RWTH Aachen University, Aachen, Germany during March 19 – 21’ 2018.

TRAINING DETAILS

- One week training (18.12.2016 to 24.12.2016) at NLC, India to study the operation & maintenance of BWE, Belt conveyor system and pumping system.
- One month training (20.05.2016 to 15.06.2016) at SECL, Gevera, CIL to study the operation & maintenance of various opencast mining machines.
- Two months Internship Training (16.05-2011 to 02.07.2011) in an Austrian Company Rockster Recycler India Pvt. Ltd. On “**Evolution of hard rock cutting Surface Miner – An approach to synchronize different hard rock cutting tools and In-pit crushing.**” Technology here to be developed for hard rock cutting and crushing by the combination system of splitting, rock breaker and FAE in-situ crusher and track mounted mobile crusher for secondary crushing to produce

aggregates. During the internship program, I have dealt with the Bulk Material Handling equipments. There I also submitted a project report on operation and installation of Belt Conveyor System and on types, working principles and operation of surface miners & In-pit crushing systems.

- Two weeks training (06.12.2010 to 18.12.2010) in surface & underground equipments in Moonidih Project, Bharat Coking Coal Ltd, Dhanbad, India.
- One month training (29.12.2009 to 29.01.2010) in TATA-YODOGAWA ROLLS (TAYO ROLLS - A TATA ENTERPRISE), Jamshedpur. TAYO ROLLS is a joint venture of TATA & YODOGAWA STEEL OF JAPAN. In plant, I have gone through all the processes involving the production process of rolls and use of CNC MACHINE TOOLS and submitted a project report on **“THE PRODUCTION PROCESS OF ROLLS & STUDY OF CNC MACHINES AT TAYO ROLLS”**.

EXCURSIONS & FIELD VISIT

- Three day visit to Mine No. 1, WCL, Nagpur, CIL to study the operation & maintenance of various U/G machines.
- One day visit to Jhanjhara Project of ECL, Burdwan, West-Bengal to study the operation & maintenance of Continuous Miner.
- One day visit to Block-II open cast project of BCCL, Dhanbad to study the operation & maintenance of Dragline Machine, Shovel, Drill Machine operating in the Mine
- Visit to several other mines and industries like WCL, SECL, Madras Cement Ltd., India Cement Ltd., Central Workshops to study the operation & maintenance of Dragline Machine, Shovel, Drill Machine and various other machines operating in the Mine.

TEACHING, LEARNING & EVALUATION RELATED ACTIVITIES

- **Involvement in teaching for International Students**
 1. Special theory and practical classes conducted during the training program on “Maintenance of Mining equipment for executives of Afghanistan”. Practical classes were also taken for the same.
 2. Extra classes for the students of Afghan (B. E. Course) were taken during the regular semesters for the session 2014-2015.
- **Number of subjects taken during the assessment period with the feedback score**
 1. Engineering Mechanics
 2. Engineering Graphics
 3. Advanced Design of Machine Elements
 4. Strength of Materials
 5. Engineering Fluid Mechanics
 6. Mineral Processing Equipment
 7. Underground Mining Equipment
- **Involvement in Laboratory development**
 1. Strength of Materials Lab
 2. Engineering Fluid Mechanics Lab
 3. **Material Handling Lab (Lab In-charge)**
 4. Mining Machinery Lab
 5. Engineering Graphics Lab
- **Involvement in development of Experiments in the laboratory**
 1. Introduced – Determination of Breaking Strength of Steel Wire Ropes.
 2. Introduced – White Metal Recapping of Steel Wire Ropes.

UG/PG PROJECT GUIDANCE

- No. of UG (B. Tech) Project Guidance - **14 B. Tech Project Thesis Supervised & 06 ongoing.**
- No. of PG (M. TECH) Project Guidance - **07 M. Tech Project Thesis Supervised & 02 ongoing.**

RESEARCH PAPERS PUBLISHED (Listed at last)

- No. of papers published in peer reviewed national/international journals – **28**
- No. of papers published in national/international conferences and seminars – **42**
- No. of books/chapters published in books - **3**
- No. of articles published in magazines – **2**

PROFESSIONAL SKILLS DEVELOPMENT PROGRAMME

- Attended two days' workshop on "FLUID POWER SYSTEMS, THEIR COMPONENTS, DESIGN AND RESEARCH SCOPES" organized by the Department of Mining Machinery Engineering, IIT (ISM) Dhanbad and sponsored by TEQIP-III from 03-04 October, 2018.
- Attended industrial skills development programme on "8-DAYS COMBO COURSE ON HYDRAULICS TRAINING" organized by Yuken India Limited, Bangalore, India in collaboration with Yuken Kogyo Co., Japan from 06-14 May, 2015 and awarded with certificate of competency.
- Attended professional skills development programme on "MATLAB AND SIMULINK FOR ENGINEERING APPLICATIONS" organized by Department of Electrical Engineering, ISM-Dhanbad.
- Attended Faculty Development Programme (FDP) on "ENTREPRENEURSHIP AWARENESS AND DEVELOPMENT" organized by Department of Management Studies, ISM-Dhanbad sponsored by DST, GOI, New Delhi from 03.03.2014 to 07.03.2014 and awarded with the Certificate of Proficiency.
- Attended professional skills development programme on "POWER HYDRAULICS" organized by Department of Mechanical and Mining Machinery Engineering, ISM-Dhanbad.

ACADEMIC PROJECTS

1. "PERFORMANCE ANALYSIS OF A HYDRAULIC SYSTEM USING ACCUMULATOR"
M.Tech research thesis Project completed under the Guidance of Prof. Kabir Dasgupta (HOD, Deptt. of Mechanical Engineering and Mining Machinery Engineering, ISM-Dhanbad) from 11th July, 2011 – 30th April, 2012.

Research Objective

- Developing an energy efficient hydraulic system using accumulator.
 - Selecting a suitable size of accumulator which minimizes the speed and pressure fluctuation.
 - Analyzing the amplitude of pressure waves, speed fluctuations of hydraulic motor, the distance between hydraulic accumulators and the dependency of the pulsations of pressure waves on the aforementioned sizes.
 - Creating a dynamic and a simulation model using the method of characteristics and *DSH* software.
2. "STUDY OF HYDRO POWER PLANT AND CONSTRUCTION OF WORKING MODEL"
B.Tech thesis project for the partial fulfillment of the award of B-TECH degree in mechanical engineering.
 - Presented a working model of Hydro Power Plant producing 3 volt of current, turbine running at 250 rpm-300 rpm.
 - Duration of Project: 6 Months

MEMBERSHIP OF PROFESSIONAL BODIES

- **Fellow Member** of International Institute of Organized Research (I2OR) w.e.f. March 2021, Membership ID- I2OR 2021/FI2OR-201.
- **Life Member** of Centre for Education Growth and Research (CEGR), Membership ID- LT1066.
- **Associate Member** of The Institution of Engineers (IE India), Membership ID- AM167104.
- **Life Member** of International Association of Engineers (IAENG), Membership ID- 262667.
- **Professional Member** of Institute for Engineering Research and Publication (IFERP), Membership ID- PM05194836.

POSITIONS OF RESPONSIBILITY & INSTITUTE LEVEL ACTIVITIES

Position	Organization	Period
Warden	Sapphire Hostel, IIT (ISM) Dhanbad	01.07.2021-Till date
Member, Executive Committee	TexMin Hub, TIH, IIT (ISM) Dhanbad	03.03.2021-Till date
Member Secretary, Innovation, Incubation and Entrepreneurship	TexMin Hub, TIH, IIT (ISM) Dhanbad	02.03.2021-Till date
Member, Mechanical and Rapid Prototyping Unit	Naresh Vashist Tinkering and Innovation Lab (NVTIL), IIT (ISM) Dhanbad	05.12.2020-Till date
Innovation Activity Coordinator	Institution's Innovation Council (IIC) 3.0, MIC	16.10.2020-Till date
DAC Secretary, Department of Mining Machinery Engineering	IIT (ISM) Dhanbad	03.08.2020-Till date
Coordinator, Institute Events	Naresh Vashisht Centre for Tinkering and Innovation (NVCTI), IIT (ISM) Dhanbad	17.07.2020-Till date
Co-convenor	Industry-Institute Interaction (III) 2020, IIT (ISM) Dhanbad	2020
Treasurer	Prakram 2020, IIT (ISM) Dhanbad	2020
Member, Expert Committee	Committee for Health Centre, IIT (ISM) Dhanbad	2020
Member, Expert Committee	CIL Innovation and Incubation Centre, IIT (ISM) Dhanbad	2020
Co-coordinator	TEQIP III, IIT (ISM) Dhanbad	29.11.2019-Till date
Member, Core Committee	Central Research Facility (CRF), IIT (ISM) Dhanbad	14.09.2018-Till date
Faculty I/C, Training & Placement, Deptt. of Mining Machinery Engineering	IIT (ISM) Dhanbad	2016-2020
Member, IIIC, IIT (ISM) Kolkata Centre	IIT (ISM) Dhanbad	2015-2019
Member, Executive Committee, SPEC, Deptt. of Mining Machinery Engineering	Executive Committee of Sports and Physical Education Centre (SPEC), ISM, Dhanbad	2014 – 2019
Member, Purchase Committee, SPEC	Purchase Committee of Sports and Physical Education Centre (SPEC), ISM, Dhanbad	2014 – 2019
Member (Mining Machinery Engineering Department)	TEQIP II (Technical Education Quality Improvement Program)	2014 – 2018

Member	BOCS (Board of Course Structure), B. Tech Course, Mining Machinery Engineering Department, ISM, Dhanbad.	2015
Member	Concetto, ISM, Dhanbad	2014
Class Representative of M.Tech (Mining Machinery Engg)	Indian School of Mines, Dhanbad	2010-2012
Organising Core Team Member of National Seminar, MENTCA, 2012	Indian School of Mines, Dhanbad	2012
Organising Core Team Head of M.Tech, Tech Fest, CONCETTO 2011	Indian School of Mines, Dhanbad	2011
Organising Core Team Head of B.Tech, Tech Fest, Utkarsh 2007	NIT, Jamshedpur	2007
Student Member	ASTM International	2011 till date
Active participation as Volunteer in various other Events, Workshop & Professional Development Programmes.	Indian School of Mines, Dhanbad	2010-2012

INVOLVEMENT IN SEMINARS/CONFERENCES

Sl. No.	Title	Organization/ Place	Duration	Role
01.	One-day webinar on 'Emerging Trends in Automotive Industry – Digital Age' under the aegis of TEQIP-III (Faculty Skill Development).	IIT (ISM) Dhanbad (Online Mode)	22.06.2020	Coordinator
02.	All India Seminar on Advances in Mine Transport System organized by the The Institution of Engineers (India), Dhanbad Local Centre under the aegis of Mining Engineering Division, IEI in association with DGMS Dhanbad	BCCL Community Hall, Koyla Nagar, Dhanbad, India	20.01.2016 to 21.01.2016	Session Chair
02.	1st National Conference on Advances in Thermal Engineering (AITE 2014) organized by the Deptt. of Mechanical Engg, ISM Dhanbad	IIT (ISM) Dhanbad	19.12.2016 to 20.12.2016	Member, Local Organizing Committee
03.	2 nd National Conference on Mining Equipment: New Technologies, Challenges & Applications (MENTCA 2015) organized by the Deptt. of Mining Machinery Engineering, ISM Dhanbad	IIT (ISM) Dhanbad	9.10.2015 to 10.10.2015	Convener
04.	Celebration of 47th Engineer's Day, 15th Sept'2014 along with a technical deliberation on the central theme of "Engineering Challenges For Knowledge Era" organized by the The Institution of Engineers (India), Dhanbad Local Centre	IIT (ISM) Dhanbad	15.09.2015	Convener
05.	Celebration of 47th Engineer's Day, 15th Sept'2014 along with a technical deliberation on the central theme of "Making Indian Engineering World Class" organized by the The Institution of Engineers (India), Dhanbad Local Centre	IIT (ISM) Dhanbad	15.09.2014	Co-convener

CONSULTANCY/OUTREACH PROGRAMS

Sl. No.	Name of PI/CO-PI etc.	Sponsoring Authority	Topic/Field	Duration
01.	Ajit Kumar (PI) Prof. A. K. Mukhopadhyay (Co-PI)	Vovlo India Pvt. Ltd.	3-Days Training Course on Technological and Managerial Aspects of Open-cast Mining	03.08.2015-05.08.2015
02.	Dr. L. A. K. Swamidhas (PI) Ajit Kumar (Co-PI)	Industries	3- Days training course on Mining Equipment Safety Practices	07.12.2015-09.12.2015
03.	Dr. L. A. K. Swamidhas (PI) Ajit Kumar (Co-PI)	Industries	3- Days training course on Mining Equipment Safety Practices	07.11.2016-09.11.2016
04.	Prof. K. Dasgupta (PI) Ajit Kumar (Co-PI)	CIL	Five weeks Intensive training course for MTs of CIL (Excavation cadre)	09.05.2016-10.06.2016
05.	Prof. T. K. Chatterjee (PI) Ajit Kumar (Co-PI)	CIL	Five weeks Intensive training course for MTs of CIL (E & M cadre)	04.07.2016-05.08.2016
06.	Dr. L. A. K. Swamidhas (PI) Ajit Kumar (Co-PI)	Industries	3- Days training course on Mining Equipment Safety Practices	07.08.2017-09.08.2017
07.	Prof. K. Dasgupta (PI) Ajit Kumar (Co-PI)	CIL	Five weeks Intensive training course for MTs of CIL (E & M cadre)	23.10.2017-24.11.2017
08.	Dr. N. Kumar (PI) Ajit Kumar (Co-PI)	Industries	3- Days training course on Coal Washeries- Equipment & Practices	09.10.2017-11.10.2017

DECLARATION

I hereby declare that the information furnished above is true to the best of my knowledge.

Date - 01.08.2021
Place - Dhanbad (India)

(AJIT KUMAR)

LIST OF PUBLICATIONS

➤ Chapters Published in Books:

Sl. No.	Author (s)	Title	Book Title	Editor-in-Chief	Publisher with ISBN/ISSN No.	Page No.
1.	Ajit Kumar , J. Das, K. Dasgupta	Performance Investigation of a Hydro-pneumatic type Accumulator used in a Hydrostatic Drive System of Off-road Vehicles	Fluid power networks : proceedings : 19th - 21th March 2018 : 11th International Fluid Power Conference Vol.1	Hubertus Murrenhoff	RWTH Aachen University, DOI: 10.18154/RWTH-2018-224355, ISBN:3-95886-215-2, 978-3-95886-215-9	Pages /Article No: 36-49
2.	Ajit Kumar and Pramod Kumar Patel	Visualization of Stress, Strain and Deformation on Blade Assembly of a Dozer Machine, Comparison among ADI and Hardox: FEA	Introduction to Mechanical Engineering	Hongseok Choi, Deptt of Mechanical Engg, Clemson University, USA	Research India Publications ISBN: 978-81-935729-7-9	113-128
3.	Ajit Kumar and Srinivas Nandikanti	Necessity of Pre-Cleaning System for Hydraulic Aggregates in a Hydraulic Equipment Production Plant: A Case Study	Advanced Engineering Research and Applications	Hongseok Choi, Deptt of Mechanical Engg, Clemson University, USA	Research India Publications ISBN: 978-93-86138-65-1	311-328

➤ Research Papers

1. **Ajit Kumar**, K. Dasgupta and N. Kumar (2021), 'Modeling and Analysis of a Novel Priority Valve Controlled Cable Reeling Drum Drive of Load Haul Dump Vehicle', in *IEEE Transactions on Vehicular Technology*, Vol. 70 (7), pp. 6636-6646, doi: 10.1109/TVT.2021.3087541.
2. S. Rowduru, N. Kumar, **Ajit Kumar** (2020), 'A critical review on automation of steering mechanism of load haul dump machine', *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, Vol. 234 (2), pp. 160-182.
3. **Ajit Kumar**, J. Das, K. Dasgupta (2019), 'Achieving constant speed of a hydrostatic drive using controlled operation of the pump and enhancing its energy efficiency', *ISA Transactions*, Elsevier, Vol. 90, pp. 189-201
4. Rakesh Kumar, Alok Vardhan, Dinkar B. Kishorilal and **Ajit Kumar** (2018), 'Reliability analysis of a hydraulic shovel used in open pit coal mines', *Journal of Mines, Metals and Fuels*; Vol. 66; No. 8, Aug 2018; pp. 472-477.
5. Alok Vardhan, **Ajit Kumar** and K. Dasgupta (2017), 'Effect of various parameters on the performance of the blasthole drilling', *Journal of Mines, Metals and Fuels*; Vol. 65; No. 2, Feb 2017; pp. 49-54.
6. **Ajit Kumar**, J. Das, K. Dasgupta, M. K. Barnawal (2018), 'Effect of Hydraulic Accumulator on Pressure Surge of a Hydrostatic Transmission System', *Journal of the Institution of Engineers (India): Series C-Springer Publications*, Vol. 99 (2), pp. 169-174, doi: 10.1007/s40032-017-0351-4.
7. **Ajit Kumar**, J. Das, K. Dasgupta (2017), 'Analysis of Decay Characteristics of an Accumulator in an Open-Circuit Hydrostatic System with Pump Loading', *Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering*, Vol. 231; No. 4, Feb 2017; pp. 312-326.

8. **Ajit Kumar** (2016), 'Analysis of Dynamic Characteristics in Ore Communion:Revisited', *Special Publication of the Geological Society of India*, No. 04 (2016), Special Issue, pp. 105-110, doi: 10.17491/cgsi/2016/95902.
9. Alok Vardhan, Yash Kumar, **Ajit Kumar** and K. Dasgupta (2016), 'Development of Dust Control Methodologies in Continuous Mining Operation', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 11, Nov 2016; pp. 557-563.
10. **Ajit Kumar**, Srinivas Nandikanti (2016), 'Analysis of Stress Distribution on the Bucket of a Dragline Machine', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 5&6, May-June 2016; pp. 118-122.
11. Shree Harsha R, **Ajit Kumar**, Abhishek Kumar (2016), 'Mathematical Modelling of a Hydro-Pneumatic Type Gas Accumulator', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 5&6, May-June 2016; pp. 155-158.
12. **Ajit Kumar**, K. Dasgupta, J. Das (2016), 'Improving Efficiency of Hydrostatic Steering System Used In Off-Road Vehicles Using Accumulator: A Review', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 5&6, May-June 2016; pp. 165-168.
13. Pramod Kr. Patel, **Ajit Kumar** (2016), 'Intensity Analysis and Structural Optimization on Multi-Shank Dozer Ripper: Visualization of Stress, Strain and Deformation through FEA', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 5&6, May-June 2016; pp. 187-192.
14. Abhishek Kumar, **Ajit Kumar** (2016), Shree Harsha R, 'Operational Characteristics of a Fixed Displacement Hydraulic Pump: An Overview', *Journal of Mines, Metals and Fuels*; Vol. 64; No. 5&6, May-June 2016; pp. 161-164.
15. Akanksha Sinha, K. C. Jana, **Ajit Kumar** (2015), 'Implementation of Optical Fiber Technology in Power Transmission: A Step above Wireless Technology', *International Journal of Applied Engineering Research*, Vol. 10, No. 79 (2015), Special Issue, pp. 19-23, © (2015) Research India Publications.
16. Dilip Kumar, J. Das, **Ajit Kumar** (2015), 'Study on Electro-hydraulic Actuated Close Loop Controlled Excavator', *International journal of Applied Engineering Research*, Vol. 10, No. 69 (2015), Special Issue, pp. 103-107, ISSN 0973-4562, © (2015) Research India Publications.
17. **Ajit Kumar**, Alok Vardhan, Rakesh Kumar (2014), 'Necessity of GPS-Based Proximity Warning System in Mining Industry – A tool to Prevent Mine Transport Accident', *Minetech*, ISSN: 0970-7204, Jan-March, 2014, vol. 35, No. 1, pp. 35-39.
18. J. Das, Santosh Kr. Mishra, RamaShankar Paswan, **Ajit Kumar**, Sujit Kumar, R. Saha, S. Mookherjee (2016), 'Characterization and Tracking Control of a Nonlinear Electrohydraulic Valve-Cylinder System', *Journal of Process Mechanical Engineering*, Sage Publication, Vol. 230(5), pp. 371-384, doi: 10.1177/0954408914554021
19. Ramashanakar Paswan, J. Das, N. Kumar, **Ajit Kumar**, Santosh Kr. Mishra, Sujit kumar (2014), 'Performance analysis of directional control valve: an overview', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 1983-1987, © (2014) Trans Tech Publications, Switzerland.
20. Ramashanakar Paswan, J. Das, N. Kumar, **Ajit Kumar**, Santosh Kr. Mishra, Sujit kumar (2014), 'Hydraulic circuit in damper: an overview', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 2056-2060 © (2014) Trans Tech Publications, Switzerland.
21. J. Das, Sujit Kumar, Santosh. Kr. Mishra, **Ajit Kumar**, N. Kumar, Ramashankar Paswan (2014), 'Modern Advancement of Hydraulic Motor: A Review', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 2179-2183 © (2014) Trans Tech Publications, Switzerland.
22. J. Das, Sujit Kumar, Santosh. Kr. Mishra, **Ajit Kumar**, N. Kumar, Ramashankar Paswan (2014), 'Study of energy saving system for hydrostatic drive- A Review', *International journal of Applied*

- Mechanics and Materials*, Vols. 592-594 (2014) pp 2210-2214 © (2014) Trans Tech Publications, Switzerland.
23. Ramashanakar Paswan, J.Das, N.Kumar, **Ajit Kumar**, Santosh Kr. Mishra, Sujit kumar (2014), 'Simulation study on different energy efficient hydraulic system: an Overview', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 2234-2238 © (2014) Trans Tech Publications, Switzerland.
 24. J. Das, Santosh K. Mishra, **Ajit Kumar**, N. Kumar, Sujit K, R. Paswan (2014), 'Study of energy recycling in electro-hydraulic system', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 2244-2248 © (2014) Trans Tech Publications, Switzerland.
 25. J. Das, Santosh K. Mishra, **Ajit Kumar**, N. Kumar, Sujit. K, R. Paswan (2014), 'Study on Hybridization of Hydraulic System used in Heavy Machinery', *International journal of Applied Mechanics and Materials*, Vols. 592-594 (2014) pp 2249-2253 © (2014) Trans Tech Publications, Switzerland.
 26. **Ajit Kumar**, N. Kumar, K. Dasgupta, J. Das and Raj Kumar (2014), 'Analysis of Steady State Performance of an Open Loop Drive of a Hydraulic Motor used in Hydrostatic Transmission System', *International Journal of Current Engineering and Technology*, E-ISSN 2277 – 4106, P-ISSN 2347 – 5161, Special Issue-2, (February 2014), pp. 407-412.
 27. M. K. Barnwal, G. K. Gangwar, N. Kumar, **A. Kumar**, J. Das (2013), 'Steady State Performance Analysis of Hydrostatic Transmission System (HST)', *International Journal of Mechanical and Production Engineering*, ISSN: 2320-2092, Volume- 1, Issue- 6, Dec-2013, pp. 48-51.
 28. **Ajit Kumar**, J. Das, Santosh Kr. Mishra (2013), 'Performance Investigation of a Proportional Valve Controlled Hydraulic Motor used in Hydrostatic Transmission System', *International Journal of Mechanical and Production Engineering*, ISSN: 2320-2092, Volume- 1, Issue- 6, Dec-2013, pp. 39-42.

➤ **Conference Papers**

1. Shatrughan Thakur, **Ajit Kumar**, Shubhyanshu Singh, 'Performance study of different type of man riding systems used in underground mines: A Case Study', *International conference on Recent Developments on Materials, Reliability, Safety and Environmental issues (IMRSE) 2021*, NIT Jalandhar, Punjab, June 25 – 27 2021.
2. Shubhyanshu Singh, **Ajit Kumar**, Shatrughan Thakur, 'Simulation analysis on energy regenerating in the swing drive system of a hydraulic excavator machine', *International conference on Recent Developments on Materials, Reliability, Safety and Environmental issues (IMRSE) 2021*, NIT Jalandhar, Punjab, June 25 – 27 2021.
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