Prof. Amit Rai Dixit

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I. Professional Experience [24 Years]

- Indian Institute of Technology (Indian School of Mines), Dhanbad: Dhanbad, Jharkhand, IN
  2023-08-17, to present | Professor (Mechanical Engineering)
  2012-04-06, to 2023-08-17 | Associate Professor (Mechanical Engineering)
  2009-05-10 to 2012-04-5 | Assistant Professor (Mechanical Engineering and Mining Machinery Engg) 2007-05-10 to 2009-04-5 | Senior Lecturer(Mechanical Engineering and Mining Machinery Engg)
- Engineering and Rural Technology (IERT), Allahabad, India
  2002-03-01 to 2007-05-09 | Assistant Professor (Engineering Degree Division; Industrial and Production Engg.)

II. Administrative Experience [18 years]

S.No	Position	Period	Duration
1	Warden/ Amber Hostel	August 2009 – May 2013	3 years 9 months
2	Faculty-in-charge (Training & Placement) (renamed as Vice Chairman Career Development Center)	July, 2013 to July, 2018	5 years
3	Associate Dean (Infrastructure)	May, 2018 to June, 2021	3 years 1 months
4	Head, Mechanical Engineering Department	July 2020 - sept, 2023	3 years 2 months
5	Dean (Infrastructure)	Sept, 2023 - till date	2 year 8 months

III. Externally Sponsored Projects

- **Design and fabrication of an automated modular system for mechanical dismantling of solar panel & recovery of valuable components**
  Funding Agency: TexMin, TTRP, DST
  2025-06 to present | Grant : 269.02 Lakhs
- **Coordinator and Head of the "Tech Bond Global – Center of Excellence (TBG-CoE)" Center**
  Funding Agency: Tech Bond Global LLC, Heath, USA
  2026 to 2031 | Grant- 500.0 Lakhs
- **Biomechanical analysis on the use of Pulsating Liquid Jet in cement removal from the femoral canal in Revision Total Hip Arthroplasty: A novel approach for biomedical application**
  Funding Agency: DST-SERB (CRG) New Delhi 2023-03 to present | Grant : 55.85 Lakhs
- **Investigation on The Application of Abrasive Water Jet Machining for Milling Operations Like Pocketing and Slotting on Advanced Aerospace Materials**
  Funding Agency: DRDL, DRDO (CRG)
  2024-05 to present | Grant : 9.9 Lakhs
- **Design, development, and supply of special purpose equipment for the cutting of composite hardware**

Funding Agency: Advance Naval Research Programme, DRDL (Hyderabad) 2020-05 to 2022-05 | Grant 39.5 Lakhs

- **Study, Investigation and Development of Machining Parameters of FRP Composites using Laser to Maintain Better Surface Integrity**
  Funding Agency: Defence Research and Development Organization (Hyderabad) 2016-01 to 2018-07 | Grant :9.9 Lakhs
- **Formality Study of Ti6AL4V alloy and its surface characteristics**
  Funding Agency: Defence Research and Development Organization (Hyderabad) 2020-08 to 2022-01 | Grant :9.83 Lakhs
- **Current status, enablers and barriers of implementation of the cellular manufacturing system in Indian industries**
  Funding Agency: Department of Science and Technology, Ministry of Science and Technology (New Delhi)
  2009-03 to 2012-03 | Grant- 7.2 lakhs
- **Modernisation of Manufacturing Facilities vis-a-vis Improvement in Quality Teaching and Research**
  Funding Agency: Department of Science and Technology, Ministry of Science and Technology (New Delhi)
  2005-03 to 2010-03 | Grant- 44.5 Lakh

IV. Consultancy (International)

1. Performance Evaluation of Tech Patch Repair Solution in Indian Mining/ Petrochemical Application" Consultancy no. CONS 7390 C dt 12.12.2024, Clint Tech Patch, USA, Total Value $31100. (Approx Rs 28 Lakhs)

V. International Mobility Grants

- Awarded an International grant for "Teaching Mobility" under the European Union-sponsored Erasmus+ Programme and Visited Institute of Advanced Technologies, Faculty of Manufacturing Technologies, Technical University of Košice, Slovakia, in 2018
- Awarded an International grant for "Research Mobility" under the European Union-sponsored Erasmus+ Programme and Visited Poznan University, Poland, in 2023.

VI. Patents

1. Patent. Title: Method and Device for Optimizing Cutting Fluid In Metal Cutting Operations
   Application Number: 202111033458 | Date of filing: 26/07/2021 |Patent Status: Granted
   Inventors Name: Mahip Singh (PhD Student), Dr Amit Rai Dixit (Principle Guide), Dr. Anuj Kumar Sharma (PhD Student)
2. Patent Title: An Isothermal Propulsion System For Metal Cutting Operation By Minimum Quantity Lubrication Process Maintaining Fluid Temperature Above Freezing Point

   Number: 202331079637 | Date of filing: 23.11.2023 | Patent Status: Published
   Inventors Name: Mahip Singh, Dr. Amit Rai Dixit (Principle Guide), Dr Anuj Kumar Sharma
3. Patent title: Cavity Cleaner To Remove Support Structures From 3D Printed Internal Cylindrical Cavity
   Application Number: 202331032454 |Paten Status: Published

   Inventors Name: Dr Vivek Bajpai, Dr Amit Rai Dixit, Ratnesh Raj.
4. Patent title: System And Method Of Automatic Fibre Placement During Vat- Photopolymerization Additive Manufacturing For Composite Material Fabrication
   Application Number: 202431071798 |Patent Status: Published

   Inventors Name: Amit Rai Dixit, Annada Prasad Moharana, Ratnesh Raj

5. Patent title: Dynamic Cutting Fluid Supply System And Method To Maintain A Constant Cutting Zone Temperature During A Workpiece Operation
   Application Number: 202431071798 | Patent Status: Published
   Inventors Name: Mahip Singh, Dr. Amit Rai Dixit (Principle Guide), Dr Anuj Kumar Sharma
6. Patent title: Robotic Based Health Care System
   Application Number: 202111030805 | Patent Status: Filed
   Inventors Name: Mahip Singh, Dr. Amit Rai Dixit (Principle Guide), Dr Anuj Kumar Sharma

IV. Thesis Supervision:

Number of Ph.D. supervised as (sole/principal supervisor): 17
Number of PhD supervised (Co-guide) : 3
Number of PhD under supervision : 8
Number of M.Tech. supervised as (sole/principal supervisor): 44
Number of M.Tech. under supervision. 4

V. International Collaborative Research Work

- Visited Institute of Geonics, Ostrava, Czech Republic in May-June 2015 and 2016 for joint research in the Abrasive and Pulsating water jet machining field.
- Expert invitation to attend International WORTH meeting in Presov, Slovakia, to give an expert opinion on the EU-financed project 7-9th June 2015
- Joint Ph.D. Guidance of Mr Akash Nag with Prof. Sergej Hoch, Director, Institute of Advanced Technologies, Faculty of Manufacturing Technologies, Technical University of Košice, Slovakia.
- Joint Ph.D. Guidance of Mr Mohammed Shariq with Dr Rebeka Rudolf, University of Maribor, Slovenia, under Erasmus+ mobility program.
- Joint Research work with (i) University of Maribor, Slovenia(ii) Technical University of Kosice, (iii) Institute of Geonics, Czech Republic (iv) Curtin University, Australia (v) University of Opole, Poland (vi) University of Akron, USA
- Visited Institute of Material Technology, Faculty of Mechanical Engg, University of Maribor, Slovenia from 11th June – 12th June, 2016 – for future collaborations in Nano-structure materials and application.
- Joint Ph.D. Guidance of Mr Pratik Kumar Shaw with Dr Alokesh Pramanik, Curtin University Australia, under MoU.

XII. Details of Outreach Programs Organized:

Professional Development Programs (PDP)

- Power Hydraulics In HEMM (CONS/2947/2015-16), 24.8.2015 to 28.8.2015
- Power Hydraulics In Heavy Earth Moving Machineries (HEMM) (CONS/2609/2014-15), 4.8.2015 to 8.8.2015
- Power Hydraulics in HEMM (CONS/2346/13-14), 11.11.2013 to 15.11.2013
- International Training Program on Elements of Mining Equipment (CONS/2245/2013-14) for officials of the Ministry of Mines, Afghanistan, 24.7.2013 to 9.8.2013
- Hydraulics in Heavy Earth Moving Machineries (CONS/1983/12-13), 17.12.2012 to 21.12.2012
- Trackless Mining Equipment – Loaders and Transporters used in Underground Mines (CONS/1873/2012-13), 10.5.2012 to 12.5.2012
- Power hydraulics in HEMM (CONS/1552/11-12), 12.9.2011 to 16.9.2011
- Advances in Mine Workshop Practice (CONS/1324/2010-11), 21.2.2011 to 25.2.2011
- Hydraulics in Mining Equipment (CONS/1243/10-11), 22.11.2010 to 26.11.2010
- Power hydraulics in HEMM (CONS/1063/10-11), 26.4.2010 to 30.4.2010

Workshops and Seminars

- International workshop on precision engineering, 2017
- National Seminar on Mining Equipment: New-Technologies, Challenges & Applications, 2012Conferences
- 2nd International and 14th National Conference on Industrial Problems on Machines and Mechanisms (IPRoMM-2022), 2022

Faculty and Executive Development Programs (FDP/EDP)

- 24 weeks AICTE sponsored QIP_PG certificate course on "Robotics and 3D printing", 22.7.24 to 15.12.2024
- 24 weeks AICTE sponsored QIP_PG certificate course on "Robotics and 3D printing", 23.6.25 to 23.12.2025
- Two weeks DRDO sponsored EDP on "Additive Manufacturing" (OCEP0010E), 15.9.25 to 26.9.2025

IX. MEMBERSHIP OF PROFESSIONAL BODIES

- Member of the American Society of Mechanical Engineers (ASME)
- Member of the International Association of Engineers (IAENG)
- Fellow Institute of Engineers (IE India) (F-1313424).
- Senior Member- INAE Indian National Academy of Engineering (INAE)

XIV. Publications

[Citation 10051, H Index 51]

Journal Articles: 176 | Book Chapter: 15 | Conference Proceeding: 56

Detailed List: https://orcid.org/0000-0001-6135-8098

Book Published: Research Progress of Metals and Alloys by Thermal Layering and Deposition "Publisher MDPI Switzerland , Editors Amit Rai Dixit & Ashish Kumar Srivastava ISBN 978-30365-7844-6 (Hbk) ISBN 978-3-0365-7845-3 (PDF) , doi.org/10.3390/books978-3-03657845-3