

# Vishwajeet Kumar

Doctor of Philosophy  
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## EDUCATION

DEGREE	INSTITUTE	CGPA	YEAR	BOARD
M.Tech	IIT Ropar	7.46	2018-20	N/A
B.Tech	IIT Patna	7.06	2013-17	N/A
XII	B.S College	76.6%	2013	Bihar Board
X	K.N.S.M High School	76.2%	2011	Bihar Board

## INTEREST IN RESEARCH AREAS

- ❖ Advance Joining Techniques (Mechanical Clinching, Adhesive Bonding, Microwave Joining, Hybrid Joining Techniques)

## MAJOR PROJECTS UNDERTAKEN

### INDUCTION ASSISTED FRICTION WELDING (2020)

- ❖ Numerical simulation of friction welding of Mild Steel and Aluminium 6061 with and without heat assisting was performed on ABAQUS 6.14 software package. The transient temperature, stress, and strain fields in inertia welding are investigated analytically using finite element method.

### DEVELOPMENT OF PD SYSTEM FOR REAL-TIME TOOL MONITORING AND COMPENSATION SYSTEM FOR MICRO-EDM PROCESSES (2019-20)

- ❖ To decrease tool wear and increase MRR and efficiency of Micro-EDM process.

### FABRICATION OF MICRO CHANNEL (2019)

- ❖ Channels of dimension in micro range having hydraulic diameter less than 1 mm is fabricated using micro drilling, micro milling, manual tapping and face milling.

### THERMAL MODEL FOR LAMINATED OBJECT MANUFACTURING (2019)

- ❖ Transient temperature distribution between different layers was investigated. Simulation of the build process for a simple ceramic LOM part built from layers of ceramic tape has been performed on ANSYS software.

### ENVIRONMENTAL IMPACT AND SUSTAINABILITY OF INDUSTRY 4.0 (2019)

- ❖ Study of environmental impact and sustainability assessment of I4.0 was done by going through various literature survey.

### HEAT ANALYSIS OF BIOMASS GASIFIER (2016-17)

- ❖ Increasing efficiency of bio mass gasifier using heat analysis.

### HUMAN POWERED VEHICLE CHALLENGE (2016)

- ❖ Member of the team which designed and manufactured a Human Powered Vehicle to compete at national level in an event organised by American Society of Mechanical Engineers (ASME). **RESULT:** Secured 4<sup>th</sup> and 5<sup>th</sup> position in the Innovation and Design events.

### SAE INDIA BAJA (2014-2015)

- ❖ Member of the team which aimed to design and manufacture an All-Terrain Vehicle to compete at national level. **RESULT:** Qualified virtual round as only team from the state and one of the only two IITs.

### HYDRAULIC ARM (2014)

- ❖ Designed and manufactured a hydraulic arm for college level competition.

### HACK SAW PROTOTYPE (2013)

- ❖ Designed and manufactured a working prototype of a human powered hack saw based on planet gear mechanism to increase the efficiency.

## **SUMMER TRAINING AT BHEL BHOPAL**

Exposure to various processes of turbine manufacturing. A practical exposure to different types of welding, casting and other traditional machining processes.

## **TECHNICAL UNDERSTANDING**

### **EXPERIENCE WITH MACHINES**

- ❖ CNC Milling and Lathe, Lathe Machine, Grinding Machine, Power Drill ,Laser Cutting Machine, Optical Micro Scopes, Hydraulic Press, Ultra Sonic Machine, WEDM and Welding Machines, micro-EDM , Reverse micro-EDM.

### **SOFTWARE SKILLS**

- ❖ Software- SolidWorks, AutoCAD and Pro-E, Catia, Ansys, MS-Office.
- ❖ Programming Skills- C, C++, Java (Basics), MATLAB, LabVIEW.

## **LEADERSHIP AND POSITION OF AUTHORITY**

- ❖ Coordinator of “Ek Bharat Shrestha Bharat Club”, IIT Ropar constituted under one of the major flagship programmes of Ministry of Education, Government of India.
- ❖ Organiser of the most successful technical event 'AQUA SOCCER' of Techno-Cultural Fest of the Institute in Anwasha 15.
- ❖ Event organising manager of the Annual Techno-Management Fest 'CELESTA' and organised event named BANG.
- ❖ Former captain of basketball team of IIT Patna.

## **EXTRA CURRICULAR ACTIVITY**

- ❖ Volunteered at “Pehchaan Ek Safar” a Non-Profit Organisation formed by the students of IIT Ropar for the education of underprivileged kids.
- ❖ Volunteered at “Art of Living” foundation by Gurudev Sri Sri Ravi Shankar and completed Sri Sri Yoga Level 1 Course and Online breathe and meditation workshop.
- ❖ Worked as a part of Rural Technology Development Club, IIT Patna and recorded video lectures.
- ❖ Vice-Captain of basket team of IIT Patna and represented my college at 50<sup>th</sup> and 51<sup>st</sup> Inter IIT Sports meet held at IIT Bombay and IIT Kanpur.
- ❖ Member of Rural Technology Development Club and SCME club of IIT Patna.
- ❖ Volunteered in various parts like technical team, verve, Media and Public Relation team during Anwasha 14 and 15.
- ❖ Captain of PG basketball team at IIT Ropar and participated in Inter Year Tournament 2019.