Dr. Niranjan Kumar

Work Address

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Citizenship

India

Education

Jan, 2016
Ph.D.

Indian School of Mines, Dhanbad, Jharkhand, India.

Title: *Performance investigation of Two-Motor Hydrostatic Summation Drive used in Off-Road vehicle*

Supervised by: *Prof. Kabir Dasgupta, Prof. & Dean (F&P), ISM Dhanbad.*

2011
Master in Mechanical Engineering
In
Dept. Of Mechanical Engg.
Specialization: Machine Design
(74.6%)

Jadavpur University, Jadavpur, West Bengal, India.

Title: *Fatigue Life Analysis of Multilayer Pressure Vessel:* Analytical approach to design the multilayered vessel

Supervised by: *Dr. D. K. Mandal, Reader,* Jadavpur University.

2009
Bachelor of Technology
In
Dept. Of Mechanical Engg.
(75.4%)

Dept. Of Mechanical Engineering,
Jalpaiguri Govt. Engg. College
Jalpaiguri, West Bengal, India.

2005
Higher Secondary (10+2)
(80.6%)

D. V. Boys, Chittaranjan, West Bengal, India.
Under CBSE

2003
Secondary (10th standard)
(82. 6%)

D. V. Boys, Chittaranjan, West Bengal, India.
Under CBSE

Countries Visited

- RWTH University, Germany (2018).

Work Experience

14 Dec 2011 to 12 Apr 2022
Assistant Professor

- Assistant Professor, Department of Mining Machinery Engineering,
  Indian School of Mines, Dhanbad-826004, Jharkhand, India.

13 Apr 2022 to 29 Apr 2022
Associate Professor

- Associate Professor, Department of Mining Machinery Engineering,
  IIT (ISM) Dhanbad-826004, Jharkhand, India.

30 Apr 2022 to Till Date
Associate Professor

- Associate Professor, Department of Mechanical Engineering,
  IIT (ISM) Dhanbad-826004, Jharkhand, India.

Languages Known

English, Hindi, Bengali, Bhojpuri.

Scholarships/Awards

2018 **Outstanding contribution in Reviewing**, awarded by Editor of Energy, Elsevier

2014 **The Institution Prize:** For publishing paper titled 'Steady-state performance analysis of hydrostatic transmission system using two-motor summation drive' in the Journal of the Institute of Engineers (India): Series C, Vol. - 94, 2013.

2009 **UGC (GATE) Fellowship** to study Master of Mechanical Engineering in Dept. Of Mechanical Engg, Jadavpur University, Kolkata in 2009-2011.

2005 **Address of Honour** for standing 1st in AISSCE-2004-05 in the railway township of Chittaranjan.

2003 **Address of Honour** for standing 2nd in AISSE-2002-03 in the railway township of Chittaranjan.

2002 **Merit Certificate** in 2002 for qualifying Maths Olympiad organised by Delhi Association of Mathematics Teachers.

Professional Membership

- Institution of Engineers, India : AM147051-2
- International Association of Engineers (IAENG): 262666
- Institute For Engineering Research and Publication (IFERP): PM80743265
- Centre for Education Growth and Research (CEGR) : LT 1068
- Student Member, The Institution of Engineers, India. (SE-735110177)
- Student Member, FOSET, India. (SM26-06-SLG)

Research Experience

Jan. 2016 to till date

Research Areas:

- Design of Hydrostatic Transmission system of wheel loader/excavator;
- Power steering system;
- Design and Manufacturing aspects of hydraulic components;

Jan. 2012 to Dec. 2015

Ph.D. under Institute R&D Project funded by UGC: Design and Development of Computer Controlled Energy Efficient Hydrostatic Transmission System for off-road vehicle using Two-motor Summation Drive.

Work Done:

1. Studied the selection criteria of the components and fabricated the Two-motor summation drive in collaboration with the representatives of M/s Bosch Rexroth (I) Pvt. Ltd.
2. Studied the mechatronics of the system.
3. Practiced IndraLogic for the PLC programme. The control of the physical system through PLC was made.
4. Determination of the loss-coefficients of the major components
5. Analysed the steady state and transient performance of the system
6. Automatic Switching over from single-motor mode to twin motor mode of operation

Work Remaining:

Acoustic and vibration analysis of the HST system.

July 2009 to April 2011

Title: Fatigue Life Analysis of Multilayer pressure Vessel.

Work Done:

1. Effect of autofrettage on a Monobloc pressure vessel,
2. Effect of shrink-fit
3. Combined effect of "Autofrettage" and "Shrink-fit".
4. Optimization of the degree of shrink-fit and autofrettage for optimum fatigue life

Work Remaining:

Experimental Analysis of the above.

Computer Skill

Autocad, Matlab, Lab-view; Abaqus, IndraLogic. Automation Studio; DSH Plus, MS Office, Adobe Photoshop.

Hobbies	Playing Cricket & carom, Listening to music.
Publications	(i) Journals : 47 (28 SCI + 19 Non-SCI) (ii) Conferences : 21
Scientific/ Technical Books/ Chapter Contribution	Chapter contribution: 02 Lecture Notes: 01
Patents	: 04 (**01-Granted**; 02-accepted; 01-filed)
R&D Projects	: 05
Consultancies	: 01
Capacity Building	: 07 Capacity Building Programs for executives : 01 NPTEL course on Industrial Hydraulics & Automation for UG/PG/Research fellows.
Conference/workshop/ webinar organized	: 05
PhD Guidance	: 11 (Awarded: 06, Guiding: 05)
Award Received	: 04 (Best paper and Reviewer awards from Energy, Elsevier), Young Faculty award during 13th Rastriya Sikhsa Gaurav Puraskar Ceremony 2020.