Aman Kumar

Assistant Professor, Department of Mechanical Engineering
Indian Institute of Technology (Indian School of Mines) Dhanbad
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Research Interests- Dynamics, Vibration of Structures, Vibration-Induced Transport

Previous Position- DST-INSPIRE Faculty Fellow in the Department of Mechanical Engineering, Indian Institute of Technology Kanpur from August 11, 2021 to December 16, 2021.

Current Position- Assistant Professor in the Department of Mechanical Engineering, Indian Institute of Technology (Indian School Of Mines) Dhanbad (joined December 22, 2021).

Educational Qualifications:

- Ph.D. (2016-2021) from Indian Institute of Technology Kharagpur, Department of Mechanical Engineering
- M.Tech. (2014-2016) in Mechanical Systems Design from Indian Institute of Technology Kharagpur, Department of Mechanical Engineering.
- B.E. (2009-2013) in Mechanical Engineering from Bengal Engineering and Science University Shibpur (currently, **IIEST Shibpur**)

Teaching Experience- Course instructor for the following subjects at IIT (ISM) Dhanbad starting from 22-Dec-2021:

- Mechanics of Solids (CEE 201)
- Rotor Dynamics (MED 525)
- Engineering Mechanics (MEI 101)
- Advanced Dynamics (NMEC520)

Externally Funded Project (Ongoing)- " Studies in Nonlinear Dynamics of Mechanical Systems", Project Number: DST/ ME/ 2021134, Department of Science and Technology (DST), Ministry of Science and Technology, Govt. of India, Sanctioned Amount of INR 3500000, Five years (from 20-July-2021).

Administrative Responsibilities:

- Secretary of the Department Advisory Committee (DAC), Department of Mechanical Engineering, IIT (ISM) Dhanbad.
- Faculty in Charge (FIC), Dynamics of Machines Lab, IIT (ISM) Dhanbad.

Awards:

- **Prof D.P. Ghosh Memorial Award 2016-** For obtaining the highest grade in the specialization "Mechanical Systems Design" in M.Tech, IIT Kharagpur.
- **DST-INSPIRE Faculty Fellowship Award 2020**

Publications:

- Kumar, A., DasGupta, A., 2018, Dynamics of a shell-type amplified piezoelectric actuator, *Trans of ASME, Journal of Vibration and Acoustics.*, **140(4)**, 041011.
- Kumar, A., DasGupta, A., 2019, Generation of harmonic waves in beams using boundary excitation, *International Journal of Mechanical Sciences*, **159(0020-7403)**, 234-245.
- Kumar, A., DasGupta, A., 2020, Generation of circumferential harmonic travelling waves on thin circular plates, *Journal of Sound and Vibration*, **115343**.
- Kumar, A., DasGupta, A., 2021, Wave-induced dynamics of a particle placed on a thin circular plate, *Nonlinear Dynamics*, **103(1)**, 293-308.
- Kumar, A., DasGupta, A., 2022, Wave-induced transport of a particle on a beam surface, *J. Vib. Eng. Technol.*, **10**, 1413-1429.
- Kartheek, M. D. M., Kumar, A., & Chandravanshi, M. L., 2024, Vibrational transport dynamics of a particle in an offset slider crank mechanism, *Sadhana*, **49(4)**, 1-11.

- Singh, S.K., Kumar, A. & Ghoshal, S. Imposing Nodes on Thin Beams Using Multi-Frequency Support Excitation and Support Stiffness Tuning, 2025, *J. Vib. Eng. Technol*, **13 (61)**.

Papers Presented in International Conferences:

- Generation of travelling waves in Euler-Bernoulli beams using search based optimization, IMECE 2018-88719, ASME Congress 2018, Pittsburgh, USA.
- Generation of harmonic travelling waves in thin circular plates, IMECE 2019-12372, ASME Congress 2019, Salt Lake City, Utah, USA.