

VIWEK KUMAR

Ph.D.

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Education

Jan. 2018 – **Ph.D., Mechanical Engineering**, *Indian Institute of Technology, Guwahati, Assam, India.*
Sept. 2023 : Thesis Title: Theoretical and experimental investigation of axially graded smart structures.

2015 – 2017 : **M.Tech, Mechanical Engineering**, *Indian Institute of Engineering Science & Technology, Shibpur, West Bengal, India.*
Thesis Title: Simulation of ultrasonic wave propagation for TOF data and tomographic reconstruction.

2009 – 2013 : **B.Tech, Mechanical Engineering**, *Kurukshestra University, Kurukshestra, Haryana, India.*

Experience

Jan. 2026 – **Assistant Professor**, *Department of Mechatronics and Automation Engineering, IIIT Bhagalpur,*
Present : Bihar, India.

Aug. 2024 – **Project Executive Officer**, *Department of ME, IIT Kanpur, Uttar Pradesh, India.*
Oct. 2025 :
Project Title: **Numerical analysis using finite element method (FEM) for static analysis of pressure hull considering hydrostatic load.**

Aug. 2023 – **Senior Project Engineer**, *Department of Design, IIT Kanpur, Uttar Pradesh, India.*
Aug. 2024 :
Project Title **Evaluation of erosion resistant coating in large caliber gun barrels in the presence of repetitive loading of its internal diameter due to moving pressure pulse.**

Publications

Journal Articles

2024 : **Viwek Kumar and Poonam Kumari**, Two-Dimensional Analytical solutions for the multisegmented piezoelectric panel: An EKM approach, *Composite Structures, 329, 117461.*

2023 : **Viwek Kumar and Poonam Kumari**, 2-D Analytical solutions for the multisegmented panel subjected to arbitrary boundary condition, *ZAMM-Journal of Applied Mathematics and Mechanics, 103(2), e202200291.*

2022 : **Viwek Kumar and Poonam Kumari**, 2D closed form solution for bending of edge bonded dissimilar beams: An application of EKM, *Composite Structures, 289, 115420.*

2022 : **Viwek Kumar and Poonam Kumari**, Fabrication and Characterization of Cu/SiC-Based Axially Functionally Graded Beam, *Advanced Engineering Materials, 24(5), 2101239..*

In Conferences

2023 : **Viwek Kumar and Poonam Kumari**, 2-D analytical solutions of segmented piezoelectric panel using extended Kantorovich method, 11th *International conference on materials for advanced technologies (ICMAT-2023), 26-30th June, Suntec City, Singapore.*

2022 : **Viwek Kumar and Poonam Kumari**, Processing and Characterization of the Cu-SiC based Functionally Graded Materials (FGMs), 8th *Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS 2022), December 11-14, IIT Guwahati, India.*

2022 : **Poonam Kumari and Viwek Kumar**, 2D analytical solution for multisegmented Aluminium-Steel-composite panel-An Aerospace Application, 15th **World Congress on Computational Mechanics (WCCM-XV) & The 8th Asian Pacific Congress on Computational Mechanics (APCOM-VIII)**, 31st July - 5th August, Yokohama, Japan.

2021 : **Viwek Kumar and Poonam Kumari**, Fabrication and characterization of the axially functionally graded beam, 7th **Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS 2020+1)**, March 13-15, Tohoku University, Japan.

Research Areas

Smart Structures, Smart Materials, Functionally Graded Materials, Structural Mechanics, Mathematical Modeling, Powder Metallurgy and Non-Destructive Testing.

Fellowships & Awards

July 2015 – **Post Graduate Scholarship** from Ministry of Education (MOE), Government of India, as a June 2017 : Master's student in Indian Institute of Engineering Science and Technology Shibpur.

January 2018 **Research Fellowship** from Ministry of Education (MOE), Government of India, as a Ph.D. – Dec. 2022 : research scholar at Indian Institute of Technology Guwahati.

2023 : Receipt of **CSIR Travel Grant** from Council of Scientific & Industrial Research (CSIR) to attend an international conference **ICMAT-2023** at Suntec City, Singapore.

2023 : Receipt of **Student Travel Assistance Fund (STAF)** from IIT Guwahati to attend an international conference **ICMAT-2023** at Suntec City, Singapore.

Achievements

2013 : Secured 8th rank among top-20 university merit list.

2014 : Qualified for Graduate Aptitude test in Engineering (**GATE**) in Mechanical Engineering.

2015 : Qualified for Graduate Aptitude test in Engineering (**GATE**) in Mechanical Engineering.

2021 : First place in SPIRIT and inter-departmental badminton league at IIT Guwahati.

2023 : Second place in inter-hostel tournament (SPARDHA) at IIT Guwahati.

Skills

Software : **ABAQUS, ANSYS, NASTRAN, PATRAN, MATLAB, FORTRAN, PYTHON, LATEX**

Instrument : **Powder-X-ray Diffractometer (XRD), Field Emission Scanning Electron Microscope (FESEM), Transmission Electron Microscope (TEM), Universal Testing Machine (UTM), Vicker's Microhardness, Optical Microscope**

Language : **English and Hindi**

Short-Term Courses and Workshops

Aug. 2016 : **Tribology frontiers workshop**, IEST Shibpur, India.

Jan. 2017 : **National research workshop on energy technologies**, IEST Shibpur, India.

Oct. 2018 : **Performance evaluation and life enhancement of structures (eLIFE-2018)**, CSIR-SERC, Chennai, India.

Nov. 2019 : **Fatigue of composite materials**, Dr. B R Ambedkar National Institute of Technology Jalandhar, India.

Position of Responsibility

August 5–7, **Reviewer in Progressive Research in Industrial & Mechanical Engineering (PRIME-2021)**, 2021 : NIT Patna, Bihar, India.

December **Organizing Member in 8th Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS-2022)**, IIT Guwahati, Assam, India.

January **Course Instructor of Finite Element Method and Environmental Science**, IIIT Bhagalpur, 01–Present, Bihar, India.

2026 :

Teaching Assistantship

2018 - 2023 : **Engineering Mechanics, Theory of Plate and Shells, Workshop Lab and Engineering Drawing, Theory of Composite Shells (NPTEL MOOCs course).**

Referees

Prof. Poonam Kumari

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