



Dr. Soumyajit Roy

Assistant Professor,
Mechanical Engineering
Department,
National Institute of
Technology Rourkela

Date of Birth: Nov 29, 1989

ME-309, Mechanical Engineering Department, Mechanical Sciences Building, NIT Rourkela, Sector 1, Rourkela - 769008, Sundargarh, Odisha

+91-661-246-XXXX (0)

roysoumyajit@nitrkl.ac.in

Google Scholar: cqwyib8AAAAJ

ORCID: 0000-0002-7784-6309

Interests

- Railway Pantograph-Catenary
- Wave Propagation
- Multibody Dynamics
- Mechanical Vibration

Skills

Programming:

Mathematica ●●●●●

MATLAB ●●●●●

CAD Tools:

Solidworks ●●●●●

FEM Simulators:

Ansys, Abaqus ●●●●●

Profiles



Professional Experience

- Jun, 2023 – ongoing **Assistant Professor Gr. - II** NIT Rourkela, Rourkela
Assistant Professor of Mechanical Engineering Department, National Institute of Technology Rourkela.
- Apr, 2022 – May, 2023 **Assistant Professor Gr. - I** BITS Pilani, Pilani
Worked as an Assistant Professor in the Department of Mechanical Engineering, Birla Institute of Technology and Science, Pilani, Pilani Campus for a period of 1 year and 1 month.
- Aug, 2021 – Mar, 2022 **Temporary Faculty** NIT Mizoram, Aizawl
Worked as a temporary faculty in the Department of Mechanical Engineering, National Institute of Technology Mizoram for a period of 7 months.

Education

Doctoral Study

- 2013 – 2021 **Ph.D. in Applied Mechanics** IIT Kharagpur, Kharagpur
Thesis Title: Coupled Dynamics of Pantograph-Catenary System during Multiple Pantograph Operation
Supervisors: Prof. Goutam Chakraborty and Prof. Anirvan DasGupta
CGPA/Percentage: CGPA: 9.50/10
Department: Mechanical Engineering
Institute/University: Indian Institute of Technology Kharagpur

Postgraduate Study

- 2011 – 2013 **M.Tech. in Design of Mechanical Equipment** IIT Delhi, New Delhi
Dissertation Title: Mechanical Design and Analyses of 6-DOF Motion Platform
Supervisor: Prof. S. K. Saha
CGPA/Percentage: CGPA: 9.154/10
Department: Mechanical Engineering
Institute/University: Indian Institute of Technology Delhi

Undergraduate Study

- 2007 – 2011 **B.E. in Production Engineering** Jadavpur University, Kolkata
Project Title: CNC Machining of Turret Cam of Automatic Screw Machine
Supervisor: Prof. Subir Kumar Sanyal
CGPA/Percentage: CGPA: 8.26/10
Department: Production Engineering
Institute/University: Jadavpur University

10+2 and 10

- 2005 – 2007 **Higher Secondary Examination** WBCHSE, Kolkata
Subject: Science
CGPA/Percentage: Percentage: 83.0%
School: Burdwan Municipal High School
Board: West Bengal Council of Higher Secondary Education
- 2003 – 2005 **Madhyamik Pariksha** WBBSE, Kolkata
Subject: General, Additional Physics
CGPA/Percentage: Percentage: 90.5%
School: Burdwan Municipal High School
Board: West Bengal Board of Secondary Education

Short Bio

Dr. Roy joined NIT Rourkela on June 14, 2023. Since then he has been serving the institute as an Assistant Professor. Prior to this, he worked as an assistant professor in the Mechanical Engineering Department at BITS Pilani, Pilani Campus for more than one year. He completed his doctoral study at IIT Kharagpur, where he worked on mathematical modelling of the railway catenary and pantograph systems, and studied their coupled dynamics from wave propagation and multi-body system approach. He graduated from Jadavpur University, Kolkata and received his master's degree from IIT Delhi, New Delhi. During his postgraduate study, Dr. Roy studied the singularity and workspace analyses of different parallel manipulators. His areas of interest include multibody dynamics, mechanical vibration, wave propagation in continuous systems, etc. He has acquired substantial programming knowledge in computer algebraic systems like Wolfram Mathematica. He also has skills in 3D modelling software like Dassault Solidworks.

Languages

Bengali (Mother Tongue)

English (Read, Write, Speak)

Hindi (Speak)

Metrics



Other Qualifications

National Level Test

2011	Graduate Aptitude Test in Engineering - 2011	IIT Madras, Chennai
	Subject: Mechanical Engineering	
	Score: 709/1000	
	Rank: 247 (out of 81175 candidates)	
	Organising Institute: Indian Institute of Technology Madras on behalf of the NCB, GATE, DHE, MHRD	

Courses Taught

Postgraduate Courses

BITS Pilani	DE G611: Dynamics and Vibrations (3-0-2)	NO. OF SEM.: 1
	Completed - 1st Sem, 2022-23	

Undergraduate Courses

BITS Pilani	ME F413: Nonlinear Vibrations (3-0-0)	NO. OF SEM.: 1
	Completed - 2nd Sem, 2022-23	
	BITS F110: Engineering Graphics (1-0-2)	NO. OF SEM.: 3
	Completed - 2nd Sem, 2022-23	
	Completed - 1st Sem, 2022-23	
	Completed - 2nd Sem, 2021-22	
	ME F314: Design of Machine Elements (3-1-0)	NO. OF SEM.: 1
	Completed - 1st Sem, 2022-23	
	ME F211: Mechanics of Solids (3-1-0)	NO. OF SEM.: 1
	Completed - Summer Term 2021-22	
	BITS F221: Practice School - I (5-0-0)	NO. OF YEAR: 1
	Completed, Grade Recommended - Summer 2022	
NIT Mizoram	MEL1504: Machine Design - I (2-1-0)	ODD NOV 2021-22
	Completed, Grade Submitted	
	MEL1505: Industrial Management and Operations Research (3-0-0)	ODD NOV 2021-22
	Completed, Grade Submitted	
	MEP1101: Engineering Mechanics Practical (0-0-2)	ODD NOV 2021-22
	Completed, Grade Submitted	
	MEL1605: Machine Design - II (2-1-0)	EVEN JUN 2021-22
	Incomplete, Till Mid-Semester Exam	
	MEL1405: Manufacturing Science and Technology - I (3-0-0)	EVEN JUN 2021-22
	Incomplete, Till Mid-Semester Exam	

Publications

Journals (Published)

- Soumyajit Roy, Anirvan DasGupta and G.Chakraborty, 'Dynamic interaction between multiple pantographs sliding on an overhead conductor wire: a multi-body and wave-based approach', *Archive of Applied Mechanics*, Volume 92, Pages 45-72, 2022, IF: 1.976.
- Soumyajit Roy, G.Chakraborty and Anirvan DasGupta, 'On the wave propagation in a beam-string model subjected to a moving harmonic excitation', *International Journal of Solids and Structures*, Volume 162, Pages 259-270, 2019, IF: 3.9.
- Soumyajit Roy, G.Chakraborty and Anirvan DasGupta, 'Coupled dynamics of a viscoelastically supported infinite string and a number of discrete mechanical systems moving with uniform speed', *Journal of Sound and Vibration*, Volume 415, Pages 184-209, 2018, IF: 3.655.

Conference Proceedings

- Soumyajit Roy, G.Chakraborty and Anirvan DasGupta, 'Interaction of a moving mechanical oscillator with a periodically supported infinite string, Proceedings of 25th International Congress on Sound and Vibration (ICSV25) 2018, Volume 4, Pages 2371 – 2378, Hiroshima, Japan, 8 – 12 July 2018.
- Soumyajit Roy and G.Chakraborty, 'Dynamic Stiffness of an Infinite Taut String Supported by a Viscoelastic Layer and Subjected to Moving Loads', Proceedings of National Conference on Advances in Dynamics, Vibration and Control 2016, Chapter 4, Pages 19 – 24, Narosa Publishing House, NIT Durgapur, Durgapur, India, 25 – 27 February 2016.
- Soumyajit Roy, S. K. Saha and Sasanka Sekhar Sinha, 'Correlation of Singularity Analyses Based on Position and Velocity Kinematics', Proceedings of 14th IFToMM World Congress – 2015, Volume 3, Pages 289 – 295, Taipei, Taiwan, 25 – 30 October 2015.

Conferences Attended

ICSV25	25th International Congress on Sound and Vibration To present a peer-reviewed paper.	Hiroshima, Japan, 8 - 12 Jul, 2018
nCADVC	National Conference on Advances in Dynamics, Vibration and Control To present a peer-reviewed paper.	NIT Durgapur, India, 25 - 27 Feb, 2016

Peer Review

Journal	Structural Engineering and Mechanics	2020
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Teaching Assistantship

Undergraduate Courses

NPTEL Online Certification Courses	Mechanism and Robot Kinematics	8-Week, 2018
	Kinematics of Mechanisms and Machines	8-Week, 2019
IIT Delhi IIT Kharagpur	Engineering Graphics Laboratory	3 Semesters, 2011-13
	Kinematics of Machines Laboratory	5 Semesters, 2013-18

Memberships

Jul 2018	Life long member of Sakura Science Club (Membership No. 18105765)	U-Tokyo, Japan
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Positions of Responsibility

B. C. Roy Hall, IIT Kharagpur	General Secretary, Garden and Library	Hall Council, 2015-16
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Certifications

Dec 2018	SAKURA Exchange Program in Science Successful participation in Japan-Asia Youth Exchange Program in Science (SAKURA Exchange Program in Science) held in the University of Tokyo and thereby achieving membership in SAKURA Science Club.	U-Tokyo, Japan
Feb 2001	Science Talent Search Examination Certificate of merit in Science Talent Search Examination in 6th standard for securing grade A.	Jatiya Vijnan Parishad

Industrial Training

May-Jun 2010	Summer Training in IFB Industries Limited Four week summer training programme in IFB Industries Limited at the end of 3rd year bachelor degree in Production Engineering with successful completion of project works at Production and Tool Room Department.	IFB, Kolkata
Jun-Jul 2009	Vacation Training in DSP, SAIL A 4-week vacation training programme at the end of 2nd year bachelor degree in Production Engineering with visits to the following departments in Durgapur Steel Plant, SAIL. 1) Coke Oven 2) Blast Furnace 3) BOF and CCP 4) B&B Mill 5) Section Mill 6) Skelp Mill 7) Merchant Mill 8) W&A Plant.	DSP, Durgapur

Course Information (Selected)

Postgraduate Courses

IIT Kharagpur and IIT Delhi	2011-2014
Wave propagation in continuous systems, Vibration isolation and control, Applied elasticity, Experimental modal analysis, Multibody systems and vibration design, Instrumentation and automatic control system, Advanced mechanical design, Vibration engineering, Design of mechanisms, Advanced mechanical design, Advanced FEM, FEM.	

Undergraduate Courses

Jadavpur University	2007-2011
Robotic technology, Automation, CNC machine and robotic lab, Mass production technology and automation, Design of engineering systems, Machine dynamics, Analysis and synthesis of mechanisms.	