

PRANESH ROY, Ph.D.

Assistant Professor

Department of Civil Engineering

Indian Institute of Technology (Indian School of Mines) (IIT-ISM) Dhanbad

Dhanbad, Jharkhand 826004, India

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E-mail: pranesh@iitism.ac.in , roypranesh1990@gmail.com[Google Scholar](#) , [ResearchGate](#) , [Official webpage](#) , [Publons](#) , [Orcid](#) , [Scopus](#) , [LinkedIn](#)

EDUCATION**Doctor of Philosophy** (August 2014 – April 2019), Structural Engineering, Department of Civil Engineering, Indian Institute of Science (IISc), Bangalore, India.

Research Advisor: Prof. Debasish Roy

Thesis Title: Non-classical Continuum Models for Solids using Peridynamics and Gauge theory

Master of Technology (July 2012 – July 2014), Structural Engineering, Department of Civil Engineering, Indian Institute of Technology (IIT), Delhi, India.

Research Advisors: Prof. A.K. Nagpal and Prof. Vasant Matsagar

Thesis Title: Seismic Evaluation of Chamara Dam for Scenario Earthquake

Bachelor of Engineering (Hons.) (August 2008 – June 2012), Department of Civil Engineering, Jadavpur University, Kolkata, West Bengal, India.

EXPERIENCE**Assistant Professor - Grade I** (June 2023 - Present)

Department of Civil Engineering, Indian Institute of Technology (Indian School of Mines) (IIT-ISM) Dhanbad

Assistant Professor - Grade II (June 2021 - June 2023)

Department of Civil Engineering, Indian Institute of Technology (Indian School of Mines) (IIT-ISM) Dhanbad

Postdoctoral Research Associate (July 2019 – June 2021)

Aerospace and Mechanical Engineering, The University of Arizona, USA.

Research Advisor: Prof. Erdogan Madenci

IISc Research Associate (December 2018 – June 2019)

Structural Engineering, Department of Civil Engineering, Indian Institute of Science (IISc), Bangalore, India.

Research Advisor: Prof. Debasish Roy

PUBLICATIONS**Refereed Articles****27** Choudhary, N., Gupta, T., Dwivedi, A., Samal, B.B., **Roy, P.**, Bhartiya, R., Bhattacharya, B. (2026). “Peridynamics modeling and experimental investigation of wave isolation in shells and mechanical metasurfaces”, *Thin-Walled Structures*, Elsevier, 225, Part B, 114850. <https://doi.org/10.1016/j.tws.2026.114850>**26** Mondal, S., Dhua, S., & **Roy, P.** (2026). “An electromechanical coupled peridynamics for investigating dynamic behavior of piezoelectric material”, *Applied Mathematical Modelling*, Elsevier, 157, 116815. <https://doi.org/10.1016/j.apm.2026.116815>**25** Dey, B., Sajal, & **Roy, P.** (2025). “Peridynamics modeling of multi-shell structures: Application to metasurfaces”, *Thin-Walled Structures*, Elsevier, 217, Part B, 113890. <https://doi.org/10.1016/j.tws.2025.113890>**24** Sah, B., Sajal, Choudhary, N., Kumar, K., & **Roy, P.** (2025). “Peridynamics model of viscoelasticity for beams and lattice structures”, *International Journal of Mechanical Sciences*, Elsevier, 301, 110545. <https://doi.org/10.1016/j.ijmecsci.2025.110545>

- 23 Kumar, K., Choudhary, N., Sajal, Sah, B., & **Roy, P.** (2025). "Peridynamics model of viscoelasticity for shells and metasurfaces", *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 444, 118169. <https://doi.org/10.1016/j.cma.2025.118169>
- 22 Choudhary, N., Sajal, & **Roy, P.** (2025). "Peridynamics beam plasticity theory: Yield surface for general cross-sectional geometry", *International Journal of Mechanical Sciences*, Elsevier, 295, 110249. <https://doi.org/10.1016/j.ijmecsci.2025.110249>
- 21 Sajal, & **Roy, P.** (2025). "Peridynamics Modeling of Locally Resonant Metamaterials", *Journal of Peridynamics and Nonlocal Modeling*, Springer, 7 (3). <https://doi.org/10.1007/s42102-025-00127-5>
- 20 Ranjana, K.N., Sajal, & **Roy, P.** (2025), "Riemannian geometry based peridynamics computational homogenization method for cellular metamaterials", *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 436, 117714. <https://doi.org/10.1016/j.cma.2024.117714>
- 19 Sajal, & **Roy, P.** (2025). "Peridynamics model of torsion-warping: Application to lattice beam structures", *Thin-Walled Structures*, Elsevier, 206, Part A, 112603. <https://doi.org/10.1016/j.tws.2024.112603>
- 18 Mahadeshwar, V., Sajal, & **Roy, P.** (2024), "Finite deformation peridynamics shell theory: Application to mechanical metasurfaces", *Thin-Walled Structures*, Elsevier, 205, Part B, 112401. <https://doi.org/10.1016/j.tws.2024.112401>
- 17 Kumar, A., Sajal, & **Roy, P.** (2024), "Peridynamics contact model: Application to healing using phase field theory", *International Journal of Mechanical Sciences*, Elsevier, 280, 109553. <https://doi.org/10.1016/j.ijmecsci.2024.109553>
- 16 Sajal, & **Roy, P.** (2024), "Finite deformation micropolar peridynamic theory: Variational consistency of wryness measure", *International Journal of Mechanical Sciences*, Elsevier, 271, 109306. <https://doi.org/10.1016/j.ijmecsci.2024.109306>
- 15 Behera, D., **Roy, P.**, & Madenci, E. (2024), "Peridynamic simulation of creep deformation and damage", *Continuum Mechanics and Thermodynamics*, Springer, 36, 1283–1304. <https://doi.org/10.1007/s00161-024-01295-3>
- 14 **Roy, P.**, Behera, D., & Madenci, E. (2023), "Peridynamic modeling of elastic instability and failure in lattice beam structures", *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 415, 116210. <https://doi.org/10.1016/j.cma.2023.116210>
- 13 Sajal, & **Roy, P.** (2023), "Peridynamics modeling of cellular elastomeric metamaterials: Application to wave isolation", *International Journal of Mechanical Sciences*, Elsevier, 254, 108456. <https://doi.org/10.1016/j.ijmecsci.2023.108456>
- 12 Behera, D., **Roy, P.**, Anicode, S. V. K., Madenci, E., & Spencer, B. (2022), "Imposition of local boundary conditions in peridynamics without a fictitious layer and unphysical stress concentrations", *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 393, 114734. <https://doi.org/10.1016/j.cma.2022.114734>
- 11 Behera, D., **Roy, P.**, & Madenci, E. (2021), "Peridynamic modeling of bonded-lap joints with viscoelastic adhesives in the presence of finite deformation", *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 374, 113584. <https://doi.org/10.1016/j.cma.2020.113584>
- 10 **Roy, P.**, Behera, D., & Madenci, E. (2020), "Peridynamic Simulation of Finite Elastic Deformation and Rupture in Polymers", *Engineering Fracture Mechanics*, Elsevier, 236, 107226. <https://doi.org/10.1016/j.engfracmech.2020.107226>
- 9 Behera, D., **Roy, P.**, & Madenci, E. (2020), "Peridynamic Correspondence Model for Finite Elastic Deformation and Rupture in Neo-Hookean Materials", *International Journal of Non-Linear Mechanics*, Elsevier, 126, 103564. <https://doi.org/10.1016/j.ijnonlinmec.2020.103564>
- 8 **Roy, P.**, Kumar, S., & Roy, D. (2020), "Cauchy–Maxwell Equations: A Space–Time Conformal Gauge Theory for Coupled Electromagnetism and Elasticity", *International Journal of Non-Linear Mechanics*, Elsevier, 126, 103542. <https://doi.org/10.1016/j.ijnonlinmec.2020.103542>

- 7 **Roy, P.**, Roy, D., & Reddy, J. N. (2019), “A Conformal Gauge Theory of Solids: Insights into a Class of Electromechanical and Magnetomechanical Phenomena”, *Journal of the Mechanics and Physics of Solids*, Elsevier, 130, 35-55. <https://doi.org/10.1016/j.jmps.2019.05.008>
- 6 **Roy, P.**, & Roy, D. (2019), “Peridynamics Model for Flexoelectricity and Damage”, *Applied Mathematical Modelling*, Elsevier, 68, 82-112. <https://doi.org/10.1016/j.apm.2018.11.013>
- 5 Chowdhury, S. R., **Roy, P.**, Roy, D., & Reddy, J. N. (2019), “A Modified Peridynamics Correspondence Principle: Removal of Zero-energy Deformation and Other Implications”, *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 346, 530-549. <https://doi.org/10.1016/j.cma.2018.11.025>
- 4 **Roy, P.**, Deepu, S. P., Pathrikar, A., Roy, D., & Reddy, J. N. (2017), “Phase Field based Peridynamics Damage Model for Delamination of Composite Structures”, *Composite Structures*, Elsevier, 180, 972-993. <https://doi.org/10.1016/j.compstruct.2017.08.071>
- 3 **Roy, P.**, Pathrikar, A., Deepu, S. P., & Roy, D. (2017), “Peridynamics Damage Model through Phase Field Theory”, *International Journal of Mechanical Sciences*, Elsevier, 128, 181-193. <https://doi.org/10.1016/j.ijmecsci.2017.04.016>
- 2 Rahaman, M. M., **Roy, P.**, Roy, D., & Reddy, J. N. (2017), “A Peridynamic Model for Plasticity: Micro-inertia based Flow Rule, Entropy Equivalence and Localization Residuals”, *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 327, 369-391. <https://doi.org/10.1016/j.cma.2017.07.034>
- 1 Chowdhury, S. R., **Roy, P.**, Roy, D., & Reddy, J. N. (2016), “A Peridynamic Theory for Linear Elastic Shells”, *International Journal of Solids and Structures*, Elsevier, 84, 110-132. <https://doi.org/10.1016/j.ijsolstr.2016.01.019>

IMPACT FACTORS OF THE JOURNALS

No. of Papers (27)	Journal	Impact Factor
1	Journal of the Mechanics and Physics of Solids	6.2
7	Computer Methods in Applied Mechanics and Engineering	7.6
6	International Journal of Mechanical Sciences	11.4
4	Thin-Walled Structures	8.3
2	Applied Mathematical Modelling	5.5
1	Composite Structures	7.8
1	International Journal of Solids and Structures	4.6
1	Engineering Fracture Mechanics	6.2
2	International Journal of Nonlinear Mechanics	3.4
1	Continuum Mechanics and Thermodynamics	3.0
1	Journal of Peridynamics and Nonlocal Modeling	-

BOOK

Madenci, E., **Roy, P.**, & Behera D. (2022), “Advances in Peridynamics” (Springer, eBook ISBN 978-3-030-97858-7, Print ISBN 978-3-030-97857-0) <https://link.springer.com/book/10.1007/978-3-030-97858-7>
[Amazon \(India\)](#) , [Amazon \(USA\)](#)

BOOK CHAPTERS

- 3 **Roy P.**, Behera D., Madenci E., Oterkus S. (2022) Peridynamic Modeling of Thermo-oxidative Degradation in Polymers. In: van Driel W.D., Yazdan Mehr M. (eds) Reliability of Organic Compounds in Microelectronics and Optoelectronics. Springer, Cham. https://doi.org/10.1007/978-3-030-81576-9_4
- 2 **Roy, P.**, Pathrikar, A., & Roy, D., “Phase Field based Peridynamics Damage Model: Application to Delamination of Composite Structures and Inelastic Response of Ceramics”, *Peridynamic Modeling, Numerical Techniques, and Applications, 1st Edition*, Editors: Erkan Oterkus, Selda Oterkus, & Erdogan Madenci, Elsevier, 1st May 2021, Paperback ISBN: 9780128200698. <https://doi.org/10.1016/B978-0-12-820069-8.00004-4>
- 1 **Roy, P.**, Pathrikar, A., & Roy, D., “Peridynamics Damage Model through Phase Field Theory”, *Peridynamic Modeling, Numerical Techniques, and Applications, 1st Edition*, Editors: Erkan Oterkus, Selda Oterkus, & Erdogan Madenci, Elsevier, 1st May 2021, Paperback ISBN: 9780128200698. [10.1016/B978-0-12-820069-8.00007-X](https://doi.org/10.1016/B978-0-12-820069-8.00007-X)

PROJECTS**R&D (ROLE: PI)****Externally funded**

Title of the Project: Design of mechanical metasurfaces for wave isolation applications by developing a large deformation peridynamics shell model

Funding organization: Defense Research & Development Organisation (Aeronautics R&D Board)

Principal Investigator: Dr. Pranesh Roy, IIT (ISM) Dhanbad

Co-Principal Investigator: Dr. Rahul Bhartiya, IIT (ISM) Dhanbad

Sanctioned fund: 25,38,266 Rs.

Duration: 2025-2028

Institute funded

Title of the Project: Peridynamic modelling of finite deformation and failure of additively manufactured lattice structures

Funding organization: IIT (ISM) Dhanbad, Faculty Research Scheme

Principal Investigator: Dr. Pranesh Roy

Sanctioned fund: 14,50,000 Rs.

Duration: 2022-2025

CONSULTANCY (ROLE: CO-CI)

Title of the Project: Scientific Study and Diversion Proposal for Ekra Jore, Kumari Jore and Nagari Jore in Jharia Coalfield of BCCL

Funding organization: M/s BCCL, Dhanbad

CI: Prof. Renu V.

Co-CI: Prof. S. Pasupuleti, Prof. Kironmala Chanda, Prof. Sowmiya Chawla, **Prof. Pranesh Roy**, Prof. D. G. Krishna

Sanctioned fund: 94,87,200 Rs.

PATENT

1 Kumar, K., Sah, B., Sajal, Choudhary, N., & **Roy, P.** (2025). "A method to measure peridynamics length scale parameter of materials", Indian Patent (Complete) Application No. 202531119989 filed on 01.12.2025 (Filed, currently under review).

EDITORIAL BOARD MEMBER

Scientific Reports (Nature Portfolio journal, Impact Factor: 3.9)

KEYNOTE ADDRESS

1 **Roy, P.**, "Nonclassical Continuum Models for Solids", Technical Session - 01, International Conference on Systems, Energy and Environment (ICSEE2022) at Government College of Engineering (GCE), Kannur, August 5, 2022, Kerala, India. (Online mode)

SESSION CHAIR

1 8th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Indore, December 9-11, 2022, India (Chaired 2 technical sessions)

INVITED TALKS

3 Title of the talk: Smart Civil Engineering Materials and Structures (presented on 13.11.2025) Program: A two-day workshop entitled "Advances in Application of High-Strength Reinforcement Bars in Construction of Concrete Structures" on 13-14 November 2025, organized by the Department of Civil Engineering, IIT (ISM) Dhanbad and sponsored by TATA TISCON.

2 Title of the talk: Direct Stiffness Method (presented on 03.01.2025) Program: A two-day workshop entitled "Recent Advancements and Best Practices in Civil Engineering with Emphasis on Application of High-strength Reinforcement Bars in Concrete Construction" on 3-4 January 2025, organized by the Department of Civil Engineering, IIT (ISM) Dhanbad and sponsored by TATA TISCON.

- 1 Title of the talk: Peridynamics modeling of damage, wave propagation, and contact-impact problems (presented in online mode on 09.07.2024). Program: EDP program from 8-12 July 2024 at IIIF Kolkata on "Blast Resilience of Civil Infrastructures: Emerging Global Trends".

CONFERENCE PAPERS AND PRESENTATIONS

- 2 Sajal, & **Roy, P.**, "A finite deformation micropolar peridynamic theory and its application to metamaterials", 16th World Congress on Computational Mechanics and 4th Pan American Congress on Computational Mechanics (WCCM 2024 / PANACM 2024), 21-26 July 2024, Vancouver, Canada. <https://doi.org/10.23967/c.wccm.2024.067> (My Ph.D. student Mr. Sajal received DST-SERB ITS Travel Grant from the Department of Science and Technology (DST) for presenting this work)
- 1 Behera, D., **Roy, P.**, Madenci, E., & Oterkus, S. (2021, June). Prediction of thermal oxidation damage in polymers by using peridynamics. In 2021 IEEE 71st Electronic Components and Technology Conference (ECTC) (pp. 1457-1463). IEEE. [10.1109/ECTC32696.2021.00232](https://doi.org/10.1109/ECTC32696.2021.00232)

CONFERENCE PRESENTATIONS

- 11 Dey, B., & **Roy, P.**, "Peridynamics modeling of multi-shell metasurfaces", 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, 2025, India (Abstract ID: 060).
- 10 Ranjana, K.N., & **Roy, P.**, "Two-scale Riemannian geometry based peridynamics computational homogenization technique" 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, 2025, India (Abstract ID: 065).
- 9 Choudhary, N., & **Roy, P.**, "Peridynamics plasticity theory for beams", 10th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Bhubaneswar, December 17-19, 2025, India (Abstract ID: 061).
- 8 Sajal, & **Roy, P.**, "Peridynamics Simulation of Wave Isolation in Metamaterials", 9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2024), 3rd - 7th June 2024, Lisbon, Portugal (ID: 356).
- 7 Sajal, & **Roy, P.**, "Study of wave propagation in polymers in the presence of local elastic instability and rupture using peridynamics", 8th International Congress on Computational Mechanics & Simulation (ICCMS), IIT Indore, December 9-11, 2022, India (Reference Id: ICCMS21_1657817514). (**Presenting author**)
- 6 Behera, D., **Roy, P.**, Madenci, E., & Spencer, B., 2021, "An Approach to Impose Boundary Conditions in Peridynamics: Removal of Displacement Kinks Without a Fictitious Layer", ASME 2021 International Mechanical Engineering Congress and Exposition, Virtual Conference, IMECE2021-71883.
- 5 Behera, D., **Roy, P.**, and Madenci, E., 2021, "Recent progress in peridynamic theory", 2nd International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey.
- 4 Madenci, E., Behera, D., and **Roy, P.**, 2021, "Recent progress in peridynamic theory", The International Workshop of Discrete Models, (Virtual), Brazil.
- 3 Madenci, E., **Roy P.**, & Behera, D., "Peridynamics Implementation of Liu Murakami Creep Damage Model in Moose Framework", IMECE2020-25220, *ASME's International Mechanical Engineering Congress and Exposition (IMECE)*, Virtual Conference: November 16 – 19, 2020.
- 2 **Roy, P.**, & Roy, D., "A Peridynamics Theory for Axisymmetric Structures", *19th International Conference on New Trends in Fatigue and Fracture*, October 8-10, 2019, Tucson, Arizona, USA. (**Presenting author**)
- 1 **Roy, P.**, & Roy, D., "Phase Field based Peridynamics Damage Model and Applications to Composite Delamination and Damage in Ceramics", IMECE2017-72950, *ASME's International Mechanical Engineering Congress and Exposition (IMECE)*, November 3-9, 2017, Tampa, Florida, USA. (**Presenting author**)

EVENT ORGANIZED

- 1 Jointly organized (with 5 faculty members) an event entitled "BUILD-2025" with two competitions: BUILD-MANIA and EXHIBIT-CRAZE, on 8th Dec 2025 as a part of centenary celebrations of IIT (ISM) Dhanbad.

WORKSHOP ORGANIZED

- 2 Organized a Two-Day Workshop as **coordinator** on "Advances in Application of High-Strength Reinforcement Bars in Construction of Concrete Structures", sponsored by TATA TISCON on 13th and 14th Nov 2025 and delivered

a lecture on “Smart Civil Engineering Materials and Structures”. (**Co-Coordinator:** Prof. Rahul Bhartiya, IIT (ISM) Dhanbad)

Sanctioned fund: 3,52,180 Rs.

1 Organized a Two-Day Workshop as **co-coordinator** on "Recent Advancements and Best Practices in Civil Engineering with Emphasis on Application of High-Strength Reinforcement Bars in Concrete Construction", sponsored by TATA TISCON on 3rd and 4th Jan 2025 and delivered a lecture on “Direct Stiffness Method”.

(**Coordinator:** Prof. Rahul Bhartiya, IIT (ISM) Dhanbad)

Sanctioned fund: 3,36,300 Rs.

GUEST LECTURES ORGANIZED

2 “CFD Modeling of Supercritical Narrow Channel Flows using OpenFOAM” by Mr. Subhojit Kadia on 12.04.2024 in the Civil Engineering Department, IIT (ISM) Dhanbad.

1 “An Inference Framework to Transfer Thermo-Elastic Properties of Short Fiber-Reinforced Polymers across Different Extrusion Deposition Additive Manufacturing Systems” by Dr. Gourab Ghosh on 24.04.2023 (online mode) in the Civil Engineering Department, IIT (ISM) Dhanbad.

SCHOLASTIC ACHIEVEMENTS

2 Ministry of Human Resources and Development (MHRD) scholarship during the course of Ph.D.

1 Ministry of Human Resources and Development (MHRD) scholarship during the course of M.Tech.

PARTICIPATIONS IN SHORT-TERM TRAINING PROGRAMS

2 Attended the vocational training from June 2, 2011 to June 28, 2011 in Bengal Unitech – Uniworld City Project Site, Rajarhat, Kolkata, provided by “*Simplex Infrastructures Limited*”.

1 Attended and successfully completed the part time course on “Computer Aided Design & Drafting using AUTOCAD/AUTOLISP” from June 21, 2010 to October 06, 2010 provided by “*Department of Electronics and Accreditation of Computer Classes (DOEACC SOCIETY)*”, Kolkata Centre.

COMPUTATIONAL SKILLS

Programming Languages: FORTRAN, MATLAB, C, C++, Mathematica

Softwares: ABAQUS, STAAD, SAP

NPTEL COURSE (UPCOMING)

Meshfree Methods and Peridynamics for Fracture Mechanics (12 Weeks, 30 Hours, Jul - Dec 2026)

https://onlinecourses.nptel.ac.in/e-learning/preview/noc26_ce88

<https://nptel.ac.in/courses/105105002>

<https://www.youtube.com/watch?v=eydwOb9gTLk>

TEACHING EXPERIENCE

Course Instructor (January 2026 - May 2026), IIT (ISM) Dhanbad

Course: **Finite Element Method in Structural Analysis (NCEC526)** (M.Tech. 2nd Semester)

Course: **Optimization Methods (CEO402)** (B.Tech. 7th Semester)

Course Instructor (August 2025 - December 2025), IIT (ISM) Dhanbad

Course: **Mechanics of Solid (NCEE201)** (B.Tech. 3rd Semester)

Lab: **Material Testing Laboratory (NCEC102)** (B.Tech. 1st Semester)

Course Instructor (January 2025 - May 2025), IIT (ISM) Dhanbad

Course: **Optimization Methods (CEO525)** (B.Tech. 7th Semester)

Lab: **Computational Laboratory (NCEC512)** (M.Tech. 1st year)

Course Instructor (August 2024 - December 2024), IIT (ISM) Dhanbad

Course: **Mechanics of Solid (CEE201)** (B.Tech. 3rd Semester) (jointly with a Mechanical Department faculty member)

Course: **Computational Solid Mechanics (CED501)** (B.Tech. 7th Semester)
 Lab: **Engineering Graphics Practical (CEI101)** (B.Tech. 1st Semester)

Course Instructor (January 2024 - May 2024), IIT (ISM) Dhanbad
 Course: **Optimization Methods (CEO525)** (B.Tech. 7th Semester)

Course Instructor (August 2023 - December 2023), IIT (ISM) Dhanbad
 Course: **Mechanics of Solid (CEE201)** (B.Tech. 3rd Semester) (jointly with a Mechanical Department faculty member)
 Course: **Computational Solid Mechanics (CED501)** (B. Tech. 7th Semester)
 Lab: **Engineering Graphics Practical (CEI101)** (B.Tech. 1st Semester)

Course Instructor (June 2023 - July 2023), IIT (ISM) Dhanbad
 Course: **Optimization Methods (CEO525)** (B.Tech. 7th Semester) (jointly with a Civil Department faculty member)

Course Instructor (January 2023 - May 2023), IIT (ISM) Dhanbad
 Course: **Optimization Methods (CEO525)** (B.Tech. 7th Semester)
 Lab: **Engineering Graphics Practical (CEI101)** (B.Tech. 2nd Semester)

Course Instructor (August 2022 - December 2022), IIT (ISM) Dhanbad
 Course: **Mechanics of Solid (CEE201)** (B.Tech. 3rd Semester) (jointly with a Mechanical Department faculty member)
 Course: **Computational Solid Mechanics (CED501)** (B.Tech. 7th Semester)
 Lab: **Engineering Graphics Practical (CEI101)** (B.Tech. 1st Semester)

Course Instructor (January 2022 - May 2022), IIT (ISM) Dhanbad
 Course: **Structural Dynamics (CEO404)** (B. Tech. 6th Semester)
 Lab: **Finite Element Method Lab (CEC18201)** (B. Tech. 8th Semester)
 Lab: **Engineering Graphics Practical (CEI101)** (B.Tech. 2nd Semester)

Course Instructor (August 2021 - December 2021), IIT (ISM) Dhanbad
 Course: **Mechanics of Solid (CEE201)** (B. Tech. 3rd Semester) (jointly with a Mechanical Department faculty member)
 Course: **Optimization Methods (CEO302)** (B. Tech. 5th Semester)

Teaching Assistant (August 2016 - December 2016)
 Structural Engineering, Indian Institute of Science (IISc), Bangalore, India.
 Course: **Solid Mechanics (CE-204)**

Teaching Assistant (January 2013 - April 2013)
 Structural Engineering, Indian Institute of Technology (IIT), Delhi, India.
 Course: **Design of Steel Structures (CEL332)**

COURSE DEVELOPED

Computational Solid Mechanics (CED501)

ADMINISTRATIVE RESPONSIBILITIES

Present

Faculty in-charge, Computational Lab, Civil Engineering, IIT (ISM) Dhanbad
 Faculty in-charge, Structural Analysis Lab, Civil Engineering, IIT (ISM) Dhanbad
 DPGC member, Civil Engineering, IIT (ISM) Dhanbad
 DGRC member, Civil Engineering, IIT (ISM) Dhanbad

Previous

Member, Standing Appellate Committee (SAC), All India Council for Technical Education (AICTE)
 Team Member, NBA, Civil Engineering, IIT (ISM) Dhanbad
 Timetable member, Civil Engineering, IIT (ISM) Dhanbad
 Faculty coordinator (from Civil Engineering Department), International Relations, IIT (ISM) Dhanbad
 Designed extension of old-D-type quarters at IIT (ISM) Dhanbad (along with faculty colleagues and junior technician)

STUDENTS

Ph.D. students

Ongoing

1. Mr. Nilesh Choudhary
2. Ms. Kumari Neelam Ranjana
3. Ms. Beauty Dey
4. Mr. Anirban Mondal
5. Mr. Ankaj Kumar (Junior Research Fellow, DRDO project, Joint supervisor: Prof. Rahul Bhartiya)
6. Mr. Pradyumn Kumar

Completed

1. Dr. Sajal (Currently an Assistant Professor in Applied Mechanics Department at Motilal Nehru National Institute of Technology (MNNIT), Allahabad)

(National Post Doctoral Fellow (NPDF, ANRF) at IIT Madras, PMRF, number of papers at the time of thesis defense: 8 (4 as first author and 4 as second author), international conference attended: 2 (in Portugal and Canada), conference paper: 1, International Travel Support from DST)

Awards

2. Ms. Beauty Dey received the 'Best oral presentation award' and a Springer eBook(s) gift voucher of a total amount of EUR 70 (Seventy Euros) for presenting the work "Peridynamics modeling of multi-shell metasurfaces" in the minisymposium- "MS 04 Advancements in computational modelling of smart and multiphysics systems and structures" of the '10th International Congress on Computational Mechanics and Simulation (ICCMS 2025)' held at IIT Bhubaneswar during 17-19 December 2025.
1. Dr. Sajal received Inder Mohan Thapar Research (IMTR) Award for the calendar year 2024 for best publication in 2023 in the Civil Engineering Department, IIT (ISM) Dhanbad (citation and cash prize of Rs. 32,000).

M.Tech. students

Ongoing

2. Mr. Abhijeet Kumar
1. Mr. Anshul Sharma

Completed

5. Mr. Kundan Kumar (2024-2025)
4. Mr. Bhushan Sah (2024-2025)
3. Ms. Vaibhavi Sandip Mahadeshwar (2023-2024)
2. Mr. Ankit Kumar (2023-2024)
1. Mr. Amit Kumar (2022-2023)

B.Tech. students

Ongoing

2. Katravathu Rahul Naik
1. Srirangam Lokesh

Completed

6. Mr. Girish Shivkumar Reure (2024-2025)
5. Mr. Krish Sahu (2024-2025)
4. Mr. Souhardya Samanta (2023-2024)
3. Ms. Keshar Lahare (2023-2024)
2. Mr. Ishaan Singh (2022-2023)

1. Mr. Khusiram Meena (2022-2023)

Summer interns

Completed

1. Mr. Satyaki Maity (May-July, 2022)

Short-term visiting scholars

1. Mr. Subrata Mondal (Ph.D. student of NIT Andhra Pradesh)