

Curriculum Vitae

Dr. Tanish Dey

Associate Professor

Department of Civil Engineering

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EDUCATION

- Ph.D.** Department of Civil Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India. (Award date: **10/06/2015**)
2015
Thesis topic: Non-linear Static and Dynamic Instability Analysis of Composite Cylindrical Shells and Panels Subjected to Non-Uniform Loadings.
- M.Tech.** Department of Civil Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India.
2010
Thesis topic: Static and Dynamic Instability Analysis of Cylindrical Shell Panels and Complete Cylindrical Shells [**CGPA: 9.59/10**].
- B.E.** Department of Civil Engineering, Bengal Engineering and Science University
2008
Shibpur, Howrah, India [**First Class Honours - CGPA: 78.58/100**].

PROFESSIONAL EXPERIENCE

- 13th April, 2022- Present Associate Professor, Department of Civil Engineering, Indian Institute of Technology (ISM), Dhanbad, India.
- 29th May, 2015- 12th April, 2022: Assistant Professor, Department of Civil Engineering, Indian Institute of Technology (ISM), Dhanbad, India.

HONORS AND AWARDS

- 2008: Scholarship for M.Tech./Ph.D. studies from India Ministry of Human Resource Development [Graduate Aptitude Test in Engineering (GATE) - **99.04** percentile, All India Rank- **81**].
- 2017: **International Travel Support (ITS)**, DST-SERB
- 2019: **DAAD Fellowship** for Bilateral Exchange of Academics, 2019
- 2022: **INAE Young Engineer Award 2022**, Indian National Academy of Engineering, **INAE Young Associate**
- 2023: **International Travel Support (ITS)**, DST-SERB

RESEARCH PROJECTS/ FUNDINGS

Completed/Ongoing/Approved

- **Title of Project:** Improved Lightweight Design of Variable Stiffness Composite Aircraft Panels Enabled by Tow-Steering and Machine Learning.

Role: PI

Name of Sponsoring Agency: **Science and Engineering Research Board (SERB), India**

Status: Ongoing (2024-2027)

- **Title of Project:** Design of Multi-stable Variable Stiffness Composite Shells for Morphing Applications.

Role: PI

Name of Sponsoring Agency: **Aeroronautics Research and Development Board (AR&DB), DRDO, India**

Status: Ongoing (2023-2026)

- **Title of Project:** Performance Study of Steel Oil Storage Tanks under Seismic Loading.

Role: PI

Name of Sponsoring Agency: **Ministry of Earth Sciences (MoES), India**

Status: Ongoing (2022-2025)

- **Title of Project:** Nonlinear vibrations and instability analysis of composite structural elements through advanced shear-deformation theories and homogenization based damage model.

Role: Co- PI

Name of Sponsoring Agency: **SPARC, MHRD, India**

Status: Ongoing (2019-2021)

- **Title of Projects:** Static Stability Analysis of Carbon Nanotube Reinforced Laminated Composite Plate Subjected to Axial Compressive Loading.

Role: Principal Investigator

Name of Sponsoring Agency: **Science and Engineering Research Board (SERB), India**

Status: Completed

- **Title of Projects:** Imperfection Sensitivity Analysis of Cylindrical Shells Subjected to Axial Compressive Loadings.

Role: Principal Investigator

Name of Sponsoring Agency: **IIT (ISM), Dhanbad under Faculty Research Scheme**

Status: Completed

- **Title of Projects:** Effects of Steel Fiber on the Mechanical Properties of Recycled Aggregate Concrete after Exposed to Elevated Temperatures

Role: Principal Investigator

Name of Sponsoring Agency: **IIT (ISM), Dhanbad under TEQUIP II**

Status: Completed

INDUSTRIAL PROJECTS

Completed/Ongoing/Approved

- **Title of Project:** Proof Checking for Drawings & Designs of Solarplant in Jodhpur.

Role: PI

Name of Sponsoring Agency: **M/s Enviro Infra Engineers Ltd., Delhi**

Status: Ongoing

- **Title of Project:** Vetting of Structural Drawings & Design for Jabalpur Zone Works of Military Engineering Services.

Role: PI

Name of Sponsoring Agency: **M/s Engineers and Consultancy, Koderma**

Status: Ongoing

- **Title of Project:** Proof Checking for Design and Drawings of Railway Truss Bridge (24.92m OWG).

Role: PI

Name of Sponsoring Agency: **M/s Metal Craft Engineering Pvt. Ltd., Kolkata**

Status: Completed

- **Title of Project:** Proof Checking for Design and Drawings of 17 MLD Sewerage Treatment Plant in Ramgarh Town, Jharkhand.

Role: PI

Name of Sponsoring Agency: **M/s Enviro Infra Engineers Ltd., Ramgarh**

Status: Ongoing

- **Title of Project:** Design validation for 3 numbers structural steel sheds and respective RCC foundation for stockpiles at NMDC Limited Bacheli/Kirandul (Chattisgarh) site.

Role: Co-PI

Name of Sponsoring Agency: **MECON Limited**

Status: Completed

- **Title of Project:** Proof Checking for Design and Drawings of Grinding Building Structures along with 3 Ball Mill Foundations and Downhill Conveyor of NMDC BP05 Project.

Role: Co-PI

Name of Sponsoring Agency: **M/s Kalpataru Projects International Limited, Bacheli**

Status: Ongoing

- **Title of Project:** Design Validation of Newly Erected Structural Pulley Frames, Drive Base Frames & Associated Civil Foundations of Downhill Conv. No. 28 & 29.

Role: Co-PI

Name of Sponsoring Agency: **N.M.D.C, Bacheli**

Status: Ongoing

- **Title of Project:** Proof checking for structural design and drawings of two buildings of NMDC 2 MTPA Pellet Plant at Nagarnar.

Role: Co-PI

Name of Sponsoring Agency: **M/s Engineering Design Research Centre, L&T Limited, Kolkata**

Status: Ongoing

- **Title of Project:** Proof checking for design and drawings of Phase-1 of Medical College at Bihar.

Role: Co-PI

Name of Sponsoring Agency: **M/s Inimitable Consultants Pvt. Ltd., New Delhi**

Status: Ongoing

RESEARCH GUIDANCE

PhD : 03 (Completed); 05 (Ongoing)

MTech: 15 (Completed); 02 (Ongoing)

PUBLICATIONS

Refereed papers in professional journals

1. **Tanish Dey** and L. S. Ramachandra, Non-linear stability analysis of laminated composite simply supported circular cylindrical shells subjected to partial axial loading, **Journal of Engineering Mechanics (ASCE)**, 140 (8), 04014058, 2014.
2. **Tanish Dey** and L. S. Ramachandra, Buckling and postbuckling response of sandwich panels under various mechanical edge loadings, **Composites Part B: Engineering**, 60, 537-545, 2014.
3. **Tanish Dey** and L. S. Ramachandra, Static and dynamic instability analysis of composite cylindrical shell panels subjected to partial edge loading, **International Journal of Non-linear Mechanics**, 64, 46-56, 2014.
4. **Tanish Dey** and L. S. Ramachandra, Dynamic stability of simply supported composite cylindrical shells under partial axial loading, **Journal of Sound and Vibration**, 353, 272-291, 2015.
5. **Tanish Dey** and L. S. Ramachandra, Linear and non-linear parametric instability behavior of cylindrical sandwich panels subjected to various mechanical edge loadings, **Mechanics of Advanced Materials and Structures**, 23 (1), 8-21, 2016.
6. **Tanish Dey**, Rajesh Kumar and S. K. Panda, Postbuckling and postbuckled vibration analysis of sandwich plates under non-uniform mechanical edge loadings, **International Journal of Mechanical Sciences**, 115-116, 226-237, 2016.
7. **Tanish Dey** and L. S. Ramachandra, Non-linear vibration analysis of laminated composite cylindrical shells, **Composite Structures**, 163, 89-100, 2017.
8. Amit Jadav, S. K. Panda and **Tanish Dey**, Non-linear dynamic instability analysis of mono-symmetric thin walled columns with various boundary conditions, **International Journal of Mechanical Sciences**, 126, 242-254, 2017.
9. Amit Jadav, S. K. Panda and **Tanish Dey**, Non-linear dynamic instability analysis of thin-walled stiffener beam subjected to uniform harmonic in-plane loading, **Journal of Sound and Vibration**, 408, 383-399, 2017.
10. R. S. Padhi, R. K. Patra, B. B. Mukherjee and **Tanish Dey**, Influence of incorporation of rice husk ash and coarse recycled concrete aggregates on properties of concrete, **Construction and Building Materials**, 173, 289-297, 2018.
11. Amit Jadav, S. K. Panda and **Tanish Dey**, Coupled dynamic instability analysis of thin walled columns subjected to harmonic axial loading, **International Journal of Applied Mechanics**, 10, 1850051-1-22, 2018.
12. C. S. Das, **Tanish Dey**, R. Dandapat, B. B. Mukharjee and J. Kumar, Performance evaluation of polypropylene fibre reinforced recycled aggregate concrete, **Construction and Building Materials**, 189, 649-659, 2018.
13. Sumeet Chakraborty, **Tanish Dey** and Rajesh Kumar, Stability and vibration analysis of CNT-Reinforced functionally graded laminated composite cylindrical shell panels using semi-analytical approach, **Composites Part B: Engineering**, 168, 1-14, 2019.
14. Rajesh Kumar, **Tanish Dey** and S. K. Panda, Instability and vibration analyses of FG cylindrical panels under parabolic axial compressions, **Steel and Composite Structures**, 31, 187-199, 2019.
15. **Tanish Dey** and L. S. Ramachandra, Computation of worst geometric imperfection profiles of composite cylindrical shell panels by minimizing the non-linear buckling load, **Applied Mathematical Modelling**, 74, 483-495, 2019.
16. Amit Jadav, Marco Amabili, S. K. Panda and **Tanish Dey**, Non-linear vibration response of functionally graded circular cylindrical shells subjected to thermo-mechanical loading, **Composite Structures**, 229, 111430, 2019.
17. **Tanish Dey**, Chandra Sekhar Das and Naval Mishra, Behaviour of confined recycled aggregate concrete under compressive loading: An experimental investigation, **Journal of Building Engineering**, 32, 101825, 2020.

18. Anjana Sahu, **Tanish Dey** and Sukanta Chakraborty, Influence of nano silica on mechanical and durability characteristic of mortar made by partial replacement of natural fine aggregate with recycled fine aggregate, **Silicon**, 1-15, 2020.
19. Amit Jadav, Marco Amabili, S. K. Panda, **Tanish Dey** and Rajesh Kumar, Nonlinear damped vibrations of three-phase CNT-FRC circular cylindrical shell, **Composite Structures**, 225, 112939, 2021.
20. Sumeet Chakraborty and **Tanish Dey**, Non-linear stability analysis of CNT reinforced composite cylindrical shell panel subjected to thermomechanical loading, **Composite Structures**, 255, 112995, 2021.
21. Vishal Singh, Rajesh Kumar, S. N. Patel and **Tanish Dey**, Non-linear Response and Buckling of Imperfect Laminated Composite Plates under In-Plane Pulse Forces, **Part C: Journal of Mechanical Engineering Science**, 1-17, 2021.
22. Vishal Singh, Rajesh Kumar, S. N. Patel, **Tanish Dey** and S. K. Panda, Instability and vibration analyses of functionally graded carbon nanotube-reinforced laminated composite (FG-CNTRLC) plate subjected to localized in-plane periodic loading, **Journal of Aerospace Engineering (ASCE)**, 34(6), 04021072, 2021.
23. Amit Jadav, Marco Amabili, S. K. Panda, **Tanish Dey** and Rajesh Kumar, Forced nonlinear vibrations of circular cylindrical sandwich shells with cellular core using higher-order shear and thickness deformation theory, **Journal of Sound and Vibration**, 510, 116283, 2021.
24. Amit Jadav, Marco Amabili, S. K. Panda and **Tanish Dey**, Nonlinear analysis of cylindrical sandwich shells with porous core and CNT reinforced face-sheets by higher-order thickness and shear deformation theory, **European Journal of Mechanics / A Solids**, 90, 104366, 2021.
25. Sumeet Chakraborty, **Tanish Dey** and Rajesh Kumar, Instability characteristics of damped CNT reinforced laminated shell panels subjected to in-plane excitations and thermal loading, **Structures**, 34, 2936-2949, 2021.
26. Anjana Sahu, **Tanish Dey** and Sukanta Chakraborty, Performance evaluation of sustainable recycled aggregate concrete with colloidal nano silica, **European Journal of Environmental and Civil Engineering**, 1-21, 2021.
27. **Tanish Dey**, Eelco Jansen, Rajesh Kumar and Raimund Rolfes, Instability characteristics of variable stiffness laminated composite curved panels under non-uniform periodic excitation, **Thin-Walled Structures**, 171, 108735, 2022.
28. Sumeet Chakraborty, **Tanish Dey**, V. Mahesh and D. K. Harursampath, Post-buckling and vibration analysis of randomly distributed CNT reinforced fibre composite plates under localised heating, **Mechanics of Advanced Materials and Structures**, 1-20, 2022.
29. Satyajeet Dash, Sumeet Chakraborty, **Tanish Dey**, Buckling and free vibration analysis of randomly distributed CNT reinforced composite beam, **European Journal of Mechanics-A/Solids**, 96, 104749, 2022.
30. Sumeet Chakraborty, **Tanish Dey**, Vishal Singh and Rajesh Kumar, Thermal Stability Analysis of Three-Phase CNTRFC Cylindrical Shell Panels, **Journal of Aerospace Engineering (ASCE)**, 35, 04022074, 2022.
31. Amit Yadav, Marco Amabili, S. K. Panda, **Tanish Dey** and Rajesh Kumar, A semi-analytical approach for instability analysis of composite cylindrical shells subjected to harmonic axial loading, **Composite Structures**, 296, 115882, 2022.
32. Rajesh Kumar, Vishal Singh, **Tanish Dey**, Dipendu Bhunia, S. N. Patel, Varun Jain, Nonlinear Analysis of Sandwich Plate with FG Porous Core and RD-CNTCFRC Face Sheets under Transverse Patch Loading, **Acta Mechanica**, 233 (11), 4589-4614, 2022.
33. Amit Yadav, Marco Amabili, S. K. Panda and **Tanish Dey**, Instability analysis of fluid-filled angle-ply laminated circular cylindrical shells subjected to harmonic axial loading, **European Journal of Mechanics-A/Solids**, 97, 104810, 2023.
34. Sumeet Chakraborty and **Tanish Dey**, Thermomechanical buckling and wrinkling characteristics of softcore sandwich panels with CNT reinforced composite face sheets, **European Journal of Mechanics-A/Solids**, 98, 104894, 2023.

35. Sumeet Chakraborty, Vishal Singh, **Tanish Dey** and Rajesh Kumar, Influence of carbon nanotubes on stability and vibration characteristics of plates and panels in thermal environment: a review, **Archives of Computational Methods in Engineering**, 31 (1), 147-178, 2024.
36. Sumeet Chakraborty, S Naskar, **Tanish Dey**, Rajesh Kumar and T Mukhopadhyay, Nonlinear Stability of Curved Multiphase Composite Panels: Influence of Agglomeration in Randomly Distributed Carbon Nanotubes with Nonuniform In-Plane Loads, **Journal of Aerospace Engineering (ASCE)**, 37 (3), 04024015, 2024.
37. Satyajeet Dash, **Tanish Dey** and Debarati Hati, Influence of thermo-mechanical loads on variable stiffness composite beams: a comprehensive study using semi-analytical and finite element approaches, **Mechanics Based Design of Structures and Machines**, 1-28, 2024.
38. Musitefa Adem Yimer and **Tanish Dey**, Dynamic response of concrete beams reinforced with GFRP and steel bars under impact loading, **Engineering Failure Analysis**, 161, 108329, 2024.
39. Varun Jain, Rajesh Kumar, S. N. Patel and **Tanish Dey**, Geometrically nonlinear dynamic analysis of a damped porous microplate resting on elastic foundations under in-plane nonuniform excitation, **Mechanics Based Design of Structures and Machines**, 52 (7), 4553-4598, 2024.
40. Sumeet Chakraborty, Satyajeet Dash and **Tanish Dey**, Non-linear stability characteristics of randomly distributed CNT-reinforced fiber composite beams under thermo-mechanical loadings, **Mechanics Based Design of Structures and Machines**, 52 (9), 7021-7044, 2024.
41. Sumeet Chakraborty, Amit Yadav, **Tanish Dey**, Rajesh Kumar and Ankur Singh, Semi-analytical framework for modelling of surface heating and its impact on nonlinear stability of nanotube reinforced doubly curved porous fiber composite panels, **Mechanics of Materials**, 198, 105126, 2024.
42. Varun Jain, Rajesh Kumar, **Tanish Dey**, S. N. Patel and Gaurav Watts, A meshfree formulation for size-dependent thermal buckling and post-buckling behaviour of porous microplates on elastic foundation subjected to localized heating, **Thin-Walled Structures**, 205, 112451, 2024.
43. Musitefa Adem Yimer and **Tanish Dey**, Dynamic behavior of full-scale GFRP bar-reinforced ultra-high-performance concrete-encased concrete-filled double-skin steel tubular bridge columns under lateral impact loading, **Structures**, 70, 107674, 2024.
44. Satyajeet Dash, **Tanish Dey** and Rajesh Kumar, Instability characteristics of variable stiffness composite panels under thermomechanical loadings, **Acta Mechanica**, 1-24, 2024.

Refereed papers in conference proceedings/Conference presentations

1. **Tanish Dey** and L. S. Ramachandra, Dynamic instability of stiffened composite complete cylindrical shells, **Fifth International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM)**, 5, 817-819, Kharagpur, India, 2010.
2. L. S. Ramachandra and **Tanish Dey**, Nonlinear static and dynamic stability of cylindrical shells, **Third Asian Conference on Mechanics of Functional Materials and Structures (ACMFMS 2012)**, 3, 321-324, New Delhi, India, 2012.
3. L. S. Ramachandra and **Tanish Dey**, Static stability analysis of cylindrical shells, **National Conference on Recent Advances in Mechanics and Materials**, 11-21, Burla, India, 2012.
4. Sukanta Chakraborty and **Tanish Dey**, Mesh-less simulation of crack propagation in Functionally Graded Materials (FGM) subjected to impact loading, **20th International Conference on Composite Structures (ICCS20)**, Paris, France, 2017.
5. **Tanish Dey** and Sukanta Chakraborty, Dynamic instability analysis of FGM cylindrical shell panels subjected to parabolic edge loading and thermal environment, **20th International Conference on Composite Structures (ICCS20)**, Paris, France, 2017.
6. Amit Yadav, S. K. Panda and **Tanish Dey**, Doubly coupled vibration and dynamic instability analysis of thin-walled columns, **International Conference on Theoretical, Applied, Computational and Experimental Mechanics**, Kharagpur, India, 2017.
7. Sumeet Chakraborty, Pravara Yadav and **Tanish Dey**, Free Vibration Analysis of Laminated Composite Plates: Experimental and Numerical Approach, **International Conference on Advances in Dynamics, Vibration and Control (ICADV-2018)**, Durgapur, India, 2018.

8. Sumeet Chakraborty and **Tanish Dey**, Non-Linear Stability Analysis of CNT-Reinforced Functionally Graded Laminated Composite Plates, **Asian Joint Symposium on Aerospace Engineering 2018**, Gyeongju, Republic of Korea, 2018.
9. **Tanish Dey** and Sumeet Chakraborty, Instability Analysis of CNT-Reinforced Functionally Graded Laminated Composite Cylindrical Shell Panels Subjected to Static and Periodic Axial Compression, **International Conference on Nonlinear Solid Mechanics (ICoNSoM 2019)**, Rome, Italy 2019.
10. **Tanish Dey** and Sumeet Chakraborty, Dynamic Instability Analysis of CNT-Reinforced Laminated Composite Plates Subjected to Periodic Non-Uniform Axial Loadings, **23rd International Conference on Composite Structures (ICCS23)**, Porto, Portugal, 2020.
11. Sumeet Chakraborty and **Tanish Dey**, Stability of CNT reinforced plates under thermal loading, **1st Online International Conference on Recent Advances in Computational and Experimental Mechanics**, Kharagpur, India, 2020.