

## Curriculum Vitae

### **Dr. Tanish Dey**

Assistant Professor

Department of Civil Engineering

Indian Institute of Technology (ISM), Dhanbad

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### **PERSONAL INFORMATION**

Date & place of birth: 05/05/1987; Howrah, West Bengal

Nationality: Indian

Family Status: Married

Home coordinates: C/O- P. C. Mal;

P.O.- Hijli Co-operative, Kharagpur,

Paschim Medinipur, West Bengal, 721306, India.

### **RESEARCH INTERERSTS**

Non-linear Dynamics, Stability of Structures, Plates and Shells Structures, Multi-functional Composites, Smart Structures, Blast Loading, Concrete Structures.

### **EDUCATION**

- Ph.D.** Department of Civil Engineering, Indian Institute of Technology Kharagpur, 2015 Kharagpur, India.  
**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, 2010 Kharagpur, India.  
**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**

- July, 2010- Sep, 2014: Senior Research Fellow, Department of Civil Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India.  
  
Investigation of static and dynamic instabilities in non-linear laminated composite and sandwich cylindrical shell panels under non-uniform axial loadings. Analytical solutions verified numerically via finite elements (Abaqus).
- Sep, 2014- March, 2015: Surveyor, Research and Rule Development Division, Indian Register of Shipping, Mumbai, India.  
  
Work was focused on the study of dynamic response of ship structural components subjected to underwater blast loadings using a combined analytical and numerical approach.

May, 2015- Present: Assistant Professor, Department of Civil Engineering, Indian Institute of Technology (ISM), Dhanbad, India.

### **TEACHING EXPERIENCE**

July 2008- April 2014: Graduate Teaching Assistant, Department of Civil Engineering, Indian Institute of Technology Kharagpur, Kharagpur, India.  
Courses assisted for undergraduate: Engineering Mechanics, Structural Analysis, CAD Lab, Experimental Stress Analysis Lab.

May 2015-Present: Assistant Professor, Department of Civil Engineering, Indian Institute of Technology (ISM), Dhanbad, Dhanbad.  
Courses teaching: Design of Reinforced Concrete Structures, Theory of Elasticity and Plasticity and Theory of Elastic Stability

### **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**].

2019: **DAAD Fellowship** for Bilateral Exchange of Academics, 2019

### **LANGUAGES AND SKILLS**

Native language: Bengali

English: Advanced (reading, writing, oral)

Computer languages: Fortran, Matlab, Mathematica, Abaqus

### **RESEARCH PROJECTS**

- **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)**

Total Amount (in Rupees): **29.93 Lakh**

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**

Total Amount (in Rupees): **9.80 Lakh**

Status: Completed

- **Title of Projects:** Effects of Steel Fiber on the Mechanical Properties of Recycled

Aggregate Concrete after Exposures to Elevated Temperatures

**Role:** Principal Investigator

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

Total Amount (in Rupees): **2.00 Lakh**

Status: Completed

- **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**

Total Amount (in Rupees): **49.91 Lakh**

Status: Ongoing (2019-2021)

## **RESEARCH GUIDANCE**

**PhD :** 03 (Ongoing)

**MTech:** 09 (Completed); 01 (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**, *Accepted*, 2020.
18. 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.
19. 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.

20. 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**, Accepted, 2021.
21. 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)**, Accepted, 2021.
22. 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.
23. 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**, Accepted, 2021.

#### **Refereed papers in conference proceedings**

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, **20<sup>th</sup> 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, **20<sup>th</sup> 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, Pravar Yadav and **Tanish Dey**, Free Vibration Analysis of Laminated Composite Plates: Experimental and Numerical Approach, **International Conference on Advances in Dynamics, Vibration and Control (ICADVC-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, **23<sup>rd</sup> 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.