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Father: Dr. Lakshmi Nandan Bora

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Children: Raagini (daughter), Aarohan Nandan (son)

Education:

Ph. D.: Department of Engineering Mathematics, Technical University of Nova Scotia (now known as DalTech, Dalhousie University), Halifax, Canada, 1998.

Thesis: The Interaction of Water Waves with Submerged Spheres and Circular Cylinders.

M.Sc. (Specialization – Applied Mathematics): University of Delhi, 1991. First Class

B.Sc.: Cotton College, Gauhati University, 1988. First Class Major in Mathematics with distinction (subsidiary subjects: Physics and Statistics).

Research Areas: Fluid Dynamics, Fractional Differential Equations, Mathematical Biology

Research Topics: Wave-Structure Interactions, Flow over Uneven Bottom Topography, Multi-layer Fluid, Trapped Waves, Analytical Modeling for Problems of Flows through Porous Media, Linear and Nonlinear Sloshing, River Dynamics, Special Functions, Fractional Differential Equations, Controllability.

Visits Abroad: Canada, Germany, Poland, France, Republic of South Africa, New Zealand, Malaysia, Japan, China, Thailand, Taiwan, Hong Kong, The Netherlands, Finland, Spain, Sweden, Austria, Czech Republic.

Work Experience:

1. Teaching cum Research Assistant, Dalhousie University, Sept'1993-Dec'1997.
2. Senior Lecturer, IIT Guwahati Jan'1999-June'2001.
3. Assistant Professor, IIT Guwahati, June'2001-Feb'2007.
4. Associate Professor, IIT Guwahati, Feb'2007-June'2012.
5. Professor (Level 14A), IIT Guwahati, June'2012-Dec'2021.
6. Senior Professor (Level 15 – HAG), IIT Guwahati, Dec'2021-present

Complete Publication List:

Journal: (150 papers)

1. Sunil Kundu and **Swaroop Nandan Bora** (2026), Solutions of nonlinear Ψ -Hilfer neutral fractional differential equations: Existence, stability and a numerical perspective (*doi: 10.1088/1402-4896/ae9654*), *Physica Scripta*, Volume 101, Paper ID 335201 (Published online since August 14, 2026) 15 Pages.
2. Sunanda Saha, **Swaroop Nandan Bora**, Wojciech Sulisz, Ritu Rani (2026), Hydrodynamic analysis of an offshore hybrid energy platform: oscillating water column integrated with a wind turbine comprising monopile/bucket foundation (*doi:10.1007/s40722-026-00533-x*), *Journal of Ocean Engineering and Marine Energy*, Volume 12, 2175-2199.
3. Mahesh Kumar Nehra and **Swaroop Nandan Bora** (2026), Impact of sea-bed trench on the deflection of a floating ice sheet due to a moving load (*doi:10.1115/1.4072080*), *Journal of Offshore Mechanics and Arctic Engineering* Volume 148, Paper ID 051603 (Published online since April 24, 2026) 10 Pages.
4. Nabanita Karmakar and **Swaroop Nandan Bora** (2026), Wave scattering by a composite porous breakwater mounted on a rigid pedestal and placed in front of a rigid tunnel over a porous sea-bed (*doi:10.1016/j.oceaneng.2026.125695*), *Ocean Engineering*, Volume 350, Paper ID 125695 (Published online since April 24, 2026) 20 Pages.
5. Sohini Pal and **Swaroop Nandan Bora** (2026), Water wave propagation generated by a moving landslide over a porous sea-bed (*doi:10.1063/5.0313510*), *Physics of Fluids*, Volume 38(3), Paper ID 036604 (Published online since March 9, 2026) 18 Pages.
6. Nabanita Karmakar and **Swaroop Nandan Bora** (2026), Effect of two thin porous barriers and a porous sea-bed on water wave scattering and force mitigation in protecting a rectangular rigid tunnel (*doi:10.1007/s40722-026-00481-6*), *Journal of Ocean Engineering and Marine Energy*, Volume 12, 1165-1190.
7. Amin Mahdavi-Meymand, Wojciech Sulisz and **Swaroop Nandan Bora** (2026), Application of swarm-based deep neural networks and ensemble models for reconstruction of specific conductance data (*doi:10.1038/s41598-026-38136-z*), *Scientific Reports*, Volume 16, Paper ID 7292 (Published online since February 4, 2026) 17 Pages.
8. Shiva Kandpal and **Swaroop Nandan Bora** (2025), Influence of space- and time-dependent lateral inflow for a non-inertia wave model in a finite-length channel with a stage hydrograph imposed at the downstream end (*doi:10.1007/s11600-025-01767-3*), *Acta Geophysica*, Volume 74, Paper ID 40 (Published online since December 24, 2025) 30 Pages.
9. Mahesh Kumar Nehra and **Swaroop Nandan Bora** (2025), Deflection of a floating ice sheet under a moving load: influence of uniform current and elastic bottom (*doi:10.1016/j.jfluidstructs.2025.104465*), *Journal of Fluids and Structures*, Volume 140, Paper ID 104465 (Published online since November 11, 2025) 20 Pages.

10. Sunanda Saha, **Swaroop Nandan Bora** and Santu Das (2023), Time-dependent water wave scattering by a bottom-mounted porous compound cylinder fitted with an annular porous lid, (*doi:10.1080/17455030.2023.2166150*), *Waves in Random and Complex Media*, Volume 36(2), 1989-2010 (Published online since January 25, 2023).
11. Debananda Basua and **Swaroop Nandan Bora** (2025), Nonlinear analysis for Hilfer fractional differential equations (*doi:10.1016/j.fraope.2025.100383*), *Franklin Open*, Volume 13, Paper ID 100383 (Published online since October 8, 2025) 7 Pages.
12. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2025), New observer and state estimates to nonlinear systems with real-order derivatives (*doi:10.1016/j.fraope.2025.100323*), *Franklin Open*, Volume 12, Paper ID 100323, (Published online since July 26, 2025) 15 Pages.
13. Shilpi Jain and **Swaroop Nandan Bora** (2025), Scattering of oblique incident waves by a floating structure with a porous wall fitted on its vertical sides in the presence of a varying bottom topography (*doi:10.1063/5.0276823*), *Physics of Fluids*, Volume 37(8), Paper ID 083608, (Published online since August 7, 2025) 18 Pages.
14. Sunil Kundu and **Swaroop Nandan Bora** (2025), On the Ulam-Hyers-Rassias-Mittag-Leffler stability of the solution to a Ψ -Hilfer abstract fractional differential equation, *International Journal of Theoretical Physics* (*doi:10.1007/s10773-025-06055-w*), Volume 64, Paper ID 190, (Published online since June 28, 2025) 16 Pages.
15. Nabanita Karmakar and **Swaroop Nandan Bora** (2025), Impact of a composite rectangular porous breakwater in the scattering of water waves by a submerged rectangular tunnel, *International Journal of Applied Mechanics*, Volume 17(8), Paper ID 2550056, (Published online since July 10, 2025) 30 Pages.
16. Mahesh Kumar Nehra and **Swaroop Nandan Bora** (2025), Response of a floating ice sheet due to a moving load in the presence of an undulating sea bottom (*doi:10.1063/5.025552*), *Physics of Fluids*, Volume 37(4), Paper ID 043603 (Published online since April 2, 2025) 12 Pages.
17. Sunanda Saha, **Swaroop Nandan Bora** and Santu Das (2025), Damping of ocean waves by a porous disk submerged in a two-layer fluid (*doi:10.1016/j.euromechflu.2025.204263*), *European Journal of Mechanics – B/ Fluids*, Volume 113, Paper ID 204263 (Published online since April 2, 2025) 14 Pages.
18. Sunil Kundu and **Swaroop Nandan Bora** (2025), On Ulam type stability of the solution to a Ψ -Hilfer abstract fractional functional differential equation (*doi:10.1088/1402-4896/adbdff*), *Physica Scripta*, Volume 100 (4), Paper ID 045235 (Published online since March 19, 2025) 13 Pages.
19. Shilpi Jain and **Swaroop Nandan Bora** (2025), Scattering of oblique incident waves by a rigid floating structure in the presence of two surface-piercing thick porous breakwaters: pattern of reflection, dissipation and wave forces (*doi:10.1016/j.jfluidstructs.2025.104285*), *Journal of Fluids and Structures*, Volume 135, Paper ID 104285 (Published online since March 6, 2025) 34 Pages.
20. Saniya Suhail, Sunanda Saha, Koushik Kanti Barman and **Swaroop Nandan Bora** (2025), Impact of a porous structure placed at the sea-bed in wave scattering around

- ice floes ([doi:10.1016/j.jfluidstructs.2025.104280](https://doi.org/10.1016/j.jfluidstructs.2025.104280)), *Journal of Fluids and Structures*, Volume 134, Paper ID 104280 (Published online since February 23, 2025) 17 Pages.
21. Debananda Basua and **Swaroop Nandan Bora** (2025), Nonlinear analysis for sequential multipoint fractional boundary value problems with ψ -Hilfer fractional derivative, *Journal of Integral Equations and Applications*, Volume 37(3), 285-295.
 22. Sunanda Saha, Koushik Kanti Barman, **Swaroop Nandan Bora** and Chia-Cheng Tsai (2025), Wave scattering by a pair of coaxial surface-piercing porous cylinder and a bottomless thick annular cylinder ([doi:10.1063/5.0254942](https://doi.org/10.1063/5.0254942)), *Physics of Fluids*, Volume 37(2), Paper ID 022140 (Published online since February 20, 2025) 13 Pages.
 23. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2025), New formulation of Lyapunov direct method for nonautonomous real-order systems ([doi:10.15388/namc.2025.60.38471](https://doi.org/10.15388/namc.2025.60.38471)), *Nonlinear Analysis: Modeling and Control*, Volume 60(2), 196-211.
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 27. Abhijit Shit and **Swaroop Nandan Bora** (2024), Fractional model for blood flow in a stenosed artery under MHD effect through a porous medium ([doi:10.1142/S1758825124501011](https://doi.org/10.1142/S1758825124501011)), *International Journal of Applied Mechanics*, Volume 16(9), Paper ID 2450101 (Published online since November 27, 2024) 20 pages
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 30. Shilpi Jain and **Swaroop Nandan Bora** (2024), Impact of a vertical porous barrier in the reflection of water waves and mitigation of wave forces on a rigid floating structure in the presence of an elevated bottom and a trench

- (doi:10.1016/j.euromechflu.2024.06.003), *European Journal of Mechanics - B Fluids*, Volume 107, 29-39.
31. Matap Shankar and **Swaroop Nandan Bora** (2024), Ulam-Hyers stability of non-instantaneous impulsive integro-differential equation of real-order with Caputo derivative with application to circuits, *Journal of Nonlinear Evolution Equations and Applications*, 2024(4), 45-65.
 32. Shiva Kandpal and **Swaroop Nandan Bora** (2024), Diffusive wave model in a finite length channel with a concentrated lateral inflow subject to different types of boundary conditions (doi:10.1063/5.0186831), *Physics of Fluids*, Vol. 36(4), Paper ID 045158, 21 Pages.
 33. Abhijit Shit and **Swaroop Nandan Bora** (2024), Incorporation of concentration gradient of blood nutrients in ESR fractional model with non-zero uniform average blood velocity (doi:10.1002/mma.10125), *Mathematical Methods in the Applied Sciences*, (Online since April 20, 2024), 17 Pages.
 34. Shilpi Jain and **Swaroop Nandan Bora** (2024), Impact of two vertical porous barriers in reflection of water waves and mitigation of wave forces on a rigid floating structure with consideration of uniform current over a porous sea-bed (doi:10.1142/S1758825124500492), *International Journal of Applied Mechanics*, Vol. 16(4), Paper ID 24500493, 32 pages (Published online since March 27, 2024).
 35. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2024), New method for linearization of non-autonomous nonlinear real-order systems (doi:10.1140/epjp/s13360-024-04995-6), *The European Physical Journal Plus*, Volume 139:249 (Published online since March 13, 2024), 10 Pages.
 36. Shiva Kandpal and **Swaroop Nandan Bora** (2024), Impact of a concentrated lateral inflow and stage-discharge relation imposed at the downstream end of a finite channel for the diffusive wave model (doi: 10.1007/s11600-024-0103-9), *Acta Geophysica*, Volume 72, 3683-3701.
 37. Koushik Kanti Barman and **Swaroop Nandan Bora** (2024), A mathematical study of water wave interaction with a thin perforated barrier in a two-layer fluid over a permeable bottom (doi:10.1177/14750902231161120), *Proceedings of the Institution of Mechanical Engineers, Part M: Journal of Engineering for the Maritime Environment*, Vol. 238(1), 68-89.
 38. Sunanda Saha and **Swaroop Nandan Bora** (2024) Analysis of wave force and wave run-up acting on an impermeable vertical circular cylinder surrounded by multiple thick porous layers (doi:10.1115/1.4063497), *Journal of Offshore Mechanics and Arctic Engineering*, Vol. 146, Paper ID 031202 (Published online since September 25, 2023) 15 Pages.
 39. Abhijit Sarkar and **Swaroop Nandan Bora** (2021), Surge and heave hydrodynamic coefficients for a combination of a porous and a rigid cylinder in motion in finite ocean depth (doi:10.1080/17455030.2021.1985744), *Waves in Random and Complex Media*, Vol. 34(5) (Published online since October 11, 2021).
 40. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), New comparison method for nonautonomous Caputo-type time-delay systems (doi: 10.7153/fdc-2023-13-08), *Fractional Differential Calculus*, Vol. 13(2), 141-148.
 41. Matap Shankar and **Swaroop Nandan Bora** (2023), Caputo-Fabrizio fractional-order systems: periodic solution and stabilization of non-periodic solution with

- application to Gunn diode oscillator ([doi:10.1088/1402-4896/ad12](https://doi.org/10.1088/1402-4896/ad12)), *Physica Scripta*, Vol. 98(12), Paper ID 125242 (Published online since November 24, 2023) 15 pages.
42. Matap Shankar and **Swaroop Nandan Bora** (2023), Stabilization and asymptotic stability of the Caputo-Fabrizio fractional-order linear and semilinear evolution equations ([doi:10.1016/j.fraope.2023.100043](https://doi.org/10.1016/j.fraope.2023.100043)), *Franklin Open* (A journal of Franklin Institute), Vol. 5, Paper ID 100043, (Published online since October 19, 2023) 10 Pages.
 43. Shiva Kandpal and **Swaroop Nandan Bora** (2023), Analytical Solution for Linearized Saint-Venant Equations with a Uniformly Distributed Lateral Inflow in a Finite Rectangular Channel ([doi:10.1007/s11269-023-03623-9](https://doi.org/10.1007/s11269-023-03623-9)), *Water Resources Management*, Vol. 37, 5655-5676.
 44. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Limiting behaviour of non-autonomous Caputo-type time-delay systems and initial-time on the real number line ([doi:10.1007/s40314-023-02459-8](https://doi.org/10.1007/s40314-023-02459-8)), *Computational and Applied Mathematics*, Vol. 42, Article ID 313 (Published online since September 24, 2023) 16 Pages.
 45. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), New comparison results for nonlinear Caputo-type real-order systems with applications ([doi:10.1007/s11071-023-08846-4](https://doi.org/10.1007/s11071-023-08846-4)), *Nonlinear Dynamics*, Vol. 111, 19249-19264.
 46. Koushik Kanti Barman and **Swaroop Nandan Bora** (2023), Impact of a porous structure in mitigating wave effect on a floating elastic plate in a two-layer fluid ([doi:10.1017/s00419-023-02475-4](https://doi.org/10.1017/s00419-023-02475-4)), *Archive of Applied Mechanics*, (Published online since July 7, 2023) 21 Pages.
 47. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Limiting behavior of non-autonomous Caputo-type time-delay systems and initial-time on the real number line ([doi:10.1063/5.0147809](https://doi.org/10.1063/5.0147809)), *Franklin Open* (A journal of Franklin Institute), Vol. 4, Paper ID 100025, (Published online since July 7, 2023). 7 Pages
 48. **Swaroop Nandan Bora**, Santu Das, Mike H. Meylan, Sunanda Saha and Siming Zheng (2023), Time-dependent water wave scattering by a marine structure consisting of an array of compound porous cylinders ([doi:10.1063/5.0147809](https://doi.org/10.1063/5.0147809)), *Physics of Fluids*, Vol. 35(7), 077103, 17 Pages.
 49. Bandita Roy and **Swaroop Nandan Bora** (2023), Impulsive differential equations with Caputo fractional derivative and Erdelyi-Kober type boundary conditions, *Palestine Journal of Mathematics*, Vol 12(3), 133-150.
 50. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Non-negativity, convergence and bounds of non-homogeneous linear time-varying real order systems with application to electrical circuit system ([doi:10.1007/s00034-023-02368-5](https://doi.org/10.1007/s00034-023-02368-5)), *Circuits, Systems, and Signal Processing*, Vol. 42, 5207-5232.
 51. Shilpi Jain and **Swaroop Nandan Bora** (2023), Oblique water wave scattering by a floating bridge fitted with a rectangular porous structure and the resulting waveload mitigation ([doi:10.1016/j.oceaneng.2023.114132](https://doi.org/10.1016/j.oceaneng.2023.114132)), *Ocean Engineering*, Vol. 275, 114132 (Published online since March 15, 2023) 12 Pages.
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53. Sunanda Saha, Santu Das and **Swaroop Nandan Bora** (2023), Trapped waves within the blocking frequency under compressed sea ice and two-dimensional current, ([doi:10.1016/j.marstruc.2022.103336](https://doi.org/10.1016/j.marstruc.2022.103336)), *Marine Structures*, Vol. 87, Article No 103336 (Published online since November 19, 2022) 18 Pages.
54. **Swaroop Nandan Bora** and Matap Shankar (2023), Ulam-Hyers stability of second-order convergent finite difference scheme for first- and second-order nonhomogeneous linear differential equations with constant coefficients, ([doi:10.1007/s00025-022-01791-5](https://doi.org/10.1007/s00025-022-01791-5)), *Results in Mathematics*, Vol. 78(1), Article No 17 (Published online since November 19, 2022) 18 Pages.
55. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), New criteria for asymptotic stability of a class of nonlinear real order time-delay systems, ([doi:10.1007/s11071-022-08060-8](https://doi.org/10.1007/s11071-022-08060-8)), *Nonlinear Dynamics*, Vol. 111, 4469-4484.
56. Matap Shankar and **Swaroop Nandan Bora** (2022), Generalized Ulam-Hyers-Rassias stability of solution of the Caputo fractional non-instantaneous impulsive integro-differential equation and its application to fractional RLC circuit ([doi:10.1007/s00034-022-02217-x](https://doi.org/10.1007/s00034-022-02217-x)), *Circuits, Systems, and Signal Processing*, (Published online since October 29, 2022) 25 Pages.
57. Abhijit Shit and **Swaroop Nandan Bora** (2022), ESR fractional model with non-zero uniform average blood velocity, ([doi:10.1007/s40314-022-02072-1](https://doi.org/10.1007/s40314-022-02072-1)), *Computational and Applied Mathematics*, Vol. 41, 354 (Published online since October 19, 2022) 15 Pages.
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60. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2022), New asymptotic stability results for nonautonomous nonlinear fractional order systems ([doi:10.1093/imamci/dnac019](https://doi.org/10.1093/imamci/dnac019)), *IMA Journal of Mathematical Control and Information*, Vol. 39, 951-967.
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65. Ayan Chanda and **Swaroop Nandan Bora** (2022), Different approaches in scattering of water waves by two submerged porous plates over an elastic sea-floor (*doi:10.1080/03091929.2022.2025792*), *Geophysical and Astrophysical Fluid Dynamics*, Vol. 116(3), 206-233.
66. Sunanda Saha, Sanjay Kumar Mohanty and **Swaroop Nandan Bora** (2022), Flexural gravity wave resonance in the presence of current (*doi: 10.1061/ (ASCE)WW.1943-5460.0000703*), *Journal of Waterway, Port, Coastal, and Ocean Engineering*, ASCE, Vol. 148(3), 04022003 (Published online since February 7, 2022), 10 Pages.
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10. **Reflection of wave energy by small undulation on a sea-bed**, *International Conference on Computational Mechanics and Simulations*, December 8-10, 2006 (Co-author: S.C. Martha), organized by Indian Institute of Technology Guwahati, India. (Published in the proceedings *Recent Advances in Computational Mechanics and Simulations*, Vol 2, pages 1483-1489).

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2. S.N. Bora, Lecture Notes on Mathematical Techniques in Science and Engineering, QIP Short Term Course, June 26-30, 2006, IIT Guwahati.
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4. R.K. Ray, S.N. Bora and D.K. Maiti (Guest Editors), *International Journal of Advances in Engineering Sciences*, Springer.
5. R.K. Ray, S.N. Bora and D.K. Maiti, Springer Proceedings *Advances in Applied and Theoretical Mechanics* (Peer-reviewed papers of ISTAM-2022)

Project:

Title: Analytical and Inverse Modelling for Estimating Aquifer Parameters of a Confined Aquifer

Principal Investigator: Dr. Gautam Barua, Dept of Civil Engineering, IIT Guwahati

Co-Principal Investigator: Dr. Swaroop Nandan Bora, Dept of Mathematics, IIT Guwahati.

Funding Agency: Department of Science and Technology, Govt. of India.

Project No.: SR/S4/ES-123/2004

Duration: Three years (2006-2009)

Amount: Rs. 6 lakhs

Title: Transient Analysis of Hydrodynamic Coefficients Connected to Cylindrical Breakwaters

Co-Principal Investigator: Dr. Sunanda Saha, SAS, VIT Vellore, Tamil Nadu

Funding Agency: SERB, Department of Science and Technology, Govt. of India

Project No.: TAR/2021/000177

Duration: Three Years (2021-2024)

Amount: Rs. 18.30 Lakhs

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3. Dr. Elena Strelnikova, Ukrainian Academy of Science, Ukraine
4. Dr. Mike H Meylan, The University of Newcastle, Australia
5. Dr. Siming Zheng, University of Plymouth, UK; Zhejiang University, China
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6. Dr. Sunanda Saha, VIT Vellore, Tamil Nadu
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PhD

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10. Bandita Roy (January 2016-August 2021)
Thesis Title: **Existence of Solution of Certain Classes of Fractional Differential Equations along with Controllability**
11. Koushik Kanti Barman (July 2017-July 2022)

Thesis Title: **Study of Scattering and Trapping of Water Waves in Two-layer Fluids for Various Types of Structure Configuration and Sea-beds**

12. Matap Shankar (January 2019-January 2024)

Thesis Title: **Ulam-Hyers and Lypunov Stability for Some Classes of Fractional Differential Equations and Difference Equations**

13. Shiva Kandpal (January 2019-September 2024)

Thesis Title: **Linearized Saint-Venant Equations in Various Forms with Lateral Inflow in a Channel of Finite Length**

14. Abhijit Shit (July 2019-January 2025)

Thesis Title: **Modelling of Some Biological Phenomena via Fractional Differential Equations**

15. Shilpi Jain (January 2020-April 2025)

Thesis Title: **Study of Linear Water Wave Scattering by a Floating Structure in the Presence of Porous Breakwaters for Different Types of Sea-bed: Pattern of Scattering and Wave Force Mitigation**

16. Sunil (January 2021-April 2026)

Research Topic: **Study on Certain Classes of ψ -Hilfer Fractional Differential Equations: Qualitative Properties and Some Applications**

17. Mahesh Kumar Nehra (January 2021-April 2026)

Research Topic: **Time Domain Analysis of a Floating Ice Sheet due to a Moving Load over Different Types of Sea-bed**

(ONGOING)

18. Nabanita Karmakar (January 2022-) – THESIS SUBMITTED

Research Topic: **Impact of various porous breakwaters on wave scattering and mitigation of forces on a rigid tunnel placed in a sea possessing different types of bottom topography**

19. Sohini Pal (July 2022-)

Research Topic: **Diverse Approaches in the Dynamic Analysis of Landslide-driven Large Amplitude Waves**

20. Smriti Singh (July 2024-)

Research Topic: **Water Wave Propagation through Periodic Arrays of Vertical Barriers under Variable Boundary and Sea-bed Conditions**

21. Karabee Devi (July 2024-)

Research Topic: **Controllability of Some Classes of Differential Equations with Different Types of Conditions**

M.Sc. and B.Tech.

I have supervised 43 M.Sc. and 11 B.Tech. students for their dissertations. Additionally, I have supervised 25 interns.

Teaching:

The following courses have been taught multiple times:

1. MA 102 (Several Variable Calculus and Ordinary Differential Equations) to B.Tech. students.
2. MA 201 (Complex Analysis, Partial Differential Equations, and Integral Transforms) to B.Tech. students.
3. Scientific Computing to B.Tech. students.
4. Numerical Analysis to M.Sc. students.
5. Differential Equations to M.Sc. students.
6. Differential Equations to Ph.D. students.
7. Potential Flow of Fluids and Water Wave Theory to Ph.D. students
8. Mathematical Methods to B.Tech, MSc, and Ph.D. students. (Elective)
9. Fractional Calculus and Fractional Differential Equations to MSc and PhD students. (Elective)
10. Fluid Dynamics to B.Tech, MSc and PhD students. (Elective)
11. Integral Transforms and Integral Equations to B.Tech, MSc and PhD students. (Elective)

Academic and Related Administrative Achievements:

1. Graduate teaching and research assistantship, Dalhousie University (1993-1997)
2. Recipient of Bruce and Dorothy Rossetti scholarship for academic excellence during Ph.D. (1994-95, 1995-96)
3. Graduate teaching and research assistantship, Dalhousie University (1993-1997)
4. Executive Member, Indian Society for Theoretical and Applied Mechanics, (2016-18)
5. Assistant General Secretary, Assam Academy of Mathematics, 1998-99.
6. Executive Member, Indian Society for Theoretical and Applied Mechanics (ISTAM), (2016-2018, 2023 (Ex-officio)
7. President, Indian Society for Theoretical and Applied Mechanics (ISTAM), (2022)
8. Executive Member, Indian Society for Mathematical Modelling and Computer Simulation (ISMMACS) (2022-2024)

9. Member, Executive Council, Indian Mathematical Society (2024-2027)

Conferences/workshops organized:

	Event	Date	Role
1	<i>Mathematics Day - Celebration of Completion of 100 Talks of IITG Mathematics Seminar Series</i>	August 21, 2004	Organizing Secretary
2	<i>International Conference on Environmental Fluid Mechanics (ICEFM 05),</i>	March 3-5, 2005	Organizing Secretary
3	<i>QIP STC, Mathematical Techniques in Science and Engineering,</i>	June 26-30, 2006	Coordinator
4	<i>QIP-STC, Mathematical Methods, Modeling and Optimal Control</i>	June 2-6, 2009	Coordinator (Joint)
5	Innovation in Science Pursuit for Inspired Research (INSPIRE)	December 15-21, 2009	Co-Coordinator
6	ATAL FDP on Mathematical Modelling of Problems in Coastal and Offshore Engineering	September 14-18, 2020	Coordinator
7	International Conference on Advances in Differential Equations and Numerical Analysis	October 12-15, 2020	Convener (one of two)

Conference attendance/Invited lectures:

1. Conferences attended: 59
2. Conference Presentations: 125 (Including those by Research Scholars and Collaborators)
3. Invited Lectures Elsewhere (excluding conferences): 136

Journal paper reviewing/thesis examination etc.:

1. Have reviewed about 200 research articles in various leading journals.
2. Have acted as Ph.D. thesis examiner for about 75 candidates.
3. Have acted as an expert in faculty selection at various places (around 20).

Other Major Responsibilities:

1. **Vice-Chairman**, DRDO-SET 2009.
2. **Chairman**, Library Advisory Committee, IIT Guwahati, June 2014-May 2017.
3. **Head**, Department of Mathematics, IIT Guwahati, April 2015-March 2018.
4. **Dean of Students' Affairs**, IIT Guwahati, April 2018-September 2019.
5. **Organizing Chairman**, Inter IIT Students Sports Meet, 2018.
6. **Organizing Chairman**, Inter IIT Staff Sports Meet, 2018.
7. **President, Indian Society of Theoretical and Applied Mechanics (ISTAM) – 2022.**