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Mother: Mrs. Madhuri Bora
Wife: Mrs. Swapnali Dutta Bora
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: (145 papers)

1. 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.
2. 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.
3. 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*, (Published online since March 22, 2026) 26 Pages
4. 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.
5. 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.
6. 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.
7. 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).
8. 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.
9. 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.

10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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/adbdfb)***, *Physica Scripta*, Volume 100 (4), Paper ID 045235 (Published online since March 19, 2025) 13 Pages.
16. 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.
17. 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)***, *Journal of Fluids and Structures*, Volume 134, Paper ID 104280 (Published online since February 23, 2025) 17 Pages.
18. Debananda Basua and **Swaroop Nandan Bora** (2025), Nonlinear analysis for sequential multipoint fractional boundary values problems with ψ-Hilfer fractional derivative, *Journal of Integral Equations and Applications*, Volume 37(3), 285-295.
19. 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)***, *Physics of Fluids*, Volume 37(2), Paper ID 022140 (Published online since February 20, 2025) 13 Pages.

20. 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)***, *Nonlinear Analysis: Modeling and Control*, Volume 60(2), 196-211.
21. Abhijit Shit and **Swaroop Nandan Bora** (2024), Mass transport in brain cells: integer-order and fractional-order modeling ***(doi:10.1088/1402-4896/ad97ee)***, *Physica Scripta,* Volume 100 (1), Paper ID 015020 (Published online since December 10, 2024) 17 Pages.
22. Mahesh Kumar Nehra and **Swaroop Nandan Bora** (2024), Response of a floating ice sheet due to a moving load in the presence of a porous sea-bed ***(doi:10.1007/s40722-024-00362-w)***, *Journal of Ocean Engineering and Marine Energy* (Published online since November 25, 2024) 15 Pages.
23. Shiva Kandpal and **Swaroop Nandan Bora** (2024), Non-inertia wave model approximation with stage-discharge relationship imposed at the downstream end and a space- and time-dependent lateral inflow ***(doi:10.1063/5.0238656)***, *Physics of Fluids,* Volume 36(11), Paper ID 015020 (Published online since November 20, 2024) 19 Pages .
24. 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)***, *International Journal of Applied Mechanics,* Volume 16(9), Paper ID 2450101 (Published online since November 27, 2024) 20 pages
25. Sunanda Saha, **Swaroop Nandan Bora** and Wojciech Sulisz (2024), Water wave interaction with a bottom-mounted wind turbine fitted with multiple porous rings ***(doi.1016/j.oceaneng.2024.118850)***, *Ocean Engineering*, Volume 311, Paper ID 118850 (Published online since August 7, 2024) 15 Pages.
26. Nabanita Karmakar and **Swaroop Nandan Bora** (2024), Role of a thin porous vertical barrier and a step-type sea-bed in reflecting waves and mitigating wave forces acting on a submerged tunnel (***doi:10.1016/j.oceaneng.2024.118568***), *Ocean Engineering*, Volume 310, Paper ID 118568 (Published online since July 2, 2024) 16 Pages.
27. Shilpi Jain and **Swaroop Nandan Bora** (2024), Impact of a vertical porous barrier in the reflection of water waves and mitigation of waves 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.
28. Matap Shankar and **Swaroop Nandan Bora** (2024), Ulam-Hyers stability of non-instantaneous impulsive integro-differential equation of real-order with Caputo deivative with application to circuits, *Journal of Nonlinear Evolution Equations and Applications,* 2024(4), 45-65.
29. 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.
30. 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.

31. 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).
32. 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.
33. 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.
34. 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.
35. 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.
36. 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).
37. 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.
38. 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/ad)c12***), *Physica Scripta*, Vol. 98(12), Paper ID 125242 (Published online since November 24, 2023) 15 pages.
39. 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)***, *Franklin Open* (A journal of Franklin Institute), Vol. 5, Paper ID 100043, (Published online since October 19, 2023) 10 Pages.
40. 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)***, *Water Resources Management*, Vol. 37, 5655-5676.

41. 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)***, *Computational and Applied Mathematics*, Vol. 42, Article ID 313 (Published online since September 24, 2023) 16 Pages.
42. 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)***, *Nonlinear Dynamics*, Vol. 111, 19249-19264.
43. 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***), *Archive of Applied Mechanics*, (Published online since July 7, 2023) 21 Pages.
44. 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)***, *Franklin Open* (A journal of Franklin Institute), Vol. 4, Paper ID 100025, (Published online since July 7, 2023). 7 Pages
45. **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),*** *Physics of Fluids,* Vol. 35(7), 077103*,* 17 Pages.
46. 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.
47. 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***), *Circuits, Systems, and Signal Processing*, Vol. 42, 5207-5232.
48. 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.oeaneng.2023.114132***), *Ocean Engineering*, Vol. 275, 114132 (Published online since March 15, 2023) 12 Pages.
49. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Lyapunov stability theorems for ψ-Caputo derivative systems, (***doi:10.1017/s13540-022-00114-3***), *Fractional Calculus and Applied Analysis*, Vol. 26, 220-236.
50. 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***), *Marine Structures*, Vol. 87, Article No 103336 (Published online since November 19, 2022) 18 Pages.
51. **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)***, *Results in Mathematics*, Vol. 78(1), Article No 17 (Published online since November 19, 2022) 18 Pages.
52. 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),*** *Nonlinear Dynamics*, Vol. 111, 4469-4484.

53. 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***), *Circuits, Systems, and Signal Processing*, (Published online since October 29, 2022) 25 Pages.
54. Abhijit Shit and **Swaroop Nandan Bora** (2022), ESR fractional model with non-zero uniform average blood velocity, (***doi:10.1007/s40314-022-02072-1),*** *Computational and Applied Mathematics*, Vol. 41, 354 (Published online since October 19, 2022) 15 Pages.
55. Ayan Chanda, Abhijit Sarkar and Swaroop Nandan Bora (2022), An analytical study of scattering of water waves by a surface-piercing bottom-mounted compound porous cylinder placed on a porous sea-bed (***doi:10.1016/j.jfluidstructs.2022.103764),*** *Journal of Fluids and Structures***,** Vol 115, 103764 (Published online since October 14, 2022) 19 Pages.
56. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Convergence criteria for nonhomogeneous linear nonautonomous real order time-delay systems (***doi:10.1002/mma.8760)***, *Mathematical Methods in the Applied Sciences*, Vol. 46, 4331-4351.
57. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2022), New asymptotic stability results for nonautonomous nonlinear fractional order systems (***doi:10.1093/imamci/dnac019),*** *IMA Journal of Mathematical Control and Information*, Vol. 39, 951-967.
58. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2023), Asymptotic stability and control of time-varying real order time delay systems**,** *International Journal of Dynamics and Control*, (***doi:10.1007/s40435-022-00988-4***), Vol. 11, 428-440.
59. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2022), Asymptotic convergence criteria for nonhomogeneous linear fractional order systems**,** *Journal of Fractional Calculus and Applications*, Vol. 13(2), 237-250.
60. Koushik Kanti Barman and **Swaroop Nandan Bora** (2022), Analysis of wave reflection, waveload and pressure distribution due to a poro-elastic structure in a two-layer fluid over a porous sea-bed, (***doi:10.1007/s40722-022-00235-0***), *Journal of Ocean Engineering and Marine Energy*, Vol. 8, 331-354.
61. Bandita Roy, **Swaroop Nandan Bora** (2021), Existence of mild solutions for semilinear evolution equation using Hilfer fractional derivatives, *Fractional Differential Calculus*, Vol. 12(1), 1-12.
62. 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.
63. Sunanda Saha, Sanjay Kumar Mohanty and **Swaroop Nandan Bora** (2022), Flexural gravity wave resonance in the presence of current (***doi: 10.1061/ 15 (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.

64. Jayanta Borah, **Swaroop Nandan Bora** (2018), Existence of mild solution for mixed Volterra-Fredholm integro fractional differential equation with non-instantaneous impulses (***doi:10.1007/s12591-018-0410-1*****),** *Differential Equations and Dynamical Systems*, Vol. 30(1), 185-196.

65. Uma Vinod Kumar, Sunanda Saha and **Swaroop Nandan Bora** (2022), Hydroelastic analysis of a coupled porous structure in finite water depth ***(doi: 10.1016/j.oceaneng.2021.110491),*** *Ocean Engineering*, Vol. 246, 110491 (Published online since January 21, 2022), 12 Pages.

66. Bichitra Kumar Lenka and **Swaroop Nandan Bora** (2022), New global asymptotic stability conditions for a class of nonlinear time-varying fractional systems (***doi:10.1016/j.ejcon.2021.09.008)***, *European Journal of Control*, Vol. 63, 97-106.

67. Ayan Chanda and **Swaroop Nandan Bora** (2022), Investigation of oblique flexural gravity wave scattering by two submerged thin vertical porous barriers with different porosities (***doi:10.1061/(ASCE)EM.1943-7889.0002071),*** *Journal of Engineering Mechanics,* ASCE, Vol. 148(2), 040211(Published online since November 27, 2021), 14 pages.

68. Ayan Chanda and **Swaroop Nandan Bora** (2022), Scattering of flexural gravity waves by a pair of submerged vertical porous barriers over a porous sea-bed (***doi:10.1115/1.4051475),*** *Journal of Offshore Mechanics and Arctic Engineering,* ASME, 144, 011201 (Published online since July 1, 2021), 13 pages.

69. Koushik Kanti Barman and **Swaroop Nandan Bora** (2021), Elastic bottom effects on ocean water wave scattering by a composite caisson type breakwater placed upon a rock foundation in a two-layer fluid (***doi:10.1142/S1758825121501143),*** *International Journal of Applied Mechanics*, Vol. 13(10), 2150114(Published online since December 30, 2021), 33 pages.

70. Koushik Kanti Barman and **Swaroop Nandan Bora** (2021), Interaction of oblique water waves with a single chamber caisson type breakwater for a two-layer fluid flow over an elastic bottom (***doi:10.1016/j.oceaneng.2021.109766),*** *Ocean Engineering,* Vol. 236, 109766 (Published online since September 8, 2021), 18 Pages.

71. **Swaroop Nandan Bora** and Bandita Roy (2021), Approximate controllability of a class of semilinear Hilfer fractional differential equations (***doi:10.1007/s00025-021-01507-1),*** *Results in Mathematics*, Vol. 76(4), 197 (Published online since September 6, 2021), 20 Pages.

72. Subhadra Mishra, Sunanda Saha, Santu Das and **Swaroop Nandan Bora** (2021), Reflection and damping of linear water waves by a multi-porosity vertical porous structure placed on a step-like raised sea-bed (***doi:10.1007/s40868-021-00101-y),*** *Marine Systems & Ocean Technology*, Vol. 16, 142-156.

73. Abhijit Sarkar and **Swaroop Nandan Bora** (2021), Interaction of water waves with a semi-porous bottom-mounted cylindrical storage tank containing a cylindrical pile ***(doi:10.1061/(ASCE)WW.1943-5460.0000669),*** *Journal of Waterway, Port, Coastal, and Ocean Engineering*, ASCE, Vol. 147(6), 04021029 (Published online since July 16, 2021), 13 pages.

74. Neelam Choudhary, **Swaroop Nandan Bora** and Elena Strelnikova (2021), Study on liquid sloshing in an annular rigid circular cylindrical tank with damping device

placed in liquid domain (***doi:10.1007/s42417-021-00314-w)***, *Journal of Vibration Engineering and Technologies*, (Published online since June 4, 2021), 13 pages.

75. Uma Vinod Kumar, T. Deepika, Sunanda Saha and **Swaroop Nandan Bora** (2021), Scattering of gravity waves by a rectangular floating flexible porous plate, *Journal of Advanced Research in Applied Mathematics and Statistics*, Vol. 6, 4-11.

76. Abhijit Sarkar and **Swaroop Nandan Bora** (2021), Exciting force for a coaxial configuration of a floating porous cylinder and a submerged bottom-mounted rigid cylinder in finite ocean depth (***doi:10.1007/s00419-021-01972-8),*** *Archive of Applied Mechanics*, Vol. 91(7), 3383-3401.

77. Bandita Roy, **Swaroop Nandan Bora** (2021), On existence and uniqueness of integral solutions for a class of nondensely defined mixed Volterra-Fredholm integro fractional neutral differential equations, *Journal of Nonlinear Evolution Equations and Applications*, Vol. 2021(3), 41-62.

78. Koushik Kanti Barman and **Swaroop Nandan Bora** (2021), Scattering and trapping of water waves by a composite breakwater placed on an elevated bottom in a two-layer fluid flowing over a porous sea-bed, (***doi:10.1016/j.apor.2021.102544*****),** *Applied Ocean Research*, Vol. 113, 102544 (online since April 21, 2021),18 pages

79. Abhijit Sarkar and **Swaroop Nandan Bora** (2021), Hydrodynamic force and wave run-up due to diffraction of ocean water waves by a surface-piercing bottom-mounted compound partial-porous cylinder **(*doi:10.1088/1873-7005/abdb3d*),** *Fluid Dynamics Research*, 53, 015508 (Online since February 10, 2021) 19 pages.

80. Bandita Roy, **Swaroop Nandan Bora** (2021), On mild solutions of Volterra fractional differential equations of Sobolev type with finite delay, *Journal of Fractional Calculus and Applications*, 12(2), 94-113.

81. Jayanta Borah, **Swaroop Nandan Bora** (2021), Non-Instantaneous Impulsive Fractional Semilinear Evolution Equation with Finite Delay, *Journal of Fractional Calculus and Applications*, 12(1), 120-132.

82. Ayan Chanda and **Swaroop Nandan Bora** (2021), Investigation of water wave scattering by an elastic sea-bed of varying depth in two superposed fluids covered by an ice-sheet (***doi:10.1016/j.oceaneng.2020.108510***), *Ocean Engineering*, Vol. 221, Paper ID 108510 (Online since January 22, 2020) (18 Pages).

83. Alka Chadha and **Swaroop Nandan Bora** (2021), Stability results on mild solution of impulsive **n**eutral fractional stochastic integro-differential equations involving Poisson jumps (***doi:10.2298/FIL2110383C*****)**, *Filomat*, Vol. 35(10), 3383-3406.

84. Alka Chadha and **Swaroop Nandan Bora (2021),** Approximate controllability of an impulsive neutral stochastic integro-differential inclusion with nonlocal conditions, *Mathematical Report*, Vol. 23(73) 3, 265-294.

85. Jayanta Borah, **Swaroop Nandan Bora** (2021), Existence results for non-instantaneous impulsive fractional functional differential equations with infinite delay, *Fractional Differential Calculus*, Vol. 11(1), 35-53.

86. Sagarika Khuntia, Smrutiranjan Mohapatra **and Swaroop Nandan Bora** (2021), Analytical study of wave diffraction by an irregular surface located on a flexible base in an ice-covered fluid (***doi:10.1007/s11012-020-01287-y*****),** *Meccanica*, Vol. 56, 35-50.

87. Alka Chaddha, **Swaroop Nandan Bora** (2021), Asymptotic stability of neutral impulsive stochastic partial differential equation of Sobolev type with Poisson

jumps (***doi:10.1007/s12591-017-0371-9*****),** *Differential Equations and Dynamical Systems*, Vol. 29(3), 511-538.

88. Koushik Kanti Barman and **Swaroop Nandan Bora** (2021), Linear water wave interaction with a composite porous structure in a two-layer fluid flowing over a step-like sea-bed **(*doi:10.1080/03091929.2020.1842391)*****,*** *Geophysical and Astrophysical Fluid Dynamics*, Vol. 115(5-6), 577-611.

89. Jayanta Borah, **Swaroop Nandan Bora** (2020), Sufficient conditions for existence of integral solution for non-instantaneous impulsive fractional evolution equation, (***doi:10.1007/s13226-020-0450-4***) *Indian Journal of Pure and Applied Mathematics*, Vol 51(3), 1065-1082.

90. Abhijit Sarkar and **Swaroop Nandan Bora** (2020), Hydrodynamic Coefficients for a floating semi-porous compound porous cylinder in finite ocean depth **(*doi:10.1007/s40868-020-00086-0*)*,*** *Marine Systems and Ocean Technology*, Vol. 15, 270-285.

91. Sunanda Saha and **Swaroop Nandan Bora** (2020), Trapped flexural waves supported by a pair of identical cylinders in a two-layer fluid, *SN Applied Sciences*, **(*doi:10.1007/s42452-020-03229-5*),** Vol 2(8), 1455, 17 pages.

92. Mohammad Hassan, **Swaroop Nandan Bora and** Manoj Biswakarma (2020), Water wave interaction with a pair of a floating and submerged coaxial cylinders in uniform finite depth (***doi: 10.1007/s40868-020-00082-4***), *Marine Systems and Ocean Technology*, Vol. 15, 188-198.

93. Ayan Chanda**, Swaroop Nandan Bora** (2020), Effect of a porous sea-bed on water wave scattering by two thin vertical porous plates **(*doi: 10.1016/j.euromechflu.2020.06.009*),** *European Journal of Mechanics-B/Fluids*, Vol. 84, 250-261.

94. Ayan Chanda, **Swaroop Nandan Bora** (2020), Scattering of linear oblique water waves over an elastic bottom undulation in a two-layer fluid (***doi:10.1007/s00033-020-01331-7***), *ZAMP (Zeitschrift fuer Angewandte Mathematik und Physik),* 71(4), Paper ID 107, 32 pages.

95. Ayan Chanda and **Swaroop Nandan Bora** (2020), Propagation of oblique waves over a small undulating elastic bottom topography in a two-layer fluid flowing through a channel (***doi: 10.1142/S1758825120500234***), *International Journal of Applied Mechanics*, 12(2), (2050023, 30 pages).

96. Abhijit Sarkar**, Swaroop Nandan Bora** (2020), Hydrodynamic forces and moments due to interaction of linear water waves with truncated partial-porous cylinders in finite depth **(*doi:10.1016/j.jfluidstructs.2020.102898*),** *Journal of Fluids and Structures*, Vol. 94, 102898 (29 pages).

97. Abhijit Sarkar**, Swaroop Nandan Bora** (2019), Water wave diffraction from a surface piercing floating compound porous cylinder in finite depth (***doi:10.1080/03091929.162637*****),** *Geophysical and Astrophysical Fluid Dynamics*, Vol. 113(4), 348-376.

98. Vidushi Gupta, **Swaroop Nandan Bora,** Juan J. Nieto (2019), Dhage iterative principle for quadratic perturbation of fractional boundary value problems with finite delay **(*doi:10.1002/mma.5643*),** *Mathematical Methods in Applied Sciences*, Vol. 42(12), 4244-4255.

99. Mohammad Hassan, **Swaroop Nandan Bora** (2019), Diffraction of water waves by a finite circular hollow cylinder in water of infinite depth, *Applied Sciences*, Vol. 21, 119-135.

100. Abhijit Sarkar**, Swaroop Nandan Bora** (2019), Hydrodynamic forces due to water wave interaction with a bottom-mounted surface-piercing compound porous cylinder (***doi:10.1016/j.oceaneng.2018.10.019***), *Ocean Engineering*, Vol. 171, 59-70.

101. Alka Chaddha, Rathinasamy Sakthivel and **Swaroop Nandan Bora** (2019), Solvability of control problem for fractional nonlinear differential inclusions with nonlocal conditions **(*doi:10.15388/NA_2019.4.2*),** *Nonlinear Analysis: Modelling and Control*, Vol. 24(4), 503-522.

102. Jayanta Borah, **Swaroop Nandan Bora** (2019), Existence of mild solution of a class of nonlocal fractional order differential equation with not instantaneous impulses (***doi:10.1515/fca-2019-0029*),** *Fractional Calculus and Applied Analysis*, Vol. 22(2), 495-508.

103. Santu Das, **Swaroop Nandan Bora** (2018), Oblique water wave damping by two submerged thin vertical porous plates of different heights (***doi:10.1007/s40314-017-0545-7*),** *Computational and Applied Mathematics*, Vol. 37(3), 3759-3779.

104. Alka Chaddha, **Swaroop Nandan Bora** (2018), Existence and exponential stability for neutral stochastic fractional differential equations with impulses driven by Poisson jumps (***doi:10.1080/17442508.2017.1402899*),** *Stochastics*, Vol. 90(5), 663-681.

105. Sunanda Saha and **Swaroop Nandan Bora** (2018), Trapped modes in a three-layer fluid **(*doi:10.1007/s11804-018-005-9*),** *Journal of Marine Science and Application*, Vol. 17, 45-56.

106. Alka Chaddha, **Swaroop Nandan Bora,** Rathinasamy Sakthivel (2018), Approximate controllability of impulsive stochastic fractional differential equations with nonlocal conditions (***doi:10.12732/dsa.v27i1.1*),** *Dynamic Systems and Applications*, Vol. 27(1), 1-29.

107. Alka Chaddha, **Swaroop Nandan Bora** (2018), Approximate controllability of impulsive neutral stochastic differential equations driven by Poisson jumps **(*doi:10.1007/s10883-016-9348-1*),** *Journal of Dynamical and Control Systems*, Vol. 24, 101-128.

108. Alka Chaddha, **Swaroop Nandan Bora** (2017), Stability analysis for neutral stochastic differential equation of second order driven by Poisson jumps **(*doi: 10.1063/1.5010614*),** *Journal of Mathematical Physics*, Vol. 58, 112703 (13 pages).

109. Neelam Choudhary, **Swaroop Nandan Bora** (2017), Linear sloshing frequencies in the annular region of a circular cylindrical container in presence of a rigid baffle **(*doi:10.1007/s12046-017-0642-8),** *Sadhana-Academy Proceedings in Engineering Sciences*, Vol. 42(5), 805-815.

110. Neelam Choudhary, **Swaroop Nandan Bora** (2016), Liquid sloshing in a circular cylindrical container containing a two-layer fluid (***doi: 10.1007/s12572-016-0176-z***), *International Journal of Advances in Engineering Sciences and Applied Mathematics*, Vol. 8(4), 240-248.

111. Sunanda Saha and **Swaroop Nandan Bora** (2015), Effects of surface tension on trapped modes in a two-layer fluid (***doi:10.1017/S1446181115000188***), *ANZIAM Journal*, Vol. 57, 189-207.
112. Sunanda Saha, **Swaroop Nandan Bora** (2015), Elastic bottom effect on trapped waves in a two-layer fluid (***doi: 10.1142/S1758825115500283***), *International Journal of Applied Mechanics*, Vol. 7(2), 150028 (15 pages).
113. Mohammad Hassan, **Swaroop Nandan Bora** (2015), Surge motion coefficients for a finite circular hollow cylinder radiating in water of infinite depth (***doi: 10.1615/InterJFluidMechRes.v42.i2***), *International Journal of Fluid Mechanics Research*, Vol. 42(2), 95-110.
114. Santu Das, **Swaroop Nandan Bora (2014),** Damping of oblique ocean waves by a vertical porous structure placed on a multi-step bottom **(*doi:10.1007s11804-014-1281-7*),** *Journal of Marine Science and Application*, Vol. 13, 362-376.
115. Santu Das, **Swaroop Nandan Bora (2014),** Reflection of oblique ocean water waves by a vertical porous structure placed on a multi-step impermeable bottom (***doi:10.1016j.apor.2014.07.001),*** *Applied Ocean Research*, Vol. 47, 373-385.
116. Mohammad Hassan, **Swaroop Nandan Bora** (2014), Hydrodynamic coefficients in surge for a radiating hollow cylinder placed above a coaxial cylinder at finite ocean depth (***doi:10.1007s00773-014-0280-3***), *Journal of Marine Science and Technology*, Vol. 19, 450-461.
117. Neelam Choudhary, **Swaroop Nandan Bora** (2014), Linear sloshing in a vertical circular cylinder with curved bottom in the presence of a rigid baffle (***doi: 10.5373/jaram.1982.022514*),** *Journal of Advanced Research in Applied Mathematics*, Vol. 6(4), 29-45.
118. Santu Das, **Swaroop Nandan Bora (2014),** Reflection of oblique ocean water waves by a vertical rectangular porous structure placed on an elevated horizontal bottom **(*doi: 10.1016/j.oceaneng.2014.02.035*)**, *Ocean Engineering*, Vol. 82, 135-148.
119. Sunanda Saha and **Swaroop Nandan Bora** (2014), Flexural gravity waves trapped in a two-layer fluid of finite depth **(*doi:10.1016/j.apor.2013.08.005*),** *Applied Ocean Research*, Vol. 44, 1-12.
120. Mohammad Hassan, **Swaroop Nandan Bora** (2014), Rotational motion due to the interaction of water waves with a pair of coaxial cylinders in water of finite depth **(*doi:10.5373/jaram.1682.012713*),** *Journal of Advanced Research in Applied Mathematics*, Vol. 6, 48-65.
121. Santu Das, **Swaroop Nandan Bora (2014),** Wave damping by a vertical porous structure placed near and away from a rigid vertical wall **(*doi:10.108003091929.2013.834051*),** *Geophysical and Astrophysical Fluid Dynamics,* Vol. 108(2), 147-167.
122. Mohammad Hassan, **Swaroop Nandan Bora** (2013), Exciting forces for a wave energy device consisting of a pair of coaxial cylinders in water of finite depth (***doi: 10.1007/s11804-013-1207-9***), *Journal of Marine Science and Application*, Vol. 12, 315-324.
123. Sunanda Saha, **Swaroop Nandan Bora** (2013), Trapped modes in a two-layer fluid of finite depth bounded above by a rigid lid (***doi: 10.1016/j.wavemoti.2013.04.009***), *Wave Motion*, Vol. 50, 1050-1060.

124. Mohammad Hassan, **Swaroop Nandan Bora** (2012), Exciting forces for a pair of coaxial hollow cylinder and bottom-mounted cylinder in water of finite depth (***doi:10.1016/j.oceaneng.2012.05.013***), *Ocean Engineering*, Vol. 50, 38-43.
125. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2012), Oblique water wave scattering by bottom undulation in a two-layer fluid flowing through a channel (***doi: 10.1007/s11804-012-1133-2***), *Journal of Marine Science and Application*, Vol. 11, 276-285.
126. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2012), Oblique wave scattering by an impermeable ocean-bed of variable depth in a two-layer fluid with ice-cover (***doi:10-1007/s00033-012-0210-3***), *ZAMP (Zeitschrift fuer Angewandte Mathematik und Physik)*, Vol. 63, 879-903.
127. **Swaroop Nandan Bora**, Subash Chandra Martha, Aloknath Chakrabarti (2012), Scattering of surface waves by small undulation on a porous sea-bed: a Fourier transform approach, *Journal of Assam Academy of Mathematics*, Vol. 4, 1-7.
128. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2012), Exciting forces due to interaction of water waves with a submerged sphere in an ice-covered two-layer fluid of finite depth (***doi:10.1016/j.apor.2011.07.008***), *Applied Ocean Research*, Vol. 34, 187-197.
129. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2011), Reflection and transmission of water waves in a two-layer fluid flowing through a channel with undulating bed (***doi:10.1002/zamm.200800216***)**,** *ZAMM (Zeitschrift fur Angewandte Mathematik und Mechanik),* Vol. 91(1), 46-56.
130. Gautam Barua, **Swaroop Nandan Bora** (2010), Hydraulics of a partially penetrating well with skin zone in a confined aquifer (***doi:10.1016/j.advwatres.2010.09.008***), *Advances in Water Resources*, Vol. 33, 1575-1587.
131. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2010), Radiation of water waves by a submerged sphere in an ice-covered two-layer fluid of finite depth, *Journal of Advanced Research in Applied Mathematics*, Vol. 2(1), 446-463.
132. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2009), Scattering of internal waves in a two-layer fluid flowing through a channel with small undulations (***doi: 10.1007/s10236-009-0214-5***), *Ocean Dynamics*, Vol. 59(4), 615-625.
133. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2009), Propagation of oblique waves over small bottom undulation in an ice-covered two-layer fluid (***doi: 10.1080/03091920903071077***), *Geophysical and Astrophysical Fluid Dynamics*, Vol. 103(5), 347-374.
134. Smrutiranjan Mohapatra, **Swaroop Nandan Bora** (2009), Water wave interaction with a sphere in a two-layer fluid flowing through a channel of finite depth **(*doi: 10.1007/s00419-008-0248-z*),** *Archive of Applied Mechanics*, Vol. 79, 725-740.
135. Subash Chandra Martha, **Swaroop Nandan Bora**, Aloknath Chakrabarti (2009), Interaction of surface water waves with small bottom undulation on a sea-bed, *Journal of Applied Mathematics and Informatics*, Vol. 27(5-6), 1017-1031.
136. **Swaroop Nandan Bora**, Subash Chandra Martha (2008), Scattering of Surface Waves over an Uneven Sea-bed (***doi:10.1016/j.aml.2007.12.00***), *Applied Mathematics Letters*, Vol. 21, 1082-1089.

137. Subash Chandra Martha, **Swaroop Nandan Bora**, Aloknath Chakrabarti (2007), Oblique water wave scattering by small undulations on a porous sea-bed (***doi:10.1016/j.apor.2007.07.001***), *Applied Ocean Research*, Vol. 29(1-2), 86-90.
138. Subash Chandra Martha, **Swaroop Nandan Bora** (2007), Oblique surface wave propagation over small undulation of the bottom of an ocean (***doi: 10.1080/03091920701208186***), *Geophysical and Astrophysical Fluid Dynamics*, Vol. 101(2), 65-80.
139. Subash Chandra Martha, **Swaroop Nandan Bora** (2007), Reflection and transmission coefficients for water wave scattering by a sea-bed with small undulation (***doi: 10.1002/zamm.200610317***), *ZAMM (Zeitschrift fur Angewandte Mathematik und Mechanik*), Vol. 87(4), 314-321.
140. Subash Chandra Martha, **Swaroop Nandan Bora** (2006), Water wave diffraction by a small deformation of the ocean bottom for oblique incidence (***doi: 10.1007/s00707-006-0358-z***), *Acta Mechanica*, Vol. 185, 165-177.
141. **Swaroop Nandan Bora** (2004), Hydrodynamic coefficients for water wave diffraction by spherical structures, *Sadhana, Academy Proceedings in Engineering Sciences*, Vol. 29(6), 617-628.
142. **Swaroop Nandan Bora** (2002), Exciting forces due to diffraction of water waves on a sphere in finite depth, *WSEAS Transactions on Mathematics*, Vol. 1(4), 180-185.
143. Matiur Rahman, **Swaroop Nandan Bora**, Mysore G. Satish (1999), A note on second-order wave forces on a circular cylinder in finite water depth, *Applied Mathematics Letter*, Vol. 12, 63-70.
144. **Swaroop Nandan Bora**, Matiur Rahman (1995), Recent mathematical developments of potential theory applied to diffraction of water waves, Part II. Spherical Structures, *Journal of Assam Science Society*, Vol. 37(2), 66-82.
145. **Swaroop Nandan Bora**, Matiur Rahman (1995), Recent mathematical developments of potential theory applied to diffraction of water waves, Part I. Circular Cylinders, *Journal of Assam Science Society*, Vol. 37(1), 1-21.

Books, Chapters and Lecture Notes:

1. Bandita Roy and Swaroop Nandan Bora (2021), On existence of integral solutions for a class of mixed Volterra-Fredholm integro fractional differential equations, Mathematical Analysis and Applications, *Springer Proceedings in Mathematics & Statistics*, Vol. 381, 81-94.
2. S.N. Bora, M. Rahman, M.G. Satish (1995), Recent mathematical developments in potential theories applied to diffraction of water waves, *Advances in Fluid Mechanics*, edited by M. Rahman, Vol. 6, 199-243, Computational Mechanics Publications. (as a Chapter)

Conference Proceedings:

1. **The radiation problem of a submerged sphere and the evaluation of hydrodynamic coefficients**, *International Conference on Recent Advances in Mathematical Sciences (ICRAMS2000*), IIT Kharagpur, December 20-22, 2000. (Published in Recent Trends in Mathematical Sciences EDT by J. C. Misra and S.B. Sinha, pages 117-135).
2. **Second order wave forces for a circular cylinder in finite water depth**, *National Seminar on Advances in Mathematical, Statistical and Computational Methods in Science and Technology*, Indian School of Mines, Dhanbad, Jharkhand, November 29-30, 2001. (Published in the proceedings, pages, 33-42).
3. **Exciting forces due to diffraction of water waves on a sphere in finite depth water**, *WSEAS International Conference on Theoretical and Applied Mathematics*, Miedzyzdroje, Poland, September 1-5, 2002, (Published in the proceedings (CD-Rom), pages 1961-1966).
4. **Multipole expansion method for the diffraction of water waves by a submerged spherical structure**, *HYDRO2002: Conference on Hydraulics, Water Resources and Ocean Engineering*, IIT Bombay. Mumbai, December 16-17, 2002. (Published in the proceedings, pages 363-367).
5. **Analytical solution for the second order wave loading for cylindrical structure(s)**, *30th Conference on Fluid Mechanics and Fluid Power*, National Institute of Technology Karnataka, Surathkal, December 11-13, 2003. (Published in the Proceedings, pages 92-99).
6. **Associated Legendre polynomials in problems of water wave diffraction by submerged bodies**, 5th International *Conference on Special Functions and their Applications*, Lucknow, February 8-10, 2004 organized by the Society for Special Functions and their Applications. (Published in the Proceedings EDT by A.K. Agarwal, pages 63-73).
7. **Bessel functions in linear water wave diffraction theory**, 5th International *Conference on Special Functions and their Applications*, Lucknow, February 8-10, 2004 (co-author: Subash Chandra Martha), organized by the Society for Special Functions and their Applications. (Published in the Proceedings EDT by A.K. Agarwal, pages 102-114).
8. **Transformation Technique for Water Wave Scattering by a variable Bottom**, *International Conference on Theoretical, Applied, Computational and Experimental Mechanics (ICTACEM04),* Kharagpur, December 28-30, 2004 (Co-author: Subash Chandra Martha), organized by Indian Institute of Technology, Kharagpur, India. (Published in the proceedings, pages 161-165).
9. **Water wave scattering by an ocean bed of small deformation**, *International Conference on Environmental Fluid Mechanics*, March 3-5, 2005 (Co-author: S.C. Martha), organized by Indian Institute of Technology Guwahati, India. (Published in the proceedings *Some Aspects of Environmental Fluid Mechanics*, pages 132-137).
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).
11. S.C. Martha, **S.N. Bora** and A. Chakrabarti, Oblique Surface-wave Propagation over Sinusoidally Varying Topography, Proceedings of *51st Congress of The Indian Society of Theoretical and Applied Mechanics (ISTAM)*, December 18-21, 2006, College of Engineering, Andhra University, pages 23-30.

Technical Reports:

1. S.N. Bora, M. Rahman and M.G. Satish, *Recent mathematical developments of potential theory applied to diffraction of water waves*, Department of Engineering Mathematics, DalTech, Dalhousie University, Canada (1994), 69 pages.
2. S.N. Bora and M. Rahman, *Effects of diffraction and radiation on a submerged sphere*, Department of Engineering Mathematics, DalTech, Dalhousie University, Canada (1999), 24 pages.

Editorial Responsibilities:

1. S.N. Bora, Some Aspects of Environmental Fluid Mechanics, *Proceedings of International Conference on Environmental Fluid Mechanics* (ICEFM'05, IIT Guwahati, March 3-5, 2005), Allied Publishers Pvt Ltd.
2. S.N. Bora, Lecture Notes on Mathematical Techniques in Science and Engineering, QIP Short Term Course, June 26-30, 2006, IIT Guwahati.
3. S.N. Bora, Lecture Notes on Mathematical Methods, Modelling and Optimal Control, QIP Short Term Course, June 2-6, 2009, IIT Guwahati.
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

Collaborative Research:

Abroad:

1. Prof. Juan J. Nieto, University of Santiago de Compostela, Spain
2. Prof. Michael Hanke, KTH Royal Institute of Technology, Stockholm, Sweden.
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
6. Prof. Wojciech Sulisz, Institute of Hydro-engineering, Polish Academy of Sciences, Poland
7. Prof. Chia-Cheng Tsai, National Taiwan Ocean University, Keelung, Taiwan

India:

1. Prof. Aloknath Chakrabarti, Indian Institute of Science, Bangalore
2. Prof. Rathinasamy Saktivel, Bharathiar University, Tamil Nadu
3. Prof. Gautam Barua, Indian Institute of Technology Guwahati
4. Dr. Santu Das, Institute of Advanced Study in Science and Technology, Guwahati
5. Dr. Mohammad Hassan, North East Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh
6. Dr. Sunanda Saha, VIT Vellore, Tamil Nadu
7. Dr. Sanjay K. Mohanty, VIT Vellore, Tamil Nadu
8. Dr. Smrutiranjan Mohapatra, Veer Surendra Sai University of Technology, Odisha
9. Dr. Neelam Choudhary, Bennett University, Uttar Pradesh

Membership:

1. Indian Mathematical Society
2. Indian Society of Theoretical and Applied Mechanics (ISTAM)
3. Indian Society for Mathematical Modelling and Computer Simulation (ISMMACS)
4. Society of Special Functions and their Applications
5. Assam Academy of Mathematics

Supervision/Mentoring:

SERB-TARE FELLOW: Dr. Sunanda Saha (Dec2021-Dec2024)

Post Doctoral Fellow

1. Dr. Alka Chaddha, May 2016-September 2017.
2. Dr. Vidushi Gupta, May2017-November 2018.
3. Dr. Bichitra Kumar Lenka, December 2020-December 2022
4. Dr. Basua Debananda, December 2023-May 2025

PhD

(COMPLETED)

1. Subash Chandra Martha (July 2002-May 2007).
   Thesis Title: **Reflection and Transmission of Surface Water Waves by Undulating Bottom Topography.**

2. Smrutiranjan Mahapatra (July 2005-October 2009).
   Thesis Title: **Water Wave Scattering by a Spherical Structure and an Undulating Bottom Topography in a Two-layer Fluid.**

3. Mr. Santu Das (July 2009-September 2014)
   Thesis Title: **Linear Water Wave Damping by a Bottom-mounted Porous Structure and by Vertical Dual Porous Plates**

4. Mohammad Hassan (July 2009-September 2014)
   Thesis Title: **Diffraction and Radiation of Water Waves by Two Coaxial Vertical Cylinders**

5. Sunanda Saha (July 2010-October 2014)
   Thesis Title: **Study of Trapped Modes in Two- and Three-layer Fluids**

6. Neelam Choudhary (July 2010-November 2015)
   Thesis Title: **Linear Sloshing in Vertical Circular Cylindrical Containers with Different Configurations under the Influence of Surface Tension**

7. Jayanta Borah (July 2012-January 2019)
   Thesis Title: **A Study on Some Classes of Fractional Differential Equations with Non-instantaneous Impulsive Conditions**

8. Abhijit Sarkar (January 2016-February 2021)
   Thesis Title: **Diffraction and Radiation of Linear Water Waves by a Vertical Composite Porous Cylinder of Various Configurations in Finite Ocean Depth**

9. Ayan Chanda (July 2016-August 2021)
   Thesis Title: **Water Wave Interaction with Different Structures and Obstacles due to Various Types of Bottom Topography in a Homogeneous Fluid and a Two-layer Fluid**

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 Moving Load on a Floating Ice-sheet over Different Types of Sea-beds**

(ONGOING)

18. Nabanita Karmakar (January 2022-)
    Research Topic: **Impact of Various Porous Breakwaters in Mitigating Wave Forces on a Tunnel Placed in a Sea with Different Bottom**

19. Sohini Pal (July 2022-)
    Research Topic: **Diverse Approaches in the Dynamic Analysis of Landslide-driven Tsunami 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 41 M.Sc. and 9 B.Tech. students for their dissertations. Additionally, I have supervised 24 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 BTech, 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	*Mathematics Day* - Celebration of Completion of 100 Talks of IITG Mathematics Seminar Series	August 21, 2004	Organizing Secretary
2	*International Conference on Environmental Fluid Mechanics (ICEFM'05),*	March 3-5, 2005	Organizing Secretary
3	*QIP STC, Mathematical Techniques in Science and Engineering*,	June 26-30, 2006	Coordinator
4	QIP-STC, *Mathematical Methods, Modeling and Optimal Control*	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. Conference attended: 58
2. Conference Presentation: 124 (Including those by Research Scholars and Collaborators)
3. Invited Lectures Elsewhere (excluding conferences): 134

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.**