



Dr. Naresh Saha

Assistant Professor
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1. ABOUT

Dr. Naresh Saha is an Assistant Professor in the Department of Mathematics, School of Engineering, Dayananda Sagar University, Bengaluru, where he has been serving since December 2024. He previously worked as an IoE Post-Doctoral Research Fellow at the School of Physics, University of Hyderabad. He did Ph.D. research work at the Physics and Applied Mathematics Unit, Indian Statistical Institute in Kolkata. His research focuses on nonlinear waves and solitons, nonlinear partial differential equations, pattern formation in reaction-diffusion systems, mathematical biology, and nonlinear dynamical systems. He has authored 12 peer-reviewed journal publications, including work in Chaos, Nonlinear Dynamics, Europhysics Letters, Optik, and Physics Letters A, etc. He is also the Founder and Head of the Wave Dynamics & Nonlinear Systems (WDNS) Lab.

2. RESEARCH INTERESTS

- ✦ Nonlinear waves and solitons in nonlinear partial differential equations
- ✦ Pattern formation in reaction-diffusion systems
- ✦ Mathematical biology
- ✦ Nonlinear dynamical systems
- ✦ Mathematical physics and applied mathematics
- ✦ Spatiotemporal dynamics and localized structures

3. ACADEMIC QUALIFICATIONS

- Ph.D. in Applied Mathematics — University of Calcutta, Kolkata, 2023 (research work done at Physics and Applied Mathematics Unit, Indian Statistical Institute, Kolkata)
- M.Sc. in Mathematics — West Bengal State University, Kolkata, 2015
- B.Sc. in Mathematics — Barasat Government College, Barasat, 2013

4. PROFESSIONAL EXPERIENCE

- Assistant Professor — Department of Mathematics, School of Engineering, Dayananda Sagar University, Bengaluru — 23 December 2024 to Present
- Post-Doctoral Research Fellow — School of Physics, University of Hyderabad, Hyderabad — 1 July 2023 to 20 December 2024
- Founder and Head — Wave Dynamics & Nonlinear Systems (WDNS) Lab — Independent research group

5. RESEARCH HIGHLIGHTS

- ✓ Publications: 12 peer-reviewed journal publications.
- ✓ Awards/Recognitions: JRF awarded by Indian Statistical Institute (2016); GATE in Mathematics (2016); CSIR-UGC NET/JRF in Mathematical Sciences (June 2023); IoE Postdoctoral Research Fellowship, University of Hyderabad (2023); IOP Trusted Reviewer.

- ✓ Academic/Conference Roles: Oral and poster presentations at FIP-2024, CNSD-2022, and FSP-2018; Founder and Head of WDNS Lab.
- ✓ Reviewer/Editorial Activities: Reviewer for Chaos, Optical and Quantum Electronics, Physica Scripta, Nonlinear Dynamics (Springer Nature), and Machine Learning: Science and Technology, etc.

6. SELECTED PUBLICATIONS

- ❖ **Naresh Saha**, Nirmoy Kumar Das, Ashoke Das, Arnob Ray, “Phase Space Reorganization and Travelling Wave Emergence Driven by Non-Kerr Effects in Nonparaxial Optical Media,” Chaos (Accepted, 2026).
- ❖ Chinmay Chakraborty, **Naresh Saha**, Krishnendu Bera, Sanjeev K. Sharma, M. A. Aziz-Alaoui, Somak Das, Argha Mondal, “Spatiotemporal Dynamics in a Generalized FitzHugh–Nagumo System Incorporating Ionic Electromagnetic Induction,” Nonlinear Dynamics, 114, 782 (2026).
- ❖ Nirmoy Kumar Das, Srimanta Maji, **Naresh Saha**, Ashoke Das, Anjan Biswas, “Modulational instability of constant intensity waves with PT-symmetric Wadati–Mathieu potential for polynomial law of self-phase modulation,” Europhysics Letters, 154(3), 30001 (2026).
- ❖ **Naresh Saha**, Yiran Li, Subrata Ghosh, Ranjib Banerjee, Tomasz Kapitaniak, Agnieszka Chudzik, Syamal Kumar Dana, Chittaranjan Hens, “Pattern formation in a rumor model under dispersion,” EPJ Special Topics, 235, 2537–2552 (2026). DOI: 10.1140/epjs/s11734-025-02007-x.
- ❖ Chinmay Chakraborty, **Naresh Saha**, M. A. Aziz Alaoui, Chris G. Antonopoulos, Evgeny P. Zemskov, Argha Mondal, “A piecewise-linear adaptive exponential integrate-and-fire neuron model with emerging traveling waves using analytical scheme,” Nonlinear Dynamics, 113, 23507–23520 (2025).

7. ACADEMIC PROFILES

- Google Scholar: <https://scholar.google.com/citations?user=w5Zzz0EAAAJ&hl=en>
- ORCID: <https://orcid.org/0000-0003-3695-4300>
- Scopus: <https://www.scopus.com/authid/detail.uri?authorId=57205115544>
- ResearchGate: <https://www.researchgate.net/profile/Naresh-Saha-2>
- Personal Website: <https://sites.google.com/view/nareshsaha>

8. CONTACT

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