



## **Dr. Sarabindu Dolui**

### **Assistant Professor**

Department of Mathematics

School of Engineering

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### **1. ABOUT**

Dr. Sarabindu Dolui is working as an Assistant Professor in the Department of Mathematics, School of Engineering, Dayananda Sagar University since November 2025. Dr. Dolui received his Ph.D. degree in Mathematics from the National Institute of Technology Andhra Pradesh. He holds an M.Sc. in Mathematics from Banaras Hindu University and a B.Sc. (Hons.) in Mathematics from Ramakrishna Mission Residential College, Narendrapur. His research lies at the intersection of applied mathematics and mathematical physics, with a particular focus on the theoretical and computational modeling of magnetization dynamics. Dr. Dolui has authored several research articles on this interdisciplinary topic in reputed international journals.

He has qualified national-level examinations including IIT-JAM, NET–JRF, and GATE, and has also received a Best Poster Presentation Award at the Perspectives in Nonlinear Dynamics Conference organized by IIT Madras. He has presented his research works at several international conferences in the USA, Japan, and UAE, supported by competitive Student Travel Grants from SIAM, ANRF, CSIR, and IEEE.

### **2. RESEARCH INTERESTS**

- Micromagnetic Modeling
- Micromagnetic Simulation
- Nonlinear Dynamics
- Differential Equation
- Machine Learning

### **3. ACADEMIC QUALIFICATIONS**

- Ph.D. in Mathematics— National Institute of Technology Andhra Pradesh, 2025
- B.Ed in Pedagogy of Mathematics— Baba Saheb Ambedkar Education University, 2021
- M.Sc. in Mathematics— Banaras Hindu University, 2018
- B.Sc. in Mathematics — University of Calcutta, 2015

### **4. PROFESSIONAL EXPERIENCE**

- Assistant Professor — Department of Mathematics, School of Engineering, Dayananda Sagar University, Bengaluru, November 2025 - Present
- Teaching Assistantship — Department of Mathematics, School of Sciences, National Institute of Technology Andhra Pradesh, Jan 2023 - Dec 2024

### **5. RESEARCH HIGHLIGHTS**

- Publications: 10+ research articles in international peer-reviewed journals indexed in Scopus and MathSciNet.
- Books/Book Chapters: 1 book chapter published in Advanced Analytical and Numerical Methods with Their

Application to Industrial Problems, Central West Publishing, Australia.

- Awards/Recognitions: 'Best Poster Presentation Award' at PNLD 2023; Student Travel Grants from the Society for Industrial and Applied Mathematics (SIAM), IEEE Magnetics Society, MI&T Congressi, Anusandhan National Research Foundation (ANRF), and Council of Scientific & Industrial Research (CSIR); qualified IIT-JAM, CSIR-UGC JRF, and GATE.
- Academic/Conference Roles: Presented research papers at multiple national and international conferences, including the SIAM Conference on Control and Its Applications (CT23) in Philadelphia, USA; the 14th AIMS Conference at NYU Abu Dhabi, UAE; the Joint MMM-Intermag Conference in New Orleans, USA; and the Magnetic Recording Conference (TMRC) at Tohoku University, Sendai, Japan.
- Reviewer/Editorial Activities: Served as a peer reviewer for IEEE Transactions on Magnetics, Journal of Physics A: Mathematical and Theoretical, and the International Journal of Advanced Research.

## 6. SELECTED PUBLICATIONS

1. **Dolui, S.** & Salman, M., "A neural network framework for modeling the dynamics of the Landau–Lifshitz–Gilbert equation," *Engineering Applications of Artificial Intelligence*, 181, 115562, 2026.
2. Halder, A., **Dolui, S.**, Dwivedi, S., & Dubey, S., "Tuning curved domain wall dynamics in bilayer nanostructures using dry-friction dissipation, spin–orbit torque, and inertial effects," *Zeitschrift für angewandte Mathematik und Physik*, 77(1), 31, 2026.
3. **Dolui, S.**, Halder, A., Kurumaddali, S., & Dwivedi, S., "Impact of inertial and nonlinear damping effects on the strain-induced domain wall motion in bilayer composite structure," *International Journal of Engineering Science*, 215, 104320, 2025.
4. **Dolui, S.** & Dwivedi, S., "Tuning domain wall dynamics in a notched ferromagnetic nanostrip with Rashba effect," *Chaos: An Interdisciplinary Journal of Nonlinear Science*, 34(12), 2024.
5. **Dolui, S.**, Halder, A., & Dwivedi, S., "Ultrafast domain wall motion in hexagonal magnetostrictive materials: role of inertial damping, magnetostriction, and dry-friction dissipation," *Acta Mechanica*, 235(12), 7121-7139, 2024.
6. **Dolui, S.**, Maity, S., Dwivedi, S., & Consolo, G., "Depinning of domain walls in a notched ferromagnetic nanostrip: role of inertial and nonlinear damping effects," *Physica Scripta*, 99(9), 095237, 2024.
7. **Dolui, S.**, Maity, S., & Dwivedi, S., "Strain-induced ultrafast magnetization dynamics in cubic magnetostrictive materials with inertial and nonlinear dissipative effects," *Zeitschrift für angewandte Mathematik und Physik*, 75(4), 149, 2024.
8. Maity, S., **Dolui, S.**, & Dwivedi, S., "Strain-induced fast domain wall motion in hybrid piezoelectric-magnetostrictive structures with Rashba and nonlinear dissipative effects," *Acta Mechanica Sinica*, 40, 423613, 2024.
9. Halder, A., **Dolui, S.**, & Dwivedi, S., "Dynamics of transverse domain wall in bilayer ferromagnetic-heavy metal nanostructures: Interplay of spin-orbit torque, dry-friction dissipation, and the interfacial Dzyaloshinskii-Moriya interaction," *Mechanics of Advanced Materials and Structures*, 33(1), 2444581, 2024.
10. Maity, S., **Dolui, S.**, Dwivedi, S., & Consolo, G., "Domain wall dynamics in cubic magnetostrictive materials subject to Rashba effect and nonlinear dissipation," *Zeitschrift für angewandte Mathematik und Physik*, 74(1), 23, 2023.

## 7. ACADEMIC PROFILES

- Google Scholar: <https://scholar.google.com/citations?user=HRFDNaQAAAAJ&hl=en&oi=ao>
- ORCID: <https://orcid.org/0009-0006-9744-2703>
- Scopus: <https://www.scopus.com/pages/authors/58038950000>

- ResearchGate: [https://www.researchgate.net/profile/Sarabindu-Dolui?ev=hdr\\_xprf](https://www.researchgate.net/profile/Sarabindu-Dolui?ev=hdr_xprf)
- Web of Science: <https://www.webofscience.com/wos/author/record/65288428>

## **8. CONTACT**

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