CURRICULUM VITAE

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ADDRESS

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RESEARCH AREA & INTERESTS

Applied Mathematics and Mechanics

- Wave Propagation Aspects
- Solid Mechanics, Composite Structures
- Thin-walled Structures: Beam, Plate, Shell
- Porous Media & Viscoelastic Media
- Integral Transforms and its Applications
- Geomechanics & Earthquake Statistics

ACADEMIC CAREER

- 2015: Ph.D. in Applied Mathematics, Indian Institute of Technology (ISM) Dhanbad, India
- 2012: M.Phil. in Applied Mathematics, Indian Institute of Technology (ISM) Dhanbad, India
- 2011: M.Sc. in Mathematics & Computing, Indian School of Mines, Dhanbad, India
- 2009: B.Sc. in Mathematics Honors, University of Calcutta, West Bengal, India

WORK EXPERIENCE

- Aug 2024 Till date: Associate Professor, Department of Mathematics, IIT Indore
- July 2016 Aug 2024: Assistant Professor, Department of Mathematics, IIT Indore
- Feb 2019 Sept 2019: Newton International Fellow, Keele University, United Kingdom with Prof. Julius Kaplunov.
- Feb 2015 July 2016: Post-Doctoral Research Scientist, IISER Kolkata, India with Prof. Supriyo Mitra

PROFESSIONAL CAREER

- No. of Research Papers in Reputed Journals: 50
- No. of Conference Papers: ${\bf 03}$
- No. of Book(Editor): 03
- No. of Externally Funded Research Project: 3 (Ongoing) and 3 (completed)
- No. of Post-Doctoral Fellow: 1 (Ongoing)
- No. of Ph.D. Supervision: 4 (Ongoing) and 2 (Completed)
- No. of M.Sc. Thesis: 1 (Ongoing) and 5 (Completed)
- No. of M.S. Thesis: 2 (Ongoing) and 1 (Completed)
- No. of Internship students (UG/PG): 2 (Ongoing) and 41 (Completed)

HONORS AND AWARDS

- 2023: INI ECR Bursary Award, University of Cambridge, UK
- 2023: Mobility Grant Award 2023, IIT Indore
- 2018: Newton-Bhabha Fellow, Royal Society (UK) and SERB, GOI
- 2016: National Post-Doctoral Fellowship, SERB, DST, GOI
- 2016: Dr. D.S. Kothari Post-Doctoral Fellowship, UGC, GOI

FOREIGN VISIT & INTERNATIONAL COLLABORATIONS

2023 – United Kingdom: University of Cambridge, Keele University, University of Manchester, University of Glasgow, City University of London
2019: UK (Keele University), Russia (Saint Petersburg), Spain (Valencia), USA (Syracuse, Brown)
2018: Brazil (ICM 2018, Rio de Janeiro)
2015: USA (AGU-2015, San Francisco)

SPONSORED PROJECTS

- SERB Core Research Grant: Controlling Elastic Wave Vibrations by Metasurfaces, INR 30 lakhs, 2024–2027, (PI)
- CSIR-EMR-II: Explicit models for near-surface wave fields, INR 20 lakhs, 2023–2026, (PI)
- SERB MATRICS: Mathematical Modelling of Edge Wave Propagation, INR 6.6 lakhs, 2023–2026, (PI)
- NPIU TEQIP-3: Rayleigh wave propagation, INR 1.25 lakhs, 1 year, (PI)(Completed)
- NPIU TEQIP-3: Asymptotic analysis of surface wave field, INR 1.25 lakhs, 1 year, (PI)(Completed)
- Taif University: Mathematical study of surface wave propagation, USD 4500, 2 years, Co-PI (Completed)

- King Abdulaziz Univ.: Rayleigh waves in micropolar media, USD 3000, 1 year, Co-PI (Completed)
- TEQIP, QIP: Education-related projects, INR 5.5 lakhs, 3 years, PI (Completed)

FIELD EXPERIENCE

Experience deploying a seismic network from IISER Kolkata (2 May 2015 - 20 July 2016) in the India-Nepal region post-earthquake of April 25, 2015. Tasks included deployment, maintenance, and data extraction.

GUIDED STUDENTS

Post-Doctoral Fellow

– Dr. Bhagwan Singh (since May 2024)

PhD Students

- Dr. Dipendu Pramanik (2020–2024, PhD Awarded, CSIR-SRF)
- Ms. Manasa Bhat (2021–2025, Thesis submitted, PMRF)
- Mr. Rahul Som (UGC-SRF)
- Mr. Manish Chakraborty (UGC-JRF)
- Mr. Deepak (CSIR-JRF, Research Staff)
- Dr. Bhagwan Singh (Post-Doc, SERB Project)
- Mr. Gurudev Kumar (CSIR Project)

Master's Students

- Anshul (2025) (Ongoing)
- Mansi Yadav (2023) Coupled fractional Fourier transform
- Adarsh Jain (2023) Reflection of plane waves in micropolar thermoelastic medium
- Nikhil (2023) Rayleigh waves in perturbed isotropic half-space
- Tanisha Kumari (2022) SH-type wave due to shear stress discontinuity
- Rahul Kumar (2018) Homotopy perturbation method

CONFERENCE ORGANISATION

- 2023 Convener International Conference on Applied Mathematics and Mechanics (ICAMM 2023), October 18–20, 2023, IIT Indore.
- 2023 Convener
 First In-house Symposium on Mathematics, January 11, 2023, IIT Indore.

– **2022** — Convener

First Workshop on "Hands-on Training using MATLAB," October 6, 2022, Bhaskaracharya Mathematics Laboratory, Department of Mathematics, IIT Indore.

– **2022** — Convener

Webinar on "Recent Developments in Applied Mathematics," February 17, 2022, IIT Indore.

– **2022** — Convener

Six days AICTE-QIP STC on "Implementation of Numerical Methods using MATLAB," January 3–8, 2022, Sponsored by AICTE-QIP.

– **2020** — Convener

Six days TEQIP-III FDP program on Mathematics with MATLAB and Mathematica, November 23–28, 2020, Sponsored by NPIU (link).

– **2020** — Convener

Six days TEQIP-III FDP program on Mathematical Approaches in Mechanics, December 24–31, 2020, Sponsored by NPIU (link).

– **2020** — Convener

One-week Quality Improvement Programme on "Special Functions for Scientists and Engineers," March 2–6, 2020, Sponsored by AICTE-QIP (link).

– **2020** — Convener

TEQIP-III short-term course on "Introduction to Scientific Computing in Engineering," January 15–17, 2020 (link).

 - 2018 — Convener International Conference on "Mathematical Modelling and Scientific Computing (ICMMSC-2018)," July 19–21, 2018, IIT Indore, India (link).

- 2018 Math Coordinator & Faculty Trainer
 Vigyan Jyoti, IIT Indore, May 21 June 10, 2018, under Department of Science and Technology (DST), Govt. of India (link).
- 2018 Organizer International Conference on "Computational Mathematics in Nanoelectronics and Astrophysics," November 1–3, 2018, IIT Indore, India (link).
- 2018 Organizer
 International Symposium on "Water: Resources, Challenges & Sustainability (WRCS),"
 March 10, 2018, IIT Indore, India (link).
- 2018 Organizer Mini Symposium
 International Conference on "Frontiers in Industrial and Applied Mathematics" with
 SIAM-India, April 26–27, 2018, NIT Hamirpur (H.P.), India (link).
- **2017** Convener

Continuing Education Program on "Differential Equations: Theory, Computation and Applications," December 11–14, 2017, IIT Indore (link).

– **2017** — Organizer

International Conference on "Machine Intelligence and Signal Processing (MISP 2017)," December 22–24, 2017, IIT Indore, India (link).

PROFESSIONAL RESPONSIBILITY

- Convener of DUGC in the Department of Mathematics w.e.f. 1st Feb 2022.
- Appointed as Co-Convener of the Institute Space Committee w.e.f. March 03, 2020.
- Convener of Designing and Printing of Standees and Banners Committee of 6th Convocation-2019, IIT Indore.
- Member of DUGC in the department of mathematics w.e.f. 2020.
- Convener/member of Ph.D. Admission committee in Mathematics, December 2019–till date.
- Convener of Dual degree M.Sc. + PhD selection committee in Mathematics, July 2020.
- Member of Department Computer Committee, w.e.f. January 08, 2020.
- Acting Head, Department of Mathematics.
- Member of a committee constituted to see the feasibility of starting the B.Tech. Programme in Mathematics.
- Member of several PSPC committees.
- Faculty Advisor of UG & PG Students.
- Member of Department Seminar Committee w.e.f. 2020.
- Convocation Marshal, 2017–2019.

REGULAR REVIEWER

- Mathematics and Mechanics of Solids (SAGE)
- Mathematical Methods in the Applied Sciences (Wiley)
- The European Physical Journal Plus (Springer)
- Applied Mathematical Modelling (Elsevier)
- ZAMM Journal of Applied Mathematics and Mechanics (Wiley)
- ZAMP Zeitschrift für Angewandte Mathematik und Physik (Springer)
- International Journal for Numerical and Analytical Methods in Geomechanics (Wiley)
- Journal of Fluid Mechanics (Cambridge University Press)
- Physical Review Letters (American Physical Society)
- Journal of Vibration and Control (SAGE)
- Applied Physics Letters
- Science Progress
- Thin-Walled Structures (Elsevier)
- Mathematics and Computers in Simulation (Springer)

- Nondestructive Testing and Evaluation (Taylor & Francis)
- Mathematical and Computational Applications (MDPI)
- International Journal of Geomechanics (ASCE)
- Mechanics of Advanced Materials and Structures (Taylor & Francis)
- Soil Dynamics and Earthquake Engineering (Elsevier)
- Journal of Geophysics and Engineering (IOP Science)
- Acta Geophysica (Springer)
- Geomechanics and Engineering, An International Journal (Techno Press)
- Ain Shams Engineering Journal (Elsevier)
- Advances in Acoustics and Vibration (Hindawi)
- Arabian Journal of Geosciences (Springer)
- Journal of Central South University
- Current Science
- Coatings (MDPI)
- Scientific Reports (Nature)

LAST FIVE YEARS JOURNAL PUBLICATIONS

No.	Publication	IF
52	S. Manna, M. Chakraborty; D. Pramanik; SN Althobaiti (2025), Dynam-	1.7
	ics of torsional waves in complex fractured poro-viscoelastic media with corru-	
	gated boundaries ZAMP-Journal of Applied Mathematics and Physics /	
	Zeitschrift für angewandte Mathematik und Physik, Accepted	
51	M. Bhat and S. Manna, (2025), Refined conditions for nonlocal micropolar wave	1.7
	propagation in layered media, Mathematics and Mechanics of Solids, DOI	
50	M. Bhat and S. Manna, (2025), A novel approach to modelling nonlocal surface	1.4
	waves: refinements in boundary and interface conditions, The IMA Journal	
	of Applied Mathematics (Oxford University Press),DOI,	
49	M. Bhat and S. Manna, (2025), On different modes of Rayleigh wave fields	2.3
	in a micropolar nonlocal viscoelastic medium, ZAMM - Journal of Applied	
	Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik	
	und Mechanik (Wiley), vol. 105, e202400604, DOI	
48	M. Bhat and S. Manna, (2025), Refining Boundary Value Problems in Non-	1.7
	local Micropolar Mechanics, ZAMP - Journal of Applied Mathematics and	
	Physics / Zeitschrift für angewandte Mathematik und Physik, vol. 76	
	(28), DOI	
47	N. Pradhan, S. Manna, S.K. Samal and S. Saha, (2025), SH wave in two-	2.8
	layered structure of functionally graded viscoelastic and monoclinic media under	
	the influence of an interior point source, The European Physical Journal	
	Plus (Springer Nature), vol. 140 (181), DOI	

46	D. Pramanik, S. Manna, and A. Nobili, (2024), Theory of elastic wave propagation	2.9
	in a fluid-saturated multi-porous medium with multi-permeability, Proceedings	
	A Royal Society , A.48020230863, DOI	
45	D. Pramanik and S. Manna, (2024), Love-like wave fields at the interface of slid-	4.1
	ing contact with non-local elastic heterogeneous fluid-saturated fractured poro-	
	viscoelastic layer, European Journal of Mechanics-A/Solids (Elsevier),	
	Vol. 107, 105350, DOI	
44	R. Som, S. Manna, (2024), Bending edge wave on a functionally graded fluid-	2.3
	saturated porous magneto-electro-elastic plate, ZAMM - Journal of Applied	
	Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik	
	und Mechanik (Wiley), Vol. 104 (5), DOI	
43	R. Som, S. Manna, J.R. Banerjee, (2024), Propagation of bending waves along	3.6
	the edge of a point-loaded piezoelectric plate on elastic foundation, Mechanics	
	of Advanced Materials and Structures, 1-11, DOI	
42	D. Pramanik and S. Manna, (2025), Analysis of Torsional Vibration in a Frac-	3.0
	tured Poroelastic Half-Space Coated with Metal Foam and Sliding Interfaces,	
	International Journal of Structural Stability and Dynamics, Vol. 25,	
	No. 02, 2440019,DOI	
41	M. Bhat, S. Manna, M. Alkindiri, (2024), Rayleigh wave fields in a multilayered	3.3
	micropolar media, International Journal of Geomechanics, vol. 24(4), DOI	
40	M. Bhat, S. Manna, (2024), Hybrid Rayleigh wave along a nonlocal nonlin-	4.1
	ear metasurface with two-degree-of-freedom spring-mass resonators, European	
	Journal of Mechanics-A/Solids (Elsevier), 104, 105214, DOI	
39	D. Pramanik, S. Manna, (2025), Analysis of torsional vibration in a fractured	3.6
	poroelastic half-space coated with metal foam and sliding interfaces, Interna-	
	tional Journal of Structural Stability and Dynamics (World Scien-	
	tific),Vol. 25, No. 02, 2440019,DOI	
38	D. Pramanik, S. Manna, Love-type wave fields due to the effect of traction-	2.8
	free and rigid boundary surfaces on the piezoelectric-dispersive layer, Journal	
	of Vibration and Control (SAGE), 2023, DOI	
37	S. Manna, A. Jain, D. Pramanik, The reflection of plane waves in a microp-	3.4
	olar fiber-reinforced thermoelastic medium under impedance boundary condi-	
	tion, The European Physical Journal Plus (Springer), 2023, vol. 138, pp.	
	967.,DOI	
36	T. Kumari, R. Som, S. Althobaiti, S. Manna, Bending wave at the edge of a	6.4
	thermally effected functionally graded poroelastic plate, Thin-Walled Struc-	
	tures (Elsevier), 186, 110719, 2023.,DOI	
35	D. Pramanik, S. Manna, O. Sahin, Love-type wave propagation in a coated	5.0
	fluid-saturated fractured poro-viscoelastic layer with sliding contacts and point	
	source effect, Applied Mathematical Modelling (Elsevier), vol. 125, pp.	
	424–444, 2024.,DOI	
34	M. Bhat, S. Manna, Rayleigh wave fields in a multi-layered micropolar me-	3.918
	dia, International Journal of Geomechanics (ASCE), 2024, vol. 24(4),	
	04024026.,DOI	
33	D. Pramanik and S. Manna, Love-like wave dispersion in a highly non-	3.007
	homogeneous viscoelastic orthotropic layer under the effect of non-local elasticity,	
	Mathematical Methods in the Applied Sciences (WILEY), Volume 46,	
	Issue 14, pp. 15048-15072, 2023., DOI,	

32	S. Manna, T. Kumari and D. Pramanik, Effect of SH-type waves and shear	2.70
	stress discontinuity on a moving loaded composite structure, Acta Mechanica	
	(Springer), DOI, 2023.	
31	R. Som and S. Manna, Konenkov's bending wave on an FGM plate supported	5.336
	by a semi-infinite viscoelastic Pasternak foundation, Applied Mathematical	
	Modelling (Elsevier), vol. 119, 338–353, 2023.,DOI	
30	M. Bhat and S. Manna , Behavior of Love wave fields due to the reinforcement,	3.5
	porosity distributions, non-local elasticity and irregular boundary surfaces, In-	
	ternational Journal of Applied Mechanics (World Scientific), vol. 15(6),	
	2350042, 2023.,DOI	
29	N. Pradhan, S. Manna, S.K. Samal, SH-type wave motion in a geophysical	2.80
	model with monoclinic and heterogeneous media due to a point source at the	
	interface, Archive of Applied Mechanics (Springer), DOI, 2023.	
28	S. Manna and R. Som, Flexural waves at the edge of nonlocal elastic plate	2.80
	associated with the Pasternak foundation, Journal of Vibration and Control	
	(SAGE), 2022, DOI	
27	S. Manna, D. Pramanik, S.N. Althobaiti, Love-type surface wave propagation	6.4
	due to interior impulsive point source in a homogeneous-coated anisotropic poroe-	
	lastic layer over a non-homogeneous extended substance, Waves in Random	
	and Complex Media (Taylor and Francis), 2023, DOI	
26	S. Manna, and M. Bhat, Love wave fields in a non-local elastic model with	4.00
	reinforced and inhomogeneous media, Soil Dynamics and Earthquake Engi-	
	neering (Elsevier), 161, 107388, 2022.,DOI	
25	D. Pramanik, S. Manna, Dynamic behavior of material strength due to the	2.70
	effect of prestress, aeolotropy, non-homogeneity, irregularity and porosity on the	
	propagation of torsional wave, Acta Mechanica (Springer), 2022, vol. 233,	
	pp. 1125–1146.DOI	4.00
24	S. Manna, T. Halder, S.N. Althobati, Dispersion of Love-type wave and its lim-	4.00
	itation in a nonlocal elastic model of nonhomogeneous layer upon an orthotropic	
	extended medium, Soil Dynamics and Earthquake Engineering (Elsevier),	
	2022, 107117.,DOI	4.907
23	S. Manna and A. Kumar, Dynamic behavior of multi-layer heterogeneous com-	4.397
	posite magneto-elastic structures for surface wave scattering, Applied Matne-	
	S. Mappe and T.C. Anieli. Davleich type man digneration in an incompressible	5 190
	5. Manna and 1.C. Anjan, Rayleigh type wave dispersion in an incompressible functionally graded arthotropic half graded by a thin fluid actumeted as	0.129
	alotropic percus lever Applied Mathematical Modelling (Floquier) 2020	
	vol 83 pp 500-613 DOI	
91	DK Sharma M Bachhor S Manna N Sarkar Vibration analyzic of func	2 70
<u></u>	tionally graded thermoelastic nonlocal sphere with dual-phase-lag effect Acta	2.10
	Mochanica (Springer) 2020 vol 231 pp. 1765-1781 DOI	
	wiechanica (Springer), 2020, vol. 251, pp. 1705–1701, DOI	