Soumya Mukherjee

Born on April 24th, 1988

Kolkata-India

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Interests

- Finite elasticity & viscoelasticity
- Continuum mechanics
- Constitutive modeling
- Biomechanics

Education

2022. **Ph.D.** (Mech. Engg.)
NIT Jamshedpur, India.

2012. **M.Tech.** (Mech. Engg.)
IIT Kanpur, India
8.75/10.

2010. **B.E.** (Mech. Engg.)
IIEST Shibpur, India.

2005. **Higher Secondary** (Science)
WBCHSE (79.3%)

2003. **Secondary**
WBBSE (83.88%)

Present position

Aug. 2024 – Present **Assistant Professor** at **IIT Palakkad**

Relevant Experiences

Oct. 2023 – Aug. 2024 Assistant Professor at *NIT Calicut*

May 2022 – Oct. 2023 Post-doctoral Fellow at *IIT Madras*

2013 – 2017 Research scholar at *Carnegie Mellon University*

Awards

Best research-scholar award, 2021 research conclave, NIT Jamshedpur.

Publications

17. S. Mukherjee, P. Ravindran, (2024) *"Representation of stress and free energy for a viscoelastic body from a stressed reference"* **Journal of the Mechanics and Physics of Solids** (I. F. 5.582).DOI

16. S. Mukherjee, M. Destrade, A. L. Gower, (2022) *"Representing stress and strain energy of elastic solids with initial stress and transverse texture anisotropy"* **Proceedings of the Royal Society-A: Mathematical, Physical, and Engineering Science**. DOI

15. S. Mukherjee (2024) *"Representing implicit elasticity from a residually stressed reference"* **International Journal of Engineering Science.** DOI

14. S. Mukherjee (2022) *"Constitutive relation, limited stretchability, and stability of residually stressed Gent materials"* **Mechanics Research Communications** 120 *(I.F. 2.71)*. DOI

13. S. Mukherjee (2025), "*The responses of any arbitrary initially stressed reference and the stress-free reference*" **International Journal of Non-Linear Mechanics** DOI

12. S. Mukherjee, A. K. Mandal, (2021) *"A generalized strain energy function using fractional powers: Application to isotropy, transverse isotropy, orthotropy, and residual stress symmetry"* **International Journal of Non-Linear Mechanics** 128 *(I.F. 3.336)*. DOI

Review activities:

International Journal of Non-Linear Mechanics (4)

Journal of the Mechanics and Physics of Solids (3)

International Journal of Engineering Science (2)

Acta Mechanica (1)

Mechanics of Solids (2)

Conference

USACM Thematic Conference at University of Michigan, Ann Arbor, 29-31 Aug, 2016.

International Congress on Computational Mechanics and Simulation, Dec 9-12, 2012

Referees:

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IIEST Shibpur
debasis_datta@rediffmail.com

Publications

11. S. Mukherjee (2023) *"Some models for initially stressed and initially strained structurally anisotropic incompressible materials"* **Mathematics and Mechanics of Solids** DOI

10. S. Mukherjee, P. Ravindran, (2023) *"A model for residually stressed viscoelastic bodies and its application to some boundary value problems"* **Mathematics and Mechanics of Solids** DOI

9. S. Mukherjee, A. K. Mandal, (2021) *"Static and dynamic characteristics of a compound sphere using Initial Stress Reference Independence"* **International Journal of Non-Linear Mechanics** 136 *(I.F. 3.336).* DOI

8. S. Mukherjee (2022) *"Influence of residual stress in failure of soft materials"* **Mechanics Research Communications** 123 *(I.F. 2.71).* DOI

7. S. Mukherjee, A. K. Mandal, (2021) *"Extended Gent models for residually stressed thick spheres and cylinders"* **International Journal of Non-Linear Mechanics** 137 *(I.F. 3.336).* DOI

6. S. Mukherjee (2022) *"Limited stretchable phenomenological models using the framework of fractional powers"* **Archive of Applied Mechanics** 123 *(I.F. 2.46).* https://doi.org/10.1007/s00419-022-02251-w

5. S. Mukherjee, P. Mahata, (2021) *"Computational investigation for endocytosis of CoVID-19 virus SARS-CoV-2 in cell membrane"* **Proc. IMechE Part C: J. Mechanical Engineering Science** 235:24 *(I.F. 1.858).* DOI

4. S. Mukherjee, *et al.* (2020) *"Symmetry-adapted tight-binding electronic structure analysis of carbon nanotubes with defects, kinks, twist, and stretch"*, **Mathematics and Mechanics of Solids** *(I.F. 2.719).* DOI

3. S. Mukherjee, D. Giribabu, (2021) *"Stability of plane Couette flow past an initially stressed solid"* **International Journal of Engineering Science** 169 *(I.F. 8.843).* doi: doi.org/10.1016/j.ijengsci.2021.103572

2. D. Giribabu, S. Mukherjee (2022) *"The stability of plane Couette flow over inhomogeneously stressed solids"* **International Journal of Mechanical Sciences** *(I.F. 7.93).* DOI

1. S. Mukherjee, P. Saxena, (2025) “Deformation and stability of initially stressed hyperelastic plates", **International Journal of Solids and Structures** (Accepted)