

## PATENTS

---

P1. Kumar, K., Sah, B., **Sajal**, Choudhary, N., & Roy, P., “A method to measure peridynamics length scale parameter of materials”, Application No. 202531119989. Filed on 01/12/2025.

## JOURNAL ARTICLES

---

J12. Dey, B., Sajal, & Roy, P. (2025), “Peridynamics modeling of multi-shell structures: Application to metasurfaces”, *Thin-Walled Structures*, 217, Part B, 113890. <https://doi.org/10.1016/j.tws.2025.113890>. [Q1, IF: 8.3]

J11. Sah, B., **Sajal**, Choudhary, N., Kumar, K., & Roy, P. (2025), “Peridynamics model of viscoelasticity for beams and lattice structures”, *International Journal of Mechanical Sciences*, 301, 110545. <https://doi.org/10.1016/j.ijmecsci.2025.110545>. [Q1, IF: 11.4]

J10. Kumar, K., Choudhary, N., **Sajal**, Sah, B., & Roy, P. (2025), “Peridynamics model of viscoelasticity for shells and metasurfaces”, *Computer Methods in Applied Mechanics and Engineering*, 444, 118169. <https://doi.org/10.1016/j.cma.2025.118169>. [Q1, IF: 7.6]

J9. Choudhary, N., **Sajal**, & Roy, P. (2025), “Peridynamics beam plasticity theory: Yield surface for general cross-sectional geometry”, *International Journal of Mechanical Sciences*, 295, 110249. <https://doi.org/10.1016/j.ijmecsci.2025.110249>. [Q1, IF: 11.4]

J8. **Sajal**, & Roy, P. (2025), “Peridynamics modeling of locally resonant metamaterials”, *Journal of Peridynamics and Nonlocal Modeling*, 7, 3. <https://doi.org/10.1007/s42102-025-00127-5>. [Q2]

J7. Ranjana, K. N., **Sajal**, & Roy, P. (2025), “Riemannian geometry based peridynamics computational homogenization method for cellular metamaterials”, *Computer Methods in Applied Mechanics and Engineering*, 436, 117714. <https://doi.org/10.1016/j.cma.2024.117714>. [Q1, IF: 7.6]

J6. **Sajal**, & Roy, P. (2025), “Peridynamics model of torsion-warping: Application to lattice beam structures”, *Thin-Walled Structures*, 206, Part A, 112603. <https://doi.org/10.1016/j.tws.2024.112603>. [Q1, IF: 8.3]

J5. Mahadeshwar, V., **Sajal**, & Roy, P. (2024), “Finite deformation peridynamics shell theory: Application to mechanical metasurfaces”, *Thin-Walled Structures*, 205, Part B, 112401. <https://doi.org/10.1016/j.tws.2024.112401>. [Q1, IF: 8.3]

J4. Kumar, A., **Sajal**, & Roy, P. (2024), “Peridynamics contact model: Application to healing using phase field theory”, *International Journal of Mechanical Sciences*, 280, 109553. <https://doi.org/10.1016/j.ijmecsci.2024.109553>. [Q1, IF: 11.4]

J3. **Sajal** & Roy, P. (2024), “Finite deformation micropolar peridynamic theory: Variational consistency of wryness measure”, *International Journal of Mechanical Sciences*, 271, 109306. <https://doi.org/10.1016/j.ijmecsci.2024.109306>. [Q1, IF: 11.4]

- J2. **Sajal** & Roy, P. (2023), "Peridynamics modeling of cellular elastomeric metamaterials: Application to wave isolation", *International Journal of Mechanical Sciences*, 254, 108456. <https://doi.org/10.1016/j.ijmecsci.2023.108456>. [Q1, IF: 11.4]
- J1. Dutta, S. C., Kumar, S., Bhoyar, P. S., Hussain, M. A., & **Sajal** (2022), "Behavior of vertically irregular structures near mines: Comparison of responses under seismic and mine blast-induced ground motion", *The Structural Design of Tall and Special Buildings*, 31(1), e1897. <https://doi.org/10.1002/tal.1897>. [Q2, IF: 1.8]

### **CONFERENCE PROCEEDINGS AND PRESENTATIONS**

---

- C3. **Sajal** & Roy, P. (2024), "A finite deformation micropolar peridynamic theory and its application to metamaterials", 16<sup>th</sup> World Congress on Computational Mechanics and 4<sup>th</sup> Pan American Congress on Computational Mechanics (**WCCM/PANACM**), July 21-26, 2024, Vancouver, Canada (ID: W241289). [Published Proceeding, DOI: <https://doi.org/10.23967/c.wccm.2024.067>]
- C2. **Sajal** & Roy, P. (2024), "Peridynamics Simulation of Wave Isolation in Metamaterials", 9<sup>th</sup> European Congress on Computational Methods in Applied Sciences and Engineering (**ECCOMAS**), June 3-7, 2024, Lisbon, Portugal (ID: 356). [Presentation]
- C1. **Sajal** & Roy, P. (2022), "Study of wave propagation in polymers in the presence of local elastic instability and rupture using peridynamics", 8<sup>th</sup> International Congress on Computational Mechanics & Simulation (**ICCMS**), December 9-11, 2022, IIT Indore, India (Reference Id: ICCMS21\_1657817514). [Presentation]