

PRANESH ROY, Ph.D.

Assistant Professor

Department of Civil Engineering

Indian Institute of Technology (Indian School of Mines) (IIT-ISM) Dhanbad

Dhanbad, Jharkhand 826004, India

Phone: +91 9632140975

E-mail: pranesh@iitism.ac.in , roypranesh1990@gmail.com**PUBLICATIONS****Refereed Articles**

- 11 Behera, D., **Roy, P.**, & Madenci, E. (2021), “Peridynamic modeling of bonded-lap joints with viscoelastic adhesives in the presence of finite deformation”, *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 374, 113584. SCI and Scopus Indexed. <https://doi.org/10.1016/j.cma.2020.113584>
- 10 **Roy, P.**, Behera, D., & Madenci, E. (2020), “Peridynamic Simulation of Finite Elastic Deformation and Rupture in Polymers”, *Engineering Fracture Mechanics*, Elsevier, 236, 107226. SCI and Scopus Indexed. <https://doi.org/10.1016/j.engfracmech.2020.107226>
- 9 Behera, D., **Roy, P.**, & Madenci, E. (2020), “Peridynamic Correspondence Model for Finite Elastic Deformation and Rupture in Neo-Hookean Materials”, *International Journal of Non-Linear Mechanics*, Elsevier, 126, 103564. SCI and Scopus Indexed. <https://doi.org/10.1016/j.ijnonlinmec.2020.103564>
- 8 **Roy, P.**, Kumar, S., & Roy, D. (2020), “Cauchy–Maxwell Equations: A Space–Time Conformal Gauge Theory for Coupled Electromagnetism and Elasticity”, *International Journal of Non-Linear Mechanics*, Elsevier, 126, 103542. SCI and Scopus Indexed. <https://doi.org/10.1016/j.ijnonlinmec.2020.103542>
- 7 **Roy, P.**, Roy, D., & Reddy, J. N. (2019), “A Conformal Gauge Theory of Solids: Insights into a Class of Electromechanical and Magnetomechanical Phenomena”, *Journal of the Mechanics and Physics of Solids*, Elsevier, 130, 35-55. SCI and Scopus Indexed. <https://doi.org/10.1016/j.jmps.2019.05.008>
- 6 **Roy, P.**, & Roy, D. (2019), “Peridynamics Model for Flexoelectricity and Damage”, *Applied Mathematical Modelling*, Elsevier, 68, 82-112. SCI and Scopus Indexed. <https://doi.org/10.1016/j.apm.2018.11.013>
- 5 Chowdhury, S. R., **Roy, P.**, Roy, D., & Reddy, J. N. (2019), “A Modified Peridynamics Correspondence Principle: Removal of Zero-energy Deformation and Other Implications”, *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 346, 530-549. SCI and Scopus Indexed. <https://doi.org/10.1016/j.cma.2018.11.025>
- 4 **Roy, P.**, Deepu, S. P., Pathrikar, A., Roy, D., & Reddy, J. N. (2017), “Phase Field based Peridynamics Damage Model for Delamination of Composite Structures”, *Composite Structures*, Elsevier, 180, 972-993. SCI and Scopus Indexed. <https://doi.org/10.1016/j.compstruct.2017.08.071>
- 3 **Roy, P.**, Pathrikar, A., Deepu, S. P., & Roy, D. (2017), “Peridynamics Damage Model through Phase Field Theory”, *International Journal of Mechanical Sciences*, Elsevier, 128, 181-193. SCI and Scopus Indexed. <https://doi.org/10.1016/j.ijmecsci.2017.04.016>
- 2 Rahaman, M. M., **Roy, P.**, Roy, D., & Reddy, J. N. (2017), “A Peridynamic Model for Plasticity: Micro-inertia based Flow Rule, Entropy Equivalence and Localization Residuals”, *Computer Methods in Applied Mechanics and Engineering*, Elsevier, 327, 369-391. SCI and Scopus Indexed. <https://doi.org/10.1016/j.cma.2017.07.034>
- 1 Chowdhury, S. R., **Roy, P.**, Roy, D., & Reddy, J. N. (2016), “A Peridynamic Theory for Linear Elastic Shells”, *International Journal of Solids and Structures*, Elsevier, 84, 110-132. SCI and Scopus Indexed. <https://doi.org/10.1016/j.ijsolstr.2016.01.019>

BOOK UNDER PREPARATION

Madenci, E., **Roy, P.**, & Behera D. (2021), “Advances in Peridynamics” (Springer).

BOOK CHAPTERS (PUBLISHED/SUBMITTED)

- 3 **Roy, P.**, Behera, D., & Madenci, E., “Peridynamic modeling of thermo-oxidative degradation in polymers” (submitted in Springer).
- 2 **Roy, P.**, Pathrikar, A., & Roy, D., “Phase Field based Peridynamics Damage Model: Application to Delamination of Composite Structures and Inelastic Response of Ceramics”, *Peridynamic Modeling, Numerical Techniques, and Applications, 1st Edition*, Editors: Erkan Oterkus, Selda Oterkus, & Erdogan Madenci, Elsevier, 1st May 2021, Paperback ISBN: 9780128200698.

- 1 Roy, P.,** Pathrikar, A., & Roy, D., “Peridynamics Damage Model through Phase Field Theory”, *Peridynamic Modeling, Numerical Techniques, and Applications, 1st Edition*, Editors: Erkan Oterkus, Selda Oterkus, & Erdogan Madenci, Elsevier, 1st May 2021, Paperback ISBN: 9780128200698.

CONFERENCE PRESENTATIONS

- 3 Madenci, E., Roy P., & Behera, D.,** “Peridynamics Implementation of Liu Murakami Creep Damage Model in Moose Framework”, IMECE2020-25220, *ASME's International Mechanical Engineering Congress and Exposition (IMECE)*, Virtual Conference: November 16 – 19, 2020.
- 2 Roy, P., & Roy, D.,** “A Peridynamics Theory for Axisymmetric Structures”, *19th International Conference on New Trends in Fatigue and Fracture*, October 8-10, 2019, Tucson, Arizona, USA. (presenting author)
- 1 Roy, P., & Roy, D.,** “Phase Field based Peridynamics Damage Model and Applications to Composite Delamination and Damage in Ceramics”, IMECE2017-72950, *ASME's International Mechanical Engineering Congress and Exposition (IMECE)*, November 3-9, 2017, Tampa, Florida, USA. (presenting author)