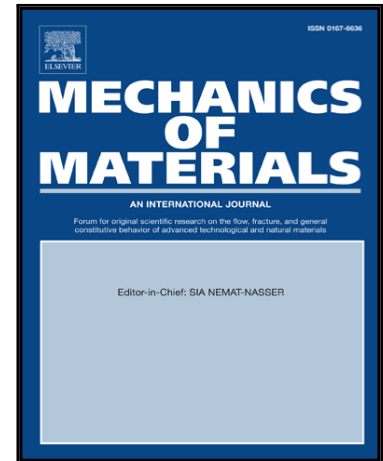


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Reduced order multiscale modeling of fiber reinforced polymer composites including plasticity and damage

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Highlights

- A multiscale approach for fiber reinforced polymer composites is proposed which considers the plasticity and damage.
- The work includes the characterization of epoxy resins which show nonlinear stress-strain response due to damage and plasticity.
- Experiments were performed to demonstrate the damage and plasticity dependent behavior of matrix material as well as to validate the plasticity model.
- The proposed formulation is applied to study low velocity impact of E-glass/epoxy composite.
- The simulation results are validated with the experiments.

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