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TMS 2020

149th Annual Meeting & Exhibition

February 23-27, 2020 • San Diego, California, USA



Submit an abstract to:

Mechanics and Structural Reliability

Fracture Modeling of Composite Materials

Composite materials are increasingly used in industry due to the possibility of tailoring their properties based on the applications. Their greatest advantage is strength and stiffness combined with lightness. However, their optimal design and performance is still limited by the lack of knowledge of physical mechanisms that control their fracture behavior. Machine learning and big data driven approaches have not been extensively studied for fracture behavior predictions.

The objective of this symposium is to bring together researchers in fracture mechanics, computational mechanics, and material science to discuss the advances and challenges in developing reliable computational models/tools for fracture analysis and design of composites.

Potential topics include, but are not limited to:

- Novel physics-based models and algorithms for crack initiation and propagation
- Multiscale/multiphysics modeling of fracture
- Machine-learning-based algorithms for analysis of fractures
- Constitutive modeling
- Probabilistic modeling
- Scale bridging techniques and homogenization methods
- Verification, validation, and uncertainty quantification of models
- Advances in prediction of fracture toughness and failure mode transition and competition

ORGANIZERS

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Abstract Deadline is July 1, 2019. Submit online at
www.programmaster.org/TMS2020.

Questions?
Contact programming@tms.org