Special Issue

Acoustic Emission for Sustainable Polymer Composites: Methods, Data, and Multimodal Monitoring

Message from the Guest Editor

Acoustic emission (AE) is a powerful non-destructive technique for detecting and classifying damage processes in polymeric materials and biocomposites. This Special Issue seeks contributions that move beyond isolated case studies to address three interlinked priorities: (1) Robust AE methodology and data practices, including benchmark tests, metadata standards, and open datasets. (2) Multimodal and embedded sensing approaches that combine AE with digital image correlation, thermography, embedded piezoelectric/film sensors, or other methods to improve damage localization and attribution. (3) Advanced data analytics, from unsupervised clustering to explainable machine learning, which translate AE waveforms into mechanistic descriptions within the composite with uncertainty quantification. Papers highlighting sustainability considerations and the unique AE fingerprints of natural fiber composites are particularly welcome, as are studies demonstrating transfer from lab tests to in-service monitoring.

Guest Editor

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Message from the Editor-in-Chief

Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.9.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

Prof. Dr. Alexander Böker
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