

Special Issue

Advanced Sensing Digital Image Processing for Dynamic Deformation and Vibration Monitoring

Message from the Guest Editors

Structural integrity assessment in civil, mechanical, and aerospace engineering increasingly relies on the integrated monitoring of both dynamic deformation and vibration responses. While vibration monitoring captures temporal behavior, dynamic deformation quantification provides critical spatial evolution data under operational loads. Recent advances in non-contact sensing (e.g., laser vibrometry, DIC, radar interferometry), multi-physics modeling, and AI-driven diagnostics have enabled unprecedented synergies in this cross-disciplinary field. This Special Issue aims to consolidate cutting-edge research on integrated methodologies, technologies, and applications for concurrent dynamic deformation and vibration monitoring. We invite original contributions addressing novel methods, sensors, data fusion techniques, model validations, and case studies that advance predictive maintenance, structural safety, and performance optimization.

Guest Editors

Dr. Zeren Gao

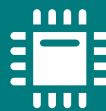
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