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Nota di contenuto	Innovations in Super Resolution Microscopy -- Measuring Strain Distribution Around Inclusions and Matrix Interface Using Global Digital Image Correlation -- Evaluation of Stress State and Fracture Strain of High-Strength Steel Using Stereo Image Correction -- Bistability and Irregular Oscillations in Pairs of Opto-thermal Micro-oscillators -- Noninvasive Shape Measurements by MEMS-based Fringe Projection with Application to Middle-ear Mechanics -- High-Speed Optical Extensometer for Uniaxial Kolsky Bar Experiments -- On the Miura Ori Modal Response: A Look Throughout the Experimental Side -- Using Digital Image Correlation to Characterize the Static and Dynamic

Behavior of Structures: Industrial Applications and Lessons Learned -- EnablingDigital Image Correlation withHigh-ResolutionMicroscopic OpticsviaWorking DistanceAutomation:AdvancingResolutionand Accuracy Limits -- Characterization of Bioengineered Tissues by Digital Holographic Vibrometry and 3D Shape Deep Learning -- Coordinated Twinning Bands in Magnesium at the Existence of Stress Raisers via in situ Microscopic Image Correlation -- Determining the Onset of Transverse Cracking in a Woven Composite using Digital Image Correlation.

Sommario/riassunto

Advancements in Optical Methods, Digital Image Correlation & Micro- and Nanomechanics, Volume 4 of the Proceedings of the 2022 SEM Annual Conference & Exposition on Experimental and Applied Mechanics, the fourth volume of six from the Conference, brings together contributions to this important area of research and engineering. The collection presents early findings and case studies on a wide range of optical methods ranging from traditional photoelasticity and interferometry to more recent DIC and DVC techniques, and includes papers in the following general technical research areas: DIC Methods & Its Applications Photoelsticity and Interferometry Applications Micro-Optics and Microscopic Systems Multiscale and New Developments in Optical Methods Extreme Nanomechanics In-Situ Nanomechanics Expanding Boundaries in Metrology Micro and Nanoscale Deformation MEMS for Actuation, Sensing and Characterization 1D & 2D Materials.