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	Nota di contenuto	Chapter 1. Beyond the Airbrush: Applications of Digital Image Correlation in Vascular Biomechanics -- Chapter 2. A New Method of Fringe Pattern Analysis -- Chapter 3. A Review: Optical Methods that Evaluate Displacement Information (40-min) -- Chapter 4. Measuring Spallation Strength of Epoxy by Laser Spallation Technique -- Chapter

5. Uncertainty Quantifications for Multiviewcorrelation -- Chapter 6. Image Analysis of Curvature Using Classical Mechanics, The Elastica -- Chapter 7. Fast Adaptive Global Digital Image Correlation -- Chapter 8. Speckle Image Rendering for DIC Performance Assessment -- chapter 9. Speckles and DIC or Checkerboards and LSA? -- Chapter 10. Update on the 2D-DIC Challenge: Results and Conclusions -- Chapter 11. Eliminating Air Refraction Issues in DIC by Conducting Experiments in Vacuum -- Chapter 12. Identification of Deformation Mechanism in Biomaterials Through AFM and Digital Image Correlation -- Chapter 13. Fast, Sub-Pixel Accurate Digital Image Correlation Algorithm Powered by Heterogeneous (CPU-GPU) Framework -- Chapter 14. Vibration Modal Analysis by High-Speed and Accurate Shape Measurement using One-Pitch Phase Analysis Method -- Chapter 15. DIC Image on FIB Ring-Core Analysis of Depth Sensing Residual Stress Measurement of Thin Films -- Chapter 16. Measurement of Local Strain Distribution and Its Variation Near Eyes During Blink Using Digital Image Correlation -- Chapter 17. Investigating Fatigue Striation Morphology in Crystallisable Elastomers by using a Phase Extraction Algorithm -- Chapter 18. Ultra-High Speed Imaging for DIC Measurements in Kolsky Bar Experiments -- Chapter 19. Application of Digital Image Correlation to Structures in Fire -- Chapter 20. Full-Field Determination of the Taylor-Quinney Coefficient in Tension Tests of Ti-6Al-4V at Strain Rates up to 7000 s^{1} -- Chapter 21. Laser and White-light Speckle Techniques - A Brief Review (40-min) -- Chapter 22. Accurate Reconstruction of High-gradient Strain Field in Digital Image Correlation: A Local Hermite Scheme -- Chapter 23. Development of a New Normalization Technique for Twelve- Fringe Photoelasticity (TFP) -- Chapter 24. On Performing Spatiotemporal Stereocorrelation at Very High Temperatures -- Chapter 25. Compression Tests on CFRP Analyzed by Digital Image Correlation -- Chapter 26. Evaluation of Residual Stress with Optical Methods -- Chapter 27. Elevated Temperature Optical Microscopy DIC -- chapter 28. A Digital Laser Speckle Technique for Generating Slope Contours of Bent Plate -- Chapter 29. Deflectometry on Curved Surfaces -- Chapter 30. Measurement on a Sample of Fuel Cell at High Temperature -- Chapter 31. Simulation of 3D Reconstruction of Conical Calibration Targets -- Chapter 32. Recent Advancements and Perspective about Digital Holography: A Super-tool in Biomedical and Bioengineering Fields -- Chapter 33. High-speed Holographic Shape and Transient Response Measurements of Mammalian Tympanic Membrane -- Chapter 34. High-speed Digital Image Correlation forEndoscopy: a Feasibility Study -- Chapter 35. Holographic Interferometry - Then and Now.

Sommario/riassunto

Advancement of Optical Methods & Digital Image Correlation in Experimental Mechanics, Volume 3 of the Proceedings of the 2018 SEM Annual Conference & Exposition on Experimental and Applied Mechanics, the third volume of eight 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: New Developments in Optical Methods & Fringe Pattern Analysis; DIC Applications for Challenging Environments; Optical Methods in SEM: History & Perspective; Mechanical Characterization of Materials & Structures with Optical Methods; Bioengineering.