

Preface

Advancement of Optical Methods in Experimental Mechanics represents one of nine volumes of technical papers presented at the SEM 2017 SEM Annual Conference & Exposition on Experimental and Applied Mechanics organized by the Society for Experimental Mechanics and held in Indianapolis, IN, June 12–15, 2017. The complete Proceedings also includes volumes on: *Dynamic Behavior of Materials*; *Challenges In Mechanics of Time-Dependent Materials*; *Mechanics of Biological Systems, Materials and Other Topics in Experimental and Applied Mechanics*; *Micro-and Nanomechanics*; *Mechanics of Composite, Hybrid & Multifunctional Materials*; *Fracture, Fatigue, Failure and Damage Evolution*; *Residual Stress, Thermomechanics & Infrared Imaging*, *Hybrid Techniques and Inverse Problems*; and *Mechanics of Additive and Advanced Manufacturing*.

Each collection presents early findings from experimental and computational investigations on an important area within experimental mechanics, optical methods being one of these areas.

With the advancement in imaging instrumentation, lighting resources, computational power, and data storage, optical methods have gained wide applications across the experimental mechanics society during the past decades. These methods have been applied for measurements over a wide range of spatial domain and temporal resolution. Optical methods have utilized a full range of wavelengths from X-ray to visible lights and infrared. They have been developed not only to make two-dimensional and three-dimensional deformation measurements on the surface, but also to make volumetric measurements throughout the interior of a material body.

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