Special Issue

In Situ Full-Field Deformation Measurements on Advanced Manufacturing Processes

Message from the Guest Editors

Recently, several full-field optical techniques (white-light and interferometric techniques) have been developing. The type of data provided by these optical techniques is intrinsically full-field and contact-free, in contrast to conventional pointwise and contact measuring apparatus. Consequently, the assessment of deformation measurements across a whole region of interest has been gradually opening new research interests and perspectives in the branch of mechanics and engineering. These techniques have been consolidated both in scientific research and industry. The recent advent of advanced manufacturing processes, which will include additive manufacturing, customised functionally graded materials (FGM) and advanced composite material, can tremendously benefit from this generation of full-field driven data. In situ and small-scale image-based observations of manufacturing and technological processes are an active area of development and research. The access of full-field measurements should enhance our understanding of the physical manufacturing processes being undertaken for better modelling and prediction and for inspection purposes.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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