Special Issue

Small-Scale Mechanical Behaviors in Advanced Engineering Materials

Message from the Guest Editors

Mechanical failures of high-tech devices, such as nanoelectronics and microelectromechanical systems, are often caused by factors like process-induced residual stresses, adhesion, mechanical wear, or mechanical deformation during fabrication. Therefore, understanding the small-scale mechanical properties of materials is essential for the commercial success of future technologies. Advanced mechanical characterization techniques, including nanoindentation and atomic force microscope-based methods, have proven to be crucial in understanding these complex material behaviors. This Special Issue, titled 'Small-Scale Mechanical Behaviors in Advanced Engineering Materials', invites researchers from both industry and academia to present their recent work in areas such as nanoindentation, micro- and nano-tribology (friction, wear, and lubrication), interfacial adhesion, chemical mechanical polish (CMP), and fracture mechanics, as such studies are crucial for enhancing the performance and reliability of advanced technological devices. These devices include, but are not limited to, nanoelectronics, microelectromechanical, biomaterials, medical implants, energy storage devices.

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