

**Special Issue on New Functions of Micro/Nanomaterials and Devices**

Call for Papers

With the rapid progress of top-down and bottom-up technologies, various micro/nanosized materials and structures are currently being precisely produced. It is reported that such small materials give rise to new emergent functions that have never been seen before. For example, in nanomechanics, it has been found that if single-crystal silicon, which is a brittle material in bulk, is shrunk to the nanometer scale, it shows plastic deformation originating from dislocation glide even at intermediate temperatures. This is used for plastic reshaping in silicon devices. As another example, it has been discovered that in the gap between two nanosized electrodes with sharpened tips, a tunneling current flows without physical contact between the two. It is used as a fundamental principle of scanning tunneling microscopy. Both are already established findings, but they interest not only researchers but also engineers who are developing new functional devices, which will become a trigger to create a new R&D field.

This special issue focuses on new functions provided by micro/nano/atomic-scale materials, structures, and spacings as well as microdevices with new functions derived from attractive characteristics. The research topics are not limited to new functions originating from small materials and devices, but topics such as the effects of size and processes on fracture, fatigue, and reliability of materials or devices in mechanical, electronic, chemical, physical, optical, biological, and medical fields are also welcome. Of course, state-of-the-art technologies related to small materials and devices will also be considered. We are looking forward to receiving interesting and relevant research papers from you.

**Guest editor:** Professor Takahiro Namazu (Kyoto University of Advanced Science)

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