

Special Issue

Mechanical Behaviors and Interactions of Nanostructures with Nanoparticles

Message from the Guest Editor

Nanostructures have numerous potential applications in various fields. These tiny elements could interact with the in-contact nanoparticles due to their specific bonds and other interactional forces. So far, the role of the above interactions on several structural responses of hosted nanostructures have been examined in particular cases via advanced theories of elasticity; however, there are still many unexplained problems in this vast realm of applied mechanics. The topics of interest for this Special Issue include, but are not limited to:

- Beam-, plate-, and shell-like nanostructures for nanoparticle delivery;
- Ensembles of nanotubes with attached nanoparticles as physical sensors;
- Nanostructures with in-contact nanoparticles under multi-physical fields;
- Nanostructures–nanoparticle-systems in a moving state;
- Nonlinear mechanical aspects of nanoparticle–nanostructure interactions.

Keywords: vibrations; mechanical response; nanoparticles; nanostructures; static and dynamic instabilities; mechanical interactions; size-dependent continuum mechanics

Guest Editor

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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