

Special Issue

Bioinspired Materials in Micro- and Nanodevices

Message from the Guest Editors

Plants and animals have evolved complex, environment-adapted micro- and nanostructures through natural selection. Often, these micro- and nanostructures are nature's ingenious ways of altering the effective properties of materials, including elastic, optical, wetting and adhesive properties, leading to completely new abilities for the organism. Some of the most studied examples are the ability of Indian lotus leaves to repel water and the ability of geckos to climb walls; both abilities are due to the micro- and nanostructure of the respective surface. Thus, naturally occurring micro- and nanostructures have been a great source of inspiration on how to incorporate novel functions into different devices. Bioinspired concepts have seen applications in flexible electronics, robotics, plasmonic devices, microfluidics, biomedical engineering and water harvesting, among others. This Special Issue focused on innovative and methodological advancements in the design and fabrication of functional devices at micro- and nanoscale that take inspiration from the unique architectures and materials from nature.

Guest Editors

Dr. Vipul Sharma

Faculty of Medicine and Health Technology, Tampere University, FI-33014 Tampere, Finland

Prof. Dr. Veikko Sariola

Faculty of Medicine and Health Technology, Tampere University, FI-33014 Tampere, Finland

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Micromachines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

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