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Scanning Probe Spectroscopy: From Radio- to Terahertz Frequencies

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Deadline for manuscript submissions:
closed (1 May 2019)

Message from the Guest Editors

With the increasing importance of nanosciences in daily life and technology, there is a strong demand for new investigation tools that have the precision needed for studying and controlling the quantum physical and chemical properties of nanoscale objects.

The energy-resolution limit of the established scanning probe spectroscopy techniques—presently ≈0.1 meV—remains among the biggest challenges. Recent spectroscopic resonance experiments utilize either high-frequency AC voltages or THz-laser irradiation. The respective resonance energies range between about 40 neV and a few meV. These novel approaches have revolutionized the field of scanning probe spectroscopy by improving the energy resolution up to 10^4 times and the sensitivity down to the detection-limit of single spins.

This Special Issue of *Nanomaterials* attempts to cover the most recent advances in the field of scanning probe spectroscopy operating at resonance frequencies of MHz to THz. Submissions of regular as well as review articles are appreciated.

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call "nanomaterials". These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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