

Special Issue

Multifunctional Noncentrosymmetric Oxide Nanocrystals: Synthesis, Properties and Applications

Message from the Guest Editors

Non-centrosymmetric oxide (NCO) nanocrystals are known as multifunctional nanomaterials because of their structure-induced properties that may include ferroelectricity, pyroelectricity, piezoelectricity and second harmonic generation. An increasing research interest is thus dedicated to representative hosts. However, contrary to centrosymmetric nanomaterials such as metals, simple binary metal oxides like Fe_3O_4 and semiconductor quantum dots, exact derivation of the reaction pathways and crystallization mechanisms still needs a special attention for improving the resulting performances of NCO nanocrystals. Regarding their extremely rich non-linear optical properties, long-term photo-stability, excitation-wavelength tunability and the absence of phase-matching conditions have paved the way to new proof-of-concepts in the nanomedicine field. This special issue of *Nanomaterials* will highlight different aspects of NCOs spanning from their chemical preparation to their specific physicochemical properties and to their potential to new applications.

Guest Editors

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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