

Special Issue

Multifunctional Hybrid Nanoparticles for Photodynamic Therapy and Diagnosis

Message from the Guest Editor

Photodynamic therapy (PDT) has evolved over the last century and has become a widely used medical tool having gained regulatory approval for the treatment of various diseases, such as cancer and macular degeneration. PDT is based on the activation of photosensitizers (PSs), which results in energy transfer cascades that ultimately yield cytotoxic reactive oxygen species that can render cell death. Hybrid nanoparticles designed with both inorganic and organic components have attracted significant attention in recent decades because they not only retain the beneficial features of both components but also gain additional synergistic performance. Hybrid nanomaterials containing gold, silver, silica, quantum dots, silicon, upconversion, or carbon-based nanoparticles as the core component can be modified in a modular fashion to render specific properties for the resultant nanoparticles such as target specificity or biodegradability that improve the outcome of PDT. This Special Issue will gather recent developments in the synthesis, characterization, and application of hybrid nanoparticles for photodynamic therapy and diagnosis.

Guest Editor

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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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