



Nanotechnology Applied in Modern Photodynamic Therapy

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Message from the Guest Editors

Photodynamic therapy (PDT) is considered a minimally invasive procedure and a complementary treatment that is able to destroy nearby cells, viruses, or bacteria. Some of the limitations of PDT with regard to its biomedical use are related to its poor aqueous solubility, its lack of selectivity for the areas of interest and the cytotoxicity of the photosensitizers. In this context, one strategy is the use of nanoparticles (NPs) as carriers for photosensitizers. Nowadays, there is a great variety of nanoparticles that have a high potential to be applied in biomedicine, such as metallic (gold, iron, or QDs) and non-metallic NP (micelles, liposomes, micelles, polymeric, carbon or silica-based) nanosystems.

The use of these NPs as transports enhances the applicability of the PDT, allowing the functionalization of the nanoplatform with other molecules of interest, such as biotargets or hydrophilic molecules. Furthermore, different therapies (chemodrug, photothermal) or detection strategies (fluorescence bioimaging) could be implemented in the nanosystems together with PDT, in order to obtain promising hybrid nanoparticles that can be utilized against different diseases and infections.





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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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