Special Issue

Nanomaterials for Photothermal Therapy and Antibacterial Applications

Message from the Guest Editor

Cancer and bacterial infectious disease have attracted considerable public attention due to their great threat to human health. In recent years, photothermal therapy (PTT) has been the object of growing interest, has undergone technological advances, and has been recognized as a non-invasive method to kill cancer cells and pathogenic bacteria. PTT requires the use of nanomaterials (e.g., gold nanoparticles, carbon nanomaterials, iron oxide nanoparticles, etc.) that exhibit high absorption in the near-infrared (NIR) region of the electromagnetic spectrum. The benefits of using nanomaterials is that the NIR light can be absorbed and rapidly converted into heat, thus increasing the surrounding temperature of the irradiated organisms. This Special Issue aims to cover different strategies against cancer and bacteria, improving the effect of phototherapy. We are particularly interested in the design of nanomaterials, and in the effects of their physico-chemical properties on their photothermal therapeutic efficiency in treating cancers and bacterial infections. Welcome your contribution!

Guest Editor

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Deadline for manuscript submissions

closed (20 May 2022)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 10.3
Indexed in PubMed

mdpi.com/si/57286

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mdpi.com/journal/nanomaterials

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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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