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Editorial

Nanobiomaterials Revolutionizing Biomedical Science: Special Issue—"Nanotechnology for Biomedical Applications"

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The field of nanotechnology applied to biomedicine has witnessed unprecedented growth in recent years owing to the development of new nanobiomaterials and the exploration of novel strategies for tackling medical problems at the nanoscale. This Special Issue consolidates cutting-edge research in the field, showcasing innovative solutions.

The pace of progress in this field is accelerating as researchers leverage post-market experience and clinical practice to overcome new obstacles and develop more advanced nanobiomaterials. The nine papers and reviews in this Special Issue exemplify the diversity of the approaches being employed, ranging from the use of multifunctional polymers [1] to smart and stimuli-responsive nanosystems [2] and hybrid nanoconstructs [3]. In each case, rational design strategies [4] and careful characterization are critical to success.

The articles included in this Special Issue offer a wealth of insight into the latest developments in nanobiomaterials. They cover a wide range of topics, stretching from the use of entomopathogenic fungi biomass for the extracellular biosynthesis of silver nanoparticles [5] to depth dose enhancement in nanoparticle-enhanced radiotherapy [6]. The surface functionalization of PLGA nanoparticles is explored as a means of increasing transport across the blood–brain barrier in Alzheimer's disease [7], while erythrocytes as particulates are shown to be promising new therapeutic systems [8].

Excitingly, this Special Issue also highlights the role of nano-medicinal interventions in clinical trials for the treatment of metastatic breast cancer [9]. The potential impact of nanobiomaterials in this area cannot be overstated, and the papers included in this Special Issue offer a tantalizing glimpse into the future of cancer therapy.

Overall, the papers in this Special Issue illustrate the enormous potential of nanobiomaterials in revolutionizing biomedical science. As researchers continue to push the boundaries of what is possible, we can expect to see even more exciting developments in the years to come.

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