Editorial

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Dear readers!

We present for your attention the second thematic collection dedicated to nanomaterials for medicine and pharmaceuticals, namely, nanocomposites.

The development of modern high-tech personalized medicine is impossible without the development of new functional materials with special properties, among which polymer and hybrid nanocomposites occupy a special place. Synthetic and natural biocompatible and biodegradable polymers, including those with shape memory, find application in medicine for surgical suture materials, the manufacture of orthopedic products (screws, pins, rods), endovascular implants, and tissue and tissue matrices for reconstructive, implantation, restorative, and cosmetic medicine.

Pharmaceuticals are actively developing towards the creation of targeted drugs. The development of selectively acting forms of dosage requires the creation of smart delivery systems based on carriers that would first find target cells and enter them, then locally release their active substances. Biocompatible and biodegradable polymer nanoparticles can be effectively used as such carriers. An important direction of scientific advancements is the creation of new effective diagnostic agents, biotest systems, and systems for enzyme-linked immunosorbent assay.

This issue of *Nanobiotechnology Reports* presents both review articles that analyze modern trends in the use of nanomaterials in medicine, as well as original studies on this topic, including those by employees of the Kurchatov complex NBICS naturelike technologies. The issue presents an up-to-date overview of the efficiency of viral aerosol filtration by personal protective respiratory equipment, which is an acute problem in the global SARS-CoV-2 pandemic.

We would like to note that the creation of polymer and composite materials with adjustable physical and mechanical properties, including stimulus-sensitive, with controlled biodegradation kinetics, filled with bioactive compounds, with various molecular and supramolecular structures and morphology, is an urgent task in modern science, without which it is impossible to develop new-generation biomedical products, medicines, and diagnostic agents.

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