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Technological Applications of Nano-Hybrid Composites

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Chapter 1
A Futuristic Approach on the Multifunctionality of Nanomaterials: Relevance of Nanoparticles

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ABSTRACT

The realm of analytical chemistry has been invigorated by the advent of multifunctional nanoparticles. Nanomaterials, with their distinct properties stemming from quantum effects and high surface-to-volume ratios, are poised to reshape industries ranging from electronics to medicine and environmental sustainability as they deliver unprecedented performance by integrating semiconducting, plasmonic, and piezoelectronic properties. Furthermore, multifunctional nano species play a pivotal role in personalized medicine and targeted therapies. Magnetic nanoparticles respond to magnetic fields and are employed in hyperthermia therapy and targeted drug

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