

Challenges of Nanotechnology, Nanoscience, Nanobiosensors and Internet of Nano Things with its Applications.

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Abstract: *This paper represents comprehensive study on the challenges of nanotechnology, nanoscience, Nano biosensors and internet of nano things with its applications. Nanotechnology, nanoscience, nano biosensors and the Internet of Nano Things (IoNT) are groundbreaking fields that promise transformative applications in healthcare, energy, environment and industry. Despite their potential, these technologies face significant challenges. Nanotechnology and nanoscience grapple with issues like scalability, cost, toxicity and the lack of standardized regulations. Nano biosensors, which are pivotal in diagnostics and environmental monitoring, encounter hurdles such as stability, reproducibility and integration into existing systems. IoNT, a convergence of nanotechnology and IoT, faces complexities in energy efficiency, secure communication, data management, and interoperability. Addressing these challenges requires interdisciplinary collaboration, ethical governance, and technological innovation to unlock their full potential and enable solutions to global challenges while ensuring sustainability and societal acceptance.*

Keywords: Challenges, Internet of Nano Things (IoNT), Nanobiosensors, Nanoscience and Nanotechnology