

Use of Integrated Knowledge Networks to Increase Innovation in Nanotechnology Research and Development

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Abstract : Innovation, particularly in technology development, is a crucial aspect of nanotechnology R&D and, although several approaches to effective innovation management exist, organizational structures that promote knowledge exchange have been found to be most effect in supporting new and emerging technologies. This paper discusses Integrated Knowledge Networks (IKNs) and evaluates its use within nanotechnology R&D to increase technology innovation. Specifically, this paper reviews the role of IKNs in bolstering national and international nanotechnology development and in enhancing nanotechnology innovation. Both physical and virtual IKNs, particularly IT-based network platforms for community-based innovation, offer strategies for enhanced technology innovation, interdisciplinary cooperation, and enterprise development. Effectively creating and managing technology R&D networks can facilitate successful knowledge exchange, enhanced innovation, commercialization, and technology transfer. As such, IKNs are crucial to technology development processes and, thus, in increasing the quality and access to new, innovative nanoscience and technologies worldwide.

Keywords : community-based innovation, integrated knowledge networks, nanotechnology, technology innovation

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