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Nano-Scenario in Energy Sector: Present and Future Perspectives

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Energy is the soul driver of lives around the globe. But unfortunately, energy problem is figuring at first position among the top ten prioritized problems of the world. Demand for energy is increasing at an alarming rate with exponential rise in human populace. Nanotechnology has the signature of promising technology that exhibits the unique potential for decisive technological breakthroughs in the energy sector. Nanotechnology is the versatile platform that has impacted every field of energy sector and can provide innovative solutions to the global challenges facing mankind. The technical utilisation of nano-based structures and materials in energy conservation, energy distribution, energy storage and energy utilisation had brought a major breakthrough in the dynamics of energy sector. Compared with other approaches in meeting energy demands, nanotechnological approach is at the forefront which has the potential of reducing energy footprint and thus making substantial contributions to sustainable energy supply. In this chapter, we discuss the prominent role of nanotechnology in different fields of energy sector and how this technological approach can contribute to cost reduction in renewable energies to increase efficiency in generation and consumption

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