

Green Nanomaterials in Energy Conversion and Storage Applications



Ishani Chakrabartty
Khalid Rehman Hakeem
Editors

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Edited by

Ishani Chakrabartty, PhD

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CHAPTER 2

Green Nanomaterials: Importance and Applications

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ABSTRACT

Nanomaterials (in nanoscale range), in the contemporary world, have acted as a magic wand for miniaturization of process hardware and development of functionally enhanced and engineered materials. However, both the source and method of production of nanomaterials involve synthetic approach which tends to increase the human health and environmental risk. Green nanotechnology (principally relying on the concepts of green chemistry), which involves the use of green nanoproducts or the use of nanoproducts in enhancing the environmental stability, has been a promising concept for reducing negative externalities of synthetic nanomaterials. Green nanomaterials include the nanomaterials which are synthesized either using environmental-friendly technologies (microwave or ultrasound) or from a natural sustainable raw material (biowastes, etc). These nanomaterials are advantageous from the conventional ones in terms of biocompatibility, biodegradability, renewability, lower toxicity, cost, reduced effluents,

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