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Research in Sustainable Synthesis of Nanomaterials: An overview

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The basis of nanotechnology is the manufacture, characterization and use of new nanomaterials with properties that replace, improve, or create useful products. However, in order to be sustainable, these new materials must be made in sustainable ways—without generating the old pollutants, without using more energy, and without causing environmental impacts at any of their life stages.

Research into the sustainable synthesis of nanomaterials is a beginning step into making the whole enterprise sustainable. Less polluting means of synthesis such as using non-toxic solvents (e.g., supercritical CO₂, water), self-assembly, microwave technologies, photochemical syntheses, renewable starting materials, molten salts/ionic liquids, etc. are several ways in which nanomaterials can be made in a more sustainable manner. This talk will track and discuss research in sustainable synthesis of nanomaterials and barriers to its use.

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