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Combustion Process Using Plant-Based Fuels for the Synthesis of Metal- Oxide Nanostructures(Review)

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Abstract

Metal oxide nanostructures receive great interest due to their unique size and shape dependent physicochemical and functional properties. With the rapid growth of metal oxide nanotechnology, their chemical synthesis processes have become the most promising one due to their simplicity and versatility. Among the various available chemical processes such as sol-gel, hydrothermal, polyol and precipitation, the combustion process receives significant attention. In particular, the combustion process has been extensively explored for the synthesis of various nanostructured materials including metal oxides, which involves in the exothermic reaction upon thermal heating of precursor chemicals. Recently, the combustion process has been reinvented by using the various renewable resource-based organic fuels, which receives increasing interest among global researchers. A wide range of plant/ leaf, fruit, flower, seed, peel, latex and tuber extracts along with the plant-derived products have been explored in combustion process for the synthesis of various metal oxides. Hence, the present review is aimed to focus the recent advances in the combustion process by using renewable fuels for the synthesis of metal oxide nanostructures and also the emerging opportunities. © 2019 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Author keywords

[Bio-fuel](#) [Combustion Process](#) [Metal Oxides](#) [Nanoparticles](#) [Powders](#)

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