

Submission Summary

Conference Name

International Conference on Nanoscience and Nanotechnology

Paper ID

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Paper Title

Carbon Dots for Drug Delivery and Diagnostic Applications

Abstract

Carbon dots are carbon nanomaterials with particle size lower than 10 nm. They are recently being used widely for diverse applications including novel drug delivery in cancer, ocular diseases, infectious diseases, brain disorders and wound healing. They possess the advantages of biocompatibility, eco-friendly, ease of synthesis, chemical inertness and low toxicity which decipher their potential as excellent nanocarrier system for therapeutic and diagnostic purposes. Carbon Dots synthesized using green chemistry are economical and possess improved physicochemical properties and are safer than their synthetic counterparts. Methods of green synthesis of carbon dots include ultrasonication, chemical oxidation, carbonization, solvothermal and hydrothermal processes, and microwave irradiation using various plant-based organic resources. The carbon dots synthesized this way have great biomedical applications such as in bioimaging, biosensing and nanomedicine, which are attributed due to their unique properties, such as luminescence effect, strong stability and good biocompatibility. In addition to the plant resources, fruits, vegetables and organic wastes are used for the plant-mediated green synthesis of Carbon Dots using ultrasonication, chemical oxidation, carbonization, hydrothermal, solvothermal, and microwave irradiation approaches.

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