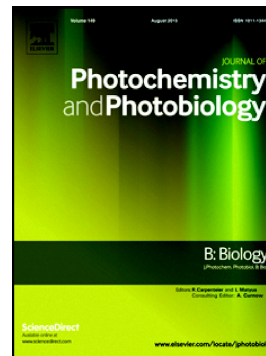


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Facile Biological synthetic strategy to morphologically aligned CeO₂/ZrO₂ core nanoparticles using *Justicia adhatoda* extract and Ionic liquid: Enhancement of its bio-medical properties

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ABSTRACT

In this study, a typical green synthesis route has approached for CeO₂/ZrO₂ core metal oxide nanoparticles using ionic liquid mediated *Justicia adhatoda* extract. This synthesis method is carried out at simple room temperature condition to obtain the core metal oxide nanoparticles. XRD, SEM and TEM studies employed to study the crystalline and surface morphological properties under nucleation, growth, and aggregation processes. CeO₂/ZrO₂ core metal oxides display agglomerated nano stick-like structure with 20-45 nm size. GC-MS spectroscopy confirms the presence of vasicinone and N, N-Dimethylglycine present in the plant extract, which are capable of converting the corresponding metal ion precursor to CeO₂/ZrO₂ core metal oxide nanoparticles. In FTIR, the corresponding stretching for Ce-O and Zr-O bands indicated at

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