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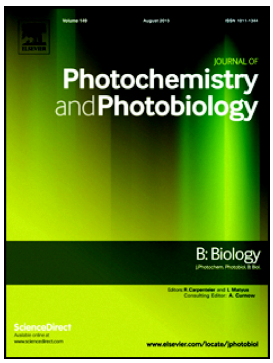

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Pandiyan Nithya, Murugesan Balaji, Sonamuthu Jegatheeswaran, Samayanan Selvam, Mahalingam Sundrarajan

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Facile Biological synthetic strategy to morphologically aligned CeO_2/ZrO_2 core nanoparticles using *Justicia adhatoda* extract and Ionic liquid: Enhancement of its bio-medical properties

Pandiyan Nithya[a], Murugesan Balaji[a], Sonamuthu Jegatheeswaran[a], Samayanan Selvam[b] and Mahalingam Sundrarajan[a]*

[a]*Advanced Green Chemistry Lab, Department of Industrial Chemistry, School of Chemical Sciences, Alagappa University, Karaikudi - 630 003, Tamil Nadu, India.*

[b]*Laser and Sensor Application Laboratory, Engineering Building, Pusan National University, Busan - 609735, South Korea.*

**Corresponding author: Tel: + 91 94444 96151*

E-mail: drmsgreenchemistrylab@gmail.com

ABSTRACT

In this study, a typical green synthesis route has approached for CeO_2/ZrO_2 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. CeO_2/ZrO_2 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 CeO_2/ZrO_2 core metal oxide nanoparticles. In FTIR, the corresponding stretching for Ce-O and Zr-O bands indicated at