**Microwave assisted synthesis and characterization of nanocomposites N-doped carbon dots with silver nanoparticles: Catalytic reduction of Methylene Blue, Congo Red and 4-Nitrophenol**

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**Abstract**

The present work highlights the microwave assisted synthesis of nitrogen doped carbon dots silver nanoparticles (AgNPs/N-CDs) nanocomposites using *Lantana camara* berries as raw material. In the above synthesis of nanocomposites no additional reducing agent is necessary as N-CDs act as both reducing and stabilizing agent. The chemical and physical properties of AgNPs/N-CDs nanocomposites were analyzed using different analytical techniques such as UV-Vis, FTIR, XRD, DLS and TEM. The obtained results shows that the synthesized nanoparticles were observed Surface Plasmon Resonance (SPR) at 420 nm in the UV-Visible spectrum indicating the formation of AgNPs/N-CDs and the TEM image revealed that the AgNPs/N-CDs were monodispersed, spherical in shape with an average size of 8±2 nm. Zeta potential value of AgNPs/N-CDs is found to be -16.1 mV indicating the stability of the synthesized nanocomposites. The AgNPs/N-CDs nanocomposites were used as a catalyst in the reduction of Methylene Blue, Congo Red and 4-Nitrophenol at room temperature which is monitored by UV-Vis spectrophotometer. AgNPs/N-CDs nanocomposites showed excellent catalytic activity in the reduction of these organic dyes.