**Abstract**

 A simple, rapid and cost-effective approach is developed to synthesize fluorescent carbon dots (CDs) using the leaves of Moringa Oleifera as a carbon source for the first time by Hydrothermal treatment. Moringa Oleifera leaves are rich in iron, protein, magnesium, riboflavin, vitamins such as A, B6, and C. The chemical composition and morphological feature of the prepared CDs are characterized by using various spectroscopic methods such as UV-Visible Spectroscopy (UV-Vis), Fourier transform infrared spectroscopy (FT-IR), X-ray diffraction (XRD), Field emission scanning electron microscopy (FESEM) andEnergy Dispersive X-ray (EDX). The observed peak in XRD pattern corresponds to (002) plane. FT-IR spectroscopy analysis confirms the presence of functional groups with respective binding energies (hydroxyl and carboxyl groups) on the surface of CDs. The prepared CDs are amorphous in nature. These CDs have received special attention due to their distinct characteristics that are advantageous for optical sensing of metal ions and bioimaging applications.