Multicolor emitting N-doped carbon dots derived from ascorbic acid and phenylenediamine by hydrothermal method

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The three multicolor emission N-doped carbon dots were fabricated using the hydrothermal process with ascorbic acid and m-phenylenediamine, o-phenylenediamine, p-phenylenediamine as novel precursors. The obtained three multicolor emission N-CDs were dispersed in water and green, blue and orange fluorescent color were visually observed under UV lamp. In particular, the Am-CDs were exhibited the green fluorescence with quantum yields of 25.60% in water and 44.23% in ethanol by using rhodamine 101 (QY = 100% in ethanol) as a reference. As well, the Am-CDs also exhibited excellent fluorescence intensity in the strong acidic conditions.