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# Facile and versatile preparation of full-color emissive Fe-doped ZnCdSe/ZnS core/shell quantum dots by a novel aqueous-based colloidal approach

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## Abstract

A novel/general method, based on a combination of co-nucleation and growth doping strategies in aqueous media is suggested to synthesize tunable-luminescent Fe-doped ZnCdSe/ZnS core/shell quantum dots (QDs). The effective doping of Fe impurity and enhancing the emission intensity along with localization of Cd<sup>2+</sup> ions within the core lattice structure are all the advantages for utilizing a larger bandgap ZnS shell. The emission tunability of the doped QDs (d-dots) over the visible range was also achieved by controlling the Zn: Cd feeding ratio in ZnCdSe host matrix,

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