

9 Future work

Analytical applications involving the use of the synthesized ligand modified quantum dots as sensing probes in aqueous dispersions were proposed and their performance evaluated. However, due to the original orientation of the work and lack of time, it was not possible to exhaust all of the possibilities of these methods and the procedures involved. Therefore, a few points still have to be addressed such as:

- The interactions of analytes and quantum dots and the resulting quenching or enhancement in photoluminescence emission intensity still need to investigate in more details.
- There is still room for improvements in proposed methods especially in terms of fully exploring them in the analysis of real samples.
- Separation and detection of aminoglycosides residues in food samples by capillary electrophoresis with quantum dots indirect laser-induced fluorescence.
- Use of core-shell quantum dots like CdSe/ZnS modified with TGA, 2MPA and cysteine in order to evaluate improvements in the quality of the photoluminescence measured and compare with the approaches proposed in this work.
- Synthesis of core-shell quantum dots like CdSe/ZnS capped with molecularly imprinted polymer for selective detection of analytes of interest in diverse matrices.

- Synthesis and characterization of carbon dots and evaluate their analytical potential for the determination of histamine, thyroxine, captopril and aminoglycosides.