

## CdTe quantum dots based chemical nanosensors

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Quantum dots (QDs) are semiconductor alloy crystal with dimensions on the order of nanometers that show remarkable fluorescent properties with a relatively narrow emission spectrum and high photostability [1-3]. CdTe QDs are composed of atoms of cadmium and tellurium and have interesting physical and chemical properties that can be successfully used as chemical sensors if they are stabilized and functionalized with selected chemical substances [1-4]. The synthesis of QDs in aqueous media has improved its solubility in water and decreasing the toxicity. Soluble fluorescent nanomaterials are highly promising nanosensors that can be used for chemical and/or biochemical analysis and in vivo bioimaging [1-6].

The stabilization of QDs is usually done with a bifunctional organic molecule, S-R, in which one group is a thiol or mercapto, which binds to the semiconductor, and other functional group confers water solubility. These QDs can be made even more stable by passivation for depositing another semiconductor with a bigger band-gap energy, such as ZnS.

This communication presents CdTe QDs synthesized in water using mercaptoacetic acid as stabilizing agent with and without passivation with ZnS. Besides the morphological characteristics of the nanomaterials and their photophysical properties their utilization as pH nanosensors will be discussed.

**Acknowledgements:** Financial support from Fundação para a Ciência e Tecnologia (Lisboa, Portugal) (FSE-FEDER) (Project PTDC/QUI/71001/2006) and (Project PTDC/QUI/71336/2006) is acknowledged.

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