CZ.1.07/2.3.00/20.0148 NANOLABSYS
Mezinárodní spolupráce v oblasti „*in vivo*“ zobrazovacích technik
Laboratoř Metalomiky a Nanotechnologií

Vás zve na seminář:

Influence of the pH on the stability of CdTe QDs investigated by fluoresence and particle size analyses

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Abstract

The stability of QDs employed for several biological purposes, similarly as the majority of colloid solutions is prone of various physical-chemical parameters. One of these parameters which mostly controls the particle dissolution as well as associations/aglomerations and consequtive suspensions or sedimentation is the concentration of H^+ or as randomly defined, the pH value of the acqueous solution. In this study, an initial solution of CdTe QDs is introduced at 10 citric acid/K_2HPO_4 buffer solutions with respective pH values ranging between 3 and 8, and the overal proces is monitored by programmed fluorescence- and particle size analyses. There is a evidence of a full agreement of both employed metods explains the charcteristic behaviour of the QDs. Fast aglomerations and increasing of particle size are typical for pH < 4 evidenced by maxima shiftings in fluorescence spectra and particle size analyses. The pH increase around neutral values contributes to the QDs stability.

This study is intended to be disseminated as a short presentation of 10-15 min, followed by a lecture of colloid and surface chemistry of approx. 90 min, covering the most important aspects of this discipline, such as, definitions, thermodynamical and electrochemical aspects as preconditions of heterogeneous system stability.

SEM/2209

pátek 12. 12. 2014, od 12:00 h

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evropský sociální fond v ČR
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MINISTERSTVO ŠKOLSTVÍ, MLÁDEŽE A TĚLOVÝCHOVY
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