DSpace@IISERMohali (/jspui/)
/ **Publications of IISER Mohali (/jspui/handle/123456789/4)**
/ **Research Articles (/jspui/handle/123456789/9)**

Please use this identifier to cite or link to this item: http://hdl.handle.net/123456789/2448

Title:	Spectroscopic profile of surfactant functionalized CdSe quantum dots and their interaction with globular plasma protein BSA
Authors:	Sanwlani, S. (/jspui/browse?type=author&value=Sanwlani%2C+S.)
Keywords:	CdSe quantum dots Quantum dot-protein binding Surface functionalization
Issue Date:	2016
Publisher:	Elsevier
Citation:	Colloids and Surfaces A: Physicochemical and Engineering Aspects, 506, pp. 495-506.
Abstract:	Herein, we report on the differential structural and optical properties of CdSe quantum dots (QDs) (size group 2.5 and 3.5 nm) which were synthesized with four different surfactant coatings using hot-injection method. The surface functionalization led to change in the morphology of agglomerated QDs that generated structures such as tetrapods, clusters and networks. Steady state fluorescence showed capping dependent changes in the quantum yield. In particular, QDs formed with TX-100 (Triton X-100) coating, revealed highest quantum yield, compared to QDs synthesized with oleic acid (OA), and three other surfactants (CTAB, DTAB and SDS). These functionalized QDs were interacted with model plasma protein BSA which revealed the protein-QD binding order: BSA-QD1 (2.5 nm) < BSA-QD2 (3.5 nm). Maximum binding occurred with DTAB coated QDs. Such interaction led to considerable loss in the secondary structure of BSA. The surface ligands could control the passivation of surface states and non-radiative energy loss pathways.
Description:	Only IISERM authors are available in the record.
URI:	https://www.sciencedirect.com/science/article/pii/S0927775716305428 (https://www.sciencedirect.com/science/article/pii/S0927775716305428) http://hdl.handle.net/123456789/2448 (http://hdl.handle.net/123456789/2448)
Appears in Collections:	Research Articles (/jspui/handle/123456789/9)

Files in This Item:

File	Description	Size	Format	
Need to add pdf.odt (/jspui/bitstream/123456789/2448/1/Need%20to%20add%20pdf.odt)		8.63 kB	OpenDocument Text	View/Open (/jspui/bitstream/12345(

Show full item record (/jspui/handle/123456789/2448?mode=full)

📊 (/jspui/handle/123456789/2448/statistics)