

INFLUENCE OF CdTe NANOPARTICLES  
ON THE FORMATION OF J-AGGREGATES  
OF THIAMONOMETHINECYANINE DYES

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S u m m a r y

Conditions of J-aggregate formation have been studied for three types of thiamonomethinecyanine dyes, the structures of which differ from one another by their end groups, and the dependences of those conditions on the dye concentration and the type of dye interaction with CdTe nanoparticles with a diameter of 3 nm in aqueous dispersions have been analyzed. The dye structure is found to influence the efficiency of the J-aggregate formation in solutions and films. It is also found that CdTe quantum dots (QDs) stabilized by thioglycolic acid can adsorb J-aggregates of dye molecules on their surface. It is shown for the first time that the hybrid structure dye–CdTe can emerge owing to the interaction between the negatively charged dye molecules and the negatively charged surface of QDs forming neutral aggregates. No process of energy transfer from the dye to a CdTe particle was detected in the dimer–CdTe and J-aggregate–CdTe systems.