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Optical properties of CdTe and CdSe nanocrystals GUY ALLAN, CHRISTOPHE DELERUE, IEMN - Dept ISEN — The electronic structure of CdTe and CdSe nanocrystals has been calculated as a function of size using the tight-binding approximation with an sp3d5s* basis including spin-orbit coupling and taking into account d core atomic functions on the cation atoms. Two particle electron-hole interaction is also incorporated in the calculation of the photoemission decay rate. For CdSe, we compare the results for the two zinc blende and wurtzite atomic structures. Comparison is made with recent experimental results.

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