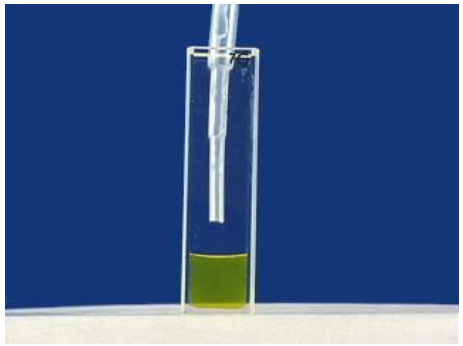
INTEGRIRANI KEMIJSKI SUSTAVI

Synthesis of CdS Nanoparticles*
VIRTUAL LAB

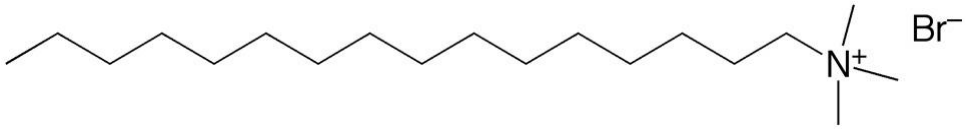


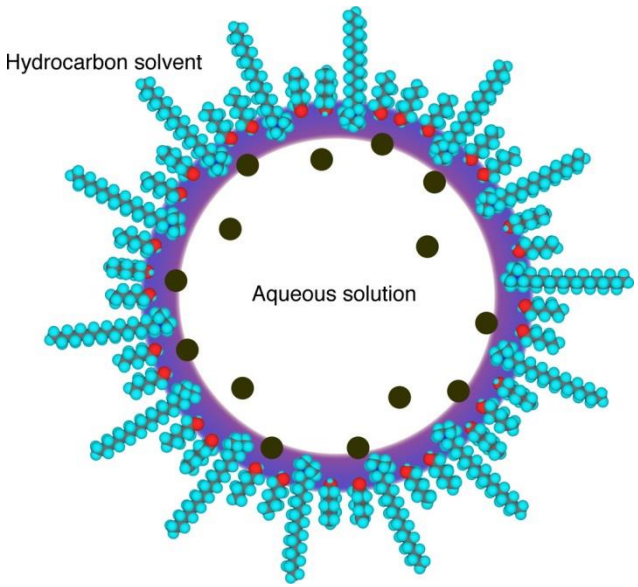
Synthesis of CdS Nanoparticles

Preparation of CdS Nanoparticles/Journal of Chemical Education

*Based upon material developed by the Materials Research Science and Engineering Center on Structured Interfaces at the University of Wisconsin-Madison with funding from the National Science Foundation under award number DMR-1720415.
Any opinions, findings, and conclusions or recommendations expressed in this report are those of the authors and do not necessarily reflect the views of the Foundation.

1. SINTEZA NANOČESTICA U MIKROEMULZIJI





Synthesis and characterisation of CdS nanoparticles

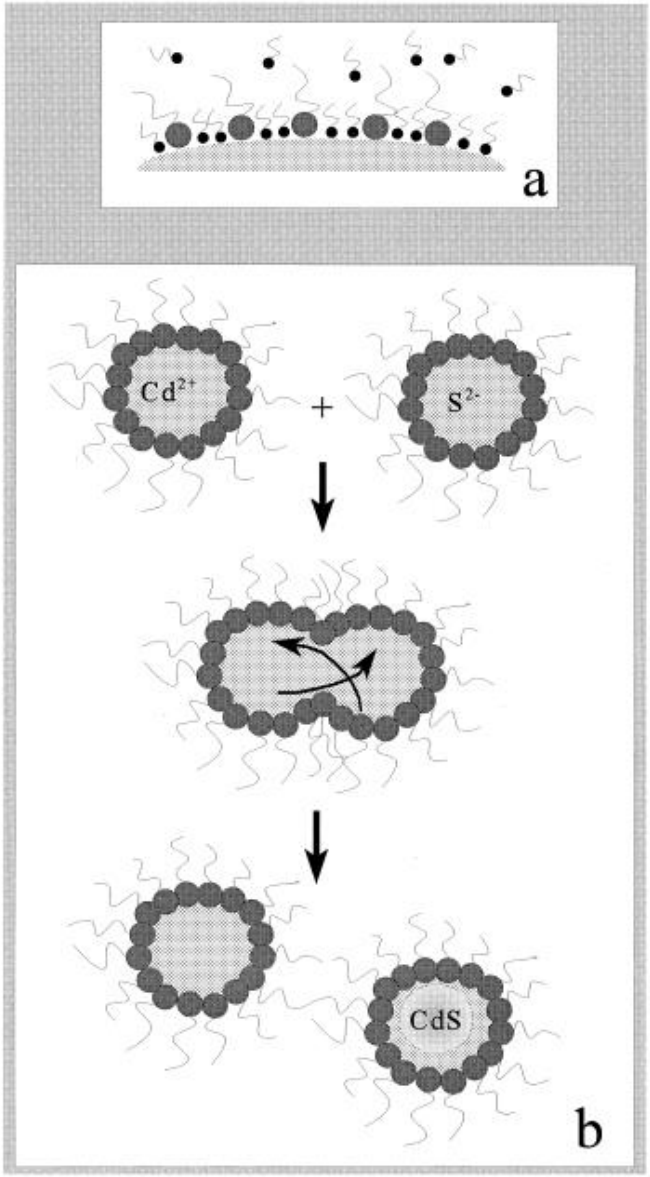
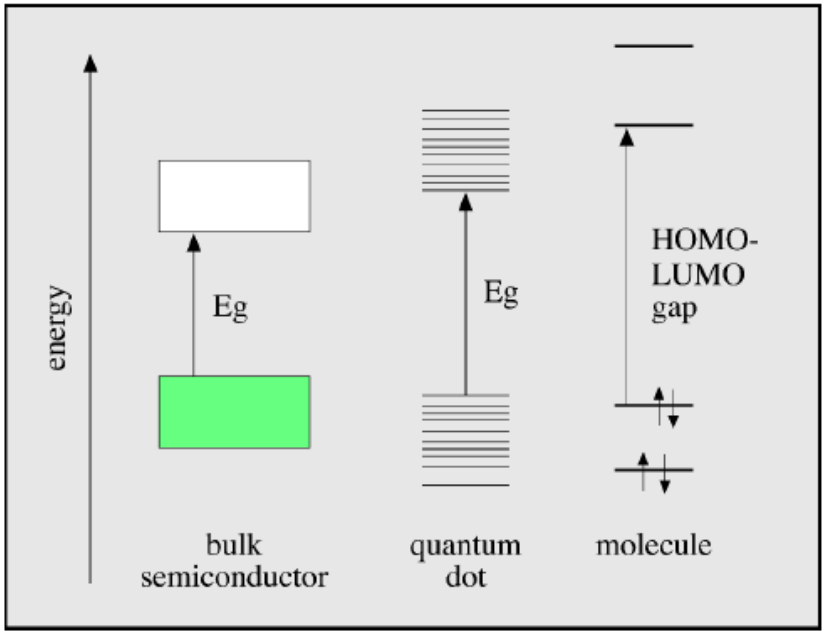


Fig. 1. (a) Pictorial representation of the synthesis of quantum-sized CdS in reverse micelles; and (b) detail of "water-in-oil" reverse micelle formed by CTAB as surfactant and *n*-pentanol, as cosurfactant.

2. VELIČINA NANOČESTICE I ENERGIJSKI NIVOI ELEKTRONA

Quantum dots: A Primer pročitati uvod!



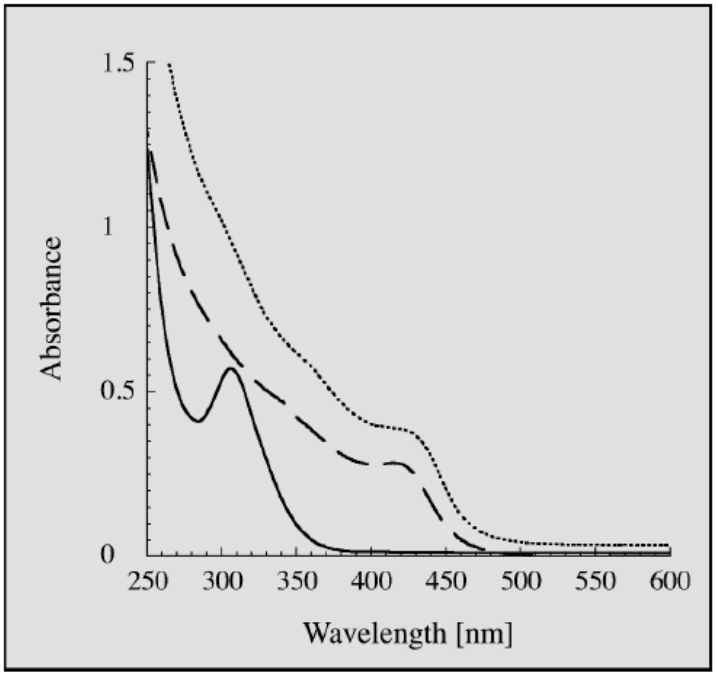
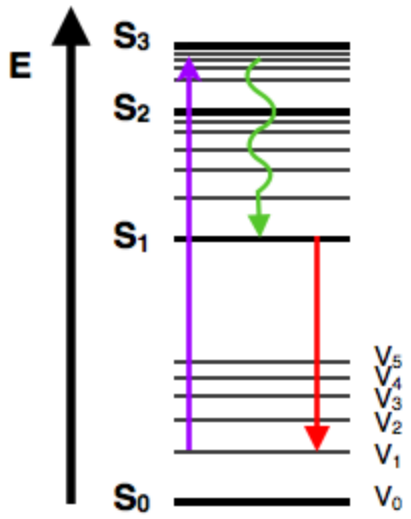
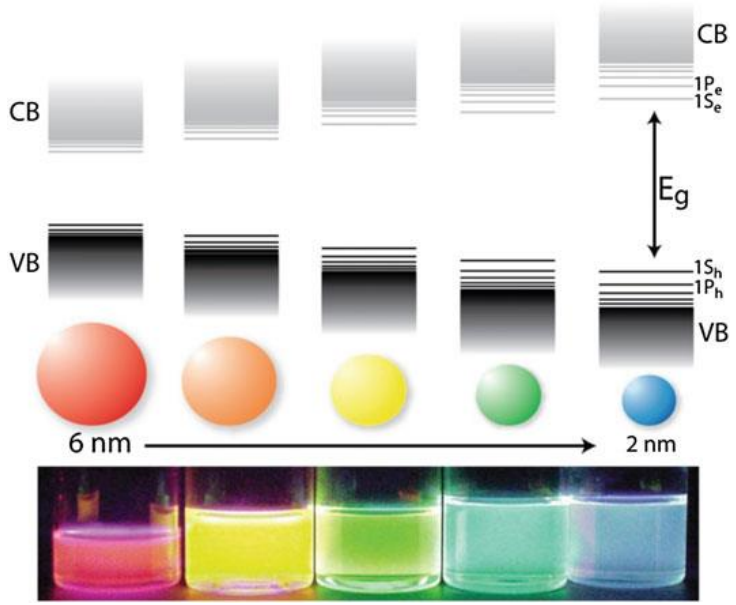
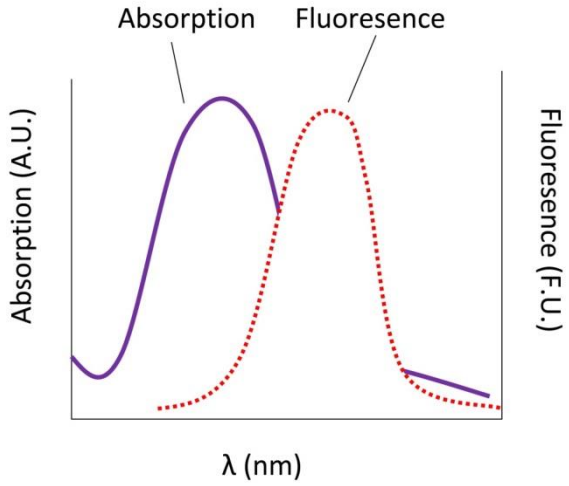


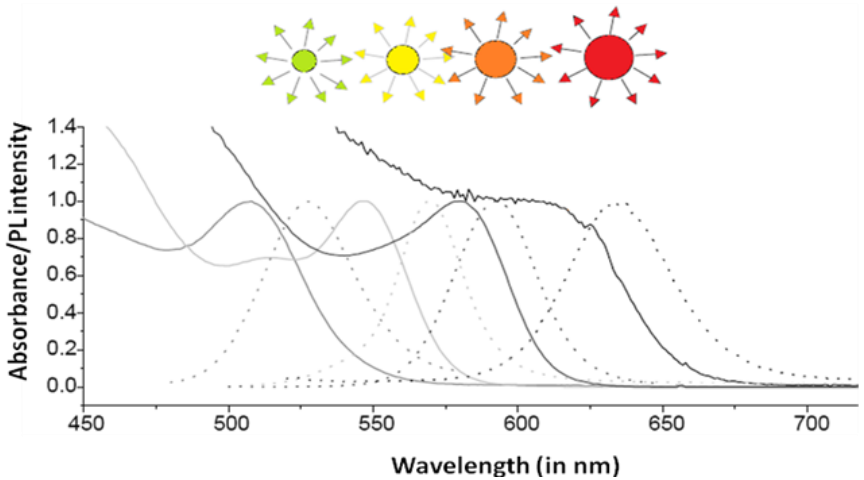
FIG. 5. *Ultraviolet-visible absorption spectra of CdS quantum dots of different diameters in aqueous solution; 20 Å (solid line), 40 Å (dashed line), and 125 Å (dotted line).*

3. Pobuda elektrona – relaksacijski mehanizmi u molekulama (Jablonski dijagram) i nanočesticama



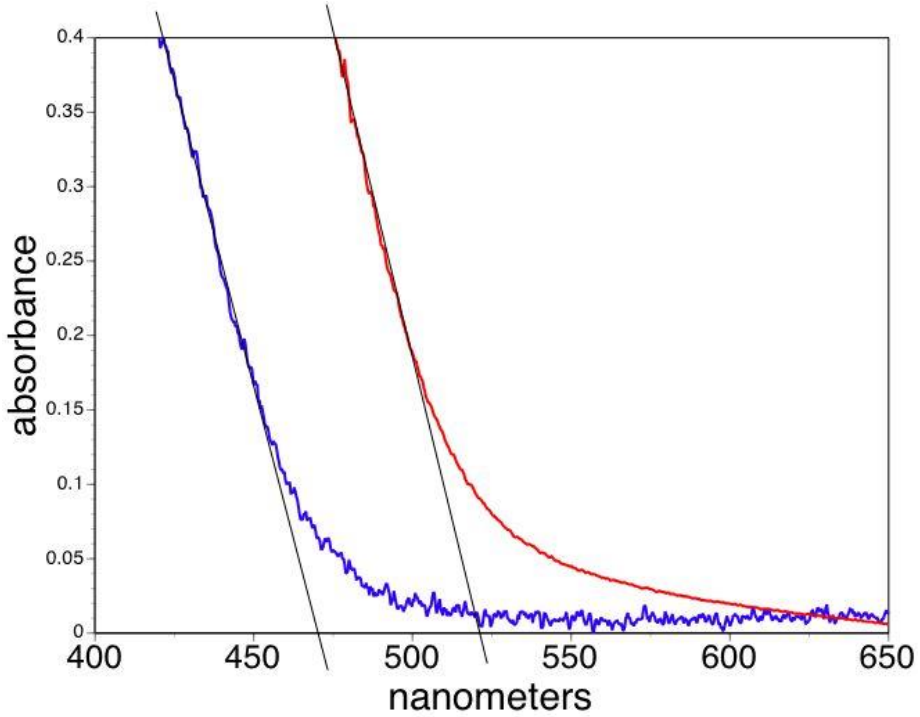






4. IZRAČUN VELIČINE NANOČESTICA (model efektivne mase i empirijski TEM model

Effective mass model



$$E_g^{nano} = E_g^{bulk} + \frac{h^2}{8m_0r^2}\left(\frac{1}{m_e^*} + \frac{1}{m_h^*}\right) - \frac{1.8e^2}{4\pi\varepsilon\varepsilon_0 r}$$

r (nanočestice) = ?

Empirijski model (korelacija TEM)

5. Primjena kvantnih točaka u imunosenzorima

Applications of quantum dots as probes in immunosensing of small-sized analytes

Francesc A. Esteve-Turrillas, Antonio Abad-Fuentes*

Department of Biotechnology, IATA-CSIC, Agustín Escardino 7, 46980 Paterna, Valencia, Spain

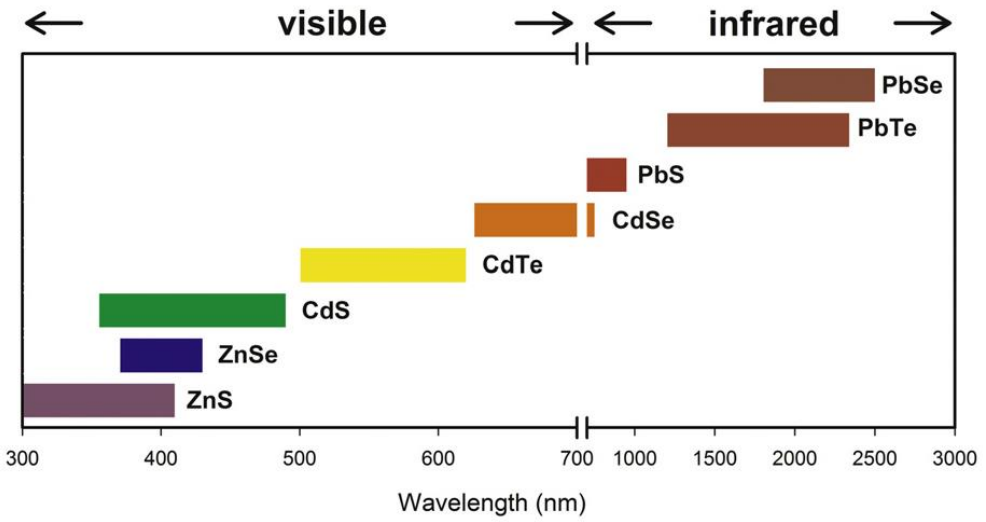


Fig. 1. Dependence of fluorescence emission wavelengths of quantum dots on their chemical composition.

Biosensors and Bioelectronics 2013

Pročitati ***Introduction***

5. Primjena kvantnih točaka u imunosenzorima

3. Funkcionalizacija površine kvantne točke

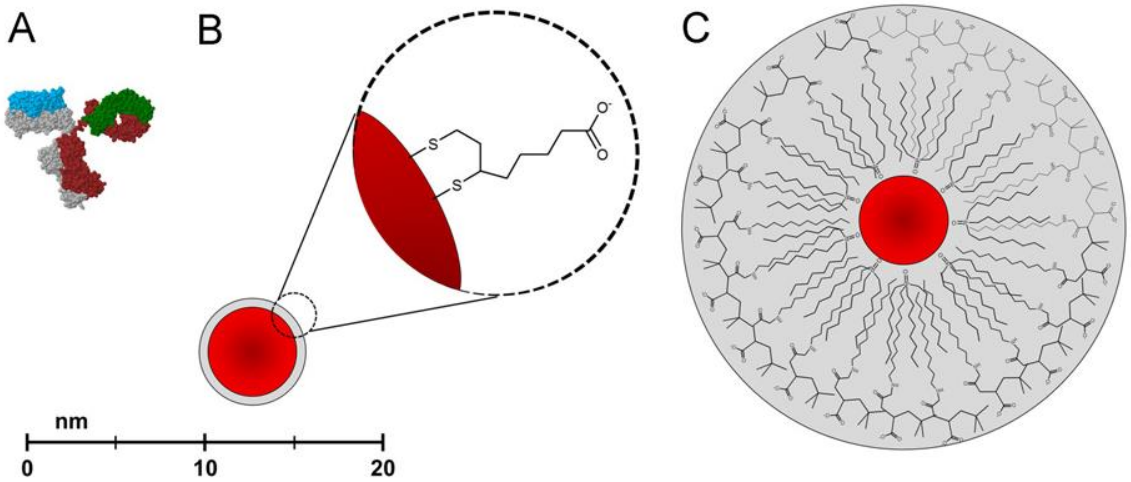


Fig. 4. Typical particle size of an antibody (A), a QD functionalized by ligand exchange with dihydrolipoic acid (B) and a QD coated with amphiphilic polymer (C).

5. Biokonjugacije (5.1. Primjena aktivnog estera)