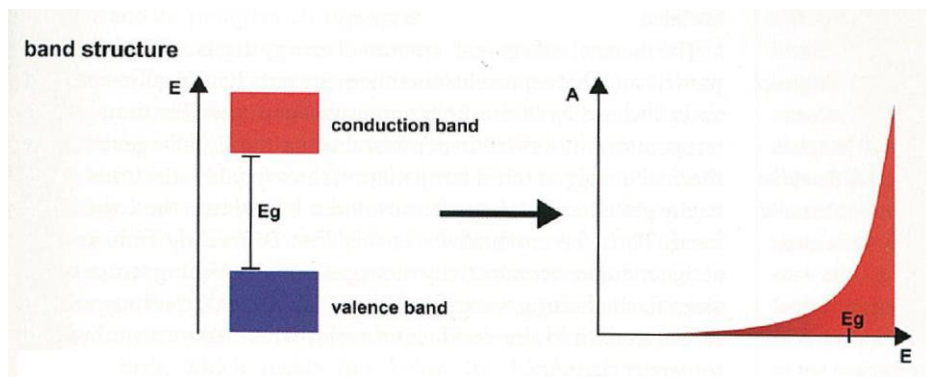
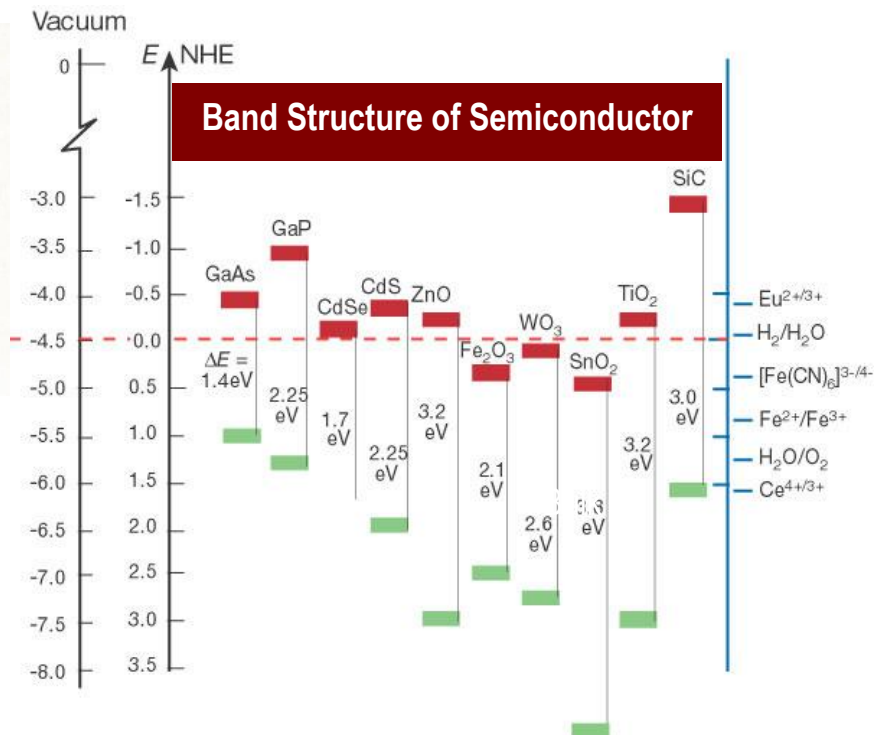
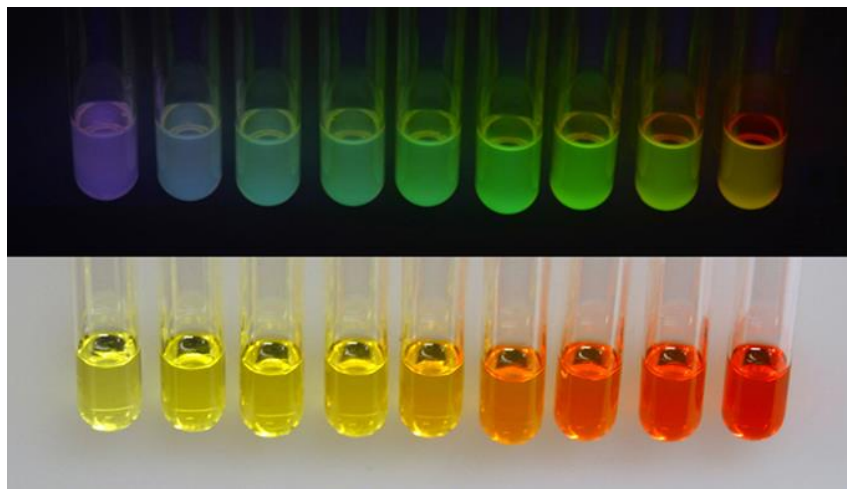


# UV-visible Spectrum of Quantum Dots



Concepts of Nanochemistry, Cadwmtiri and Ozin, WILEY-VCH, 2009

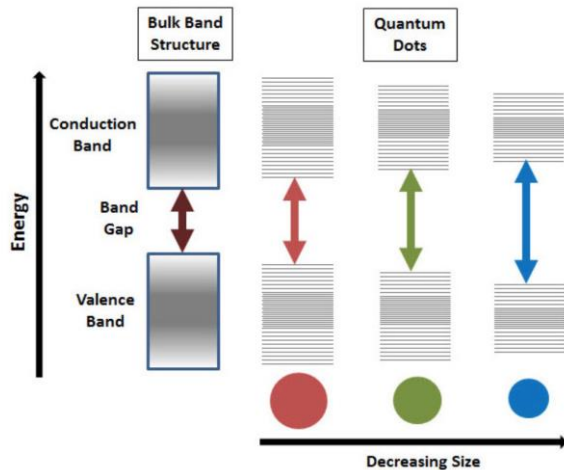


Michael Grätzel, Nature 414, 338-344, 2011.

What is the wavelength of 2 eV photon? 621 nm

# Quantum Dots

$$E = \frac{n^2 h^2}{8ma^2}$$



Once the Hartree-Fock iteration scheme converges, the total energy of the exciton is estimated by the following expression:

$$E(X) = \tilde{E}_e + \tilde{E}_h, \quad (4)$$

and the corresponding effective band gap is given by

$$E_g^{\text{eff}}(X) = E_g + E(X), \quad (5)$$

where  $E_g$  is the bulk band-gap energy.

