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## Comparison of phase transfer rates of three types of core-shell CdSe/Zns, Inp/Zns, CulnSe/ZnS quantum dots from organic-to-water phase

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The amount of quantum dots released to various environmental media is likely to increase in parallel with the increase in their production and use. There is a need for more research on fate and transport of quantum dots in the environment. This study focused on phase transfer of three types of core-shell CdSe/ZnS, InP/ZnS, CuInSe/ZnS quantum dots from organic phase (toluene/hexane (1:2) to water phase. The effect of Natural Organic Matter (NOM, humic acid concentrations of 5- 10- 20- 50-100 ppm) and

ionic strength (0.01M, 0.02M, 0.03M KCl) on phase transfer rate were investigated. Phase transfer was characterized by multiple techniques including infrared and UV/Vis absorption spectroscopy, electron microscopy, FTIR spectroscopy and ICP-MS. This study aims to advance our understanding on destabilization and transport of quantum dots that have varying elemental composition for design for environment.

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