

Abstract Submitted
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**Synthesis and Characterization of
Hydrophobic-Core Hydrophilic-Shell Nanoparticles and its Use as Encapsulating Agents for Fluorescent Probes** JORGE CHÁVEZ, JEFFREY WONG, RANDOLPH DURAN, Department of Chemistry, University of Florida —

Hydrophobic-core hydrophilic-shell nanoparticles were synthesized and used for the encapsulation of hydrophobic fluorescent dyes. The synthesis of these nanocontainers is based on a microemulsion system combining three amphiphiles, being one of them chemically active. This combination produces spherical aggregates with hydrophobic interiors and the ability to grow a chemically connected, hydrophilic shell. The non polar interior of this system offers the possibility of encapsulating hydrophobic species and, at the same time, the polar character of its periphery allows its use in aqueous environments. In this contribution, we report the characterization of the nanocapsule precursors and the final product, as well as the study of the final fate of the encapsulated agents inside the capsules. Dynamic light scattering, transmission electron microscopy and atom force microscopy were used for the characterization of the particles. The dyes used in this study, dansyl chloride and coumarin 153 are good sensors of rigidity and polarity, which was used to prove their encapsulation by fluorescence studies. This system opens the possibility for hydrophobic fluorescent probes to be used for imaging applications in biological relevant systems.

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