## **Electronic Supplementary Information**

## A New Method for the Preparation of Silica-Polycarbazole Composite Particles of a Core-Shell Morphology

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- High resolution SEM microphotographs and compositional EDS p. 2 Linescan analysis of a biphasic SiO<sub>2</sub>/polyDCL composite (<u>C</u> and <u>Si</u> elements appearing as *red* and *green* lines respectively)
- 2. SEM microphotographs of particulate systems obtained using 5.0 p. 2-3 (A), 7.0 (B), 10.0 (C), & 15.0 (D) molar % of reagent 2 in W/O micro-emulsion experiments
- FTIR spectra of unmodified SiO<sub>2</sub> nanoparticles (NPs, *blue* graph), p. 3 hybrid H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub> NPs (*red* graph), and H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub>/polyDCL (*green* graph) composite particles
- UV-vis absorption (*left*) and fluorescence (*right*) spectra of hybrid p. 3 H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub> NPs in EtOH (1.0 mg/mL) using a Cary 300 UV-Vis and an AMINCO-Bowman Series 2 fluorescence spectrophotometer respectively
- 5. Digital photograph of unmodified SiO<sub>2</sub> (*left*) and hybrid H-SiO<sub>2</sub>-g p. 4 Cbz<sub>2%</sub> (*right*) NPs (EtOH suspension, 1.0 mg/mL) showing the fluorescence of Cbz-containing H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub> NPs (CAMAG Spectroline CX UV cabinet, λ<sub>excitation</sub> = 366 nm)
- KPS spectra of unmodified SiO<sub>2</sub> (top) and of hybrid H-SiO<sub>2</sub>-g Cbz<sub>2%</sub> NPs (bottom)
- XPS spectra of the *biphasic* SiO<sub>2</sub>/polyDCL material (*top*) and of H SiO<sub>2</sub>-g-Cbz<sub>2%</sub>/polyDCL composite particles of a core-shell
  morphology (*bottom*)

ESI 1. High resolution SEM microphotographs and compositional EDS Linescan analysis of a biphasic SiO<sub>2</sub>/polyDCL composite ( $\underline{C}$  and  $\underline{Si}$  elements appearing as *red* and *green* lines respectively)





ESI 2. SEM microphotographs of particulate systems obtained using 5.0 (A), 7.0 (B), 10.0 (C), & 15.0 (D) molar % of reagent 2 in W/O micro-emulsion experiments





**ESI 3.** FTIR spectra of unmodified SiO<sub>2</sub> NPs (*blue* graph), hybrid H-SiO<sub>2</sub>-*g*-Cbz<sub>2%</sub> NPs (*red* graph), and H-SiO<sub>2</sub>-*g*-Cbz<sub>2%</sub>/polyDCL (*green* graph) composite particles



**ESI 4.** UV-vis absorption (*left*) and fluorescence (*right*) spectra of hybrid H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub> NPs in EtOH (1.0 mg/mL) using a Cary 300 UV-Vis and an AMINCO-Bowman Series 2 fluorescence spectrophotometer respectively



**ESI 5.** Digital photograph of unmodified SiO<sub>2</sub> (*left*) and hybrid H-SiO<sub>2</sub>-*g*-Cbz<sub>2%</sub> (*right*) NPs (EtOH suspension, 1.0 mg/mL) showing the fluorescence of Cbz-containing H-SiO<sub>2</sub>-*g*-Cbz<sub>2%</sub> NPs (CAMAG Spectroline CX UV cabinet,  $\lambda_{\text{excitation}} = 366$  nm)





**ESI 6.** XPS spectra of unmodified  $SiO_2$  (*top*) and of hybrid H-SiO<sub>2</sub>-g-Cbz<sub>2%</sub> NPs (*bottom*)

**ESI 7.** XPS spectra of the *biphasic* SiO<sub>2</sub>/polyDCL material (*top*) and of H-SiO<sub>2</sub>-*g*-Cbz<sub>2%</sub>/polyDCL composite particles of a core-shell morphology (*bottom*)

