Supplementary Material (ESI) for Journal of Materials Chemistry

Supporting Materials

Synthesis and characterization of highly fluorescent quantum dots-polymer nanocomposites

Joe Weaver,[1] Rashid Zakeri,[1a] Samir Aouadi,[2] and Punit Kohli[1]

[1]Departments of Chemistry and Biochemistry, and [2]Physics

Southern Illinois University

Carbondale, IL 62901

[1a] Present address: Department of Chemistry, Indiana University, Bloomington, IN 47405

Email: pkohli@chem.siu.edu

Standards	Q_y	**Conditions for Q.Y. Measurement**	**Excitation [nm]**
Fluorescein	95	0.1 M NaOH	496
Rhodamine 6G	94	Water	488
Rhodamine B[1b]	31	Water	514

Table 1S*:* Quantum yield standards.[1a]

We estimate the Raman peak position, λ_R, using the following formula:[2]

$$\lambda_R = \lambda_{ex}/(1-\lambda_{ex}\,\Delta\nu) \qquad [1]$$

where λ_{ex} is excitation peak, $\Delta\nu$ is Raman wavelength shift for the solvent (~3020 cm^{-1})[3].

Table 2S shows comparison of calculated and observed Raman peaks for three different excitation wavelengths. There is an excellent agreement between calculated and observed Raman peak positions.

λ_{ex} (nm)	**400**	**390**	**410**
Calculated peak position (nm)	455	442	468
Observed peak position (nm)	454	441	468

Table 2S. Observed and calculated Raman peak positions for three excitation wavelengths.

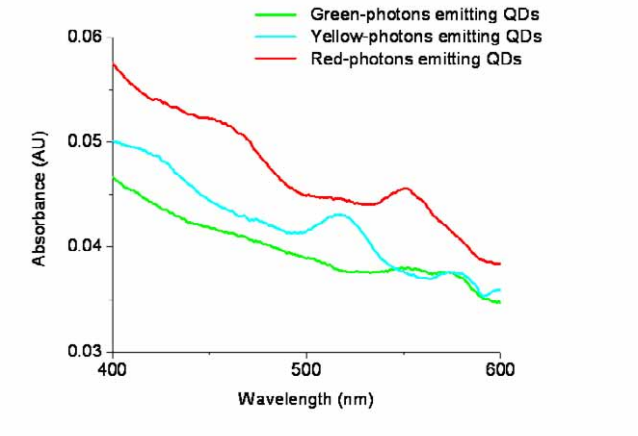
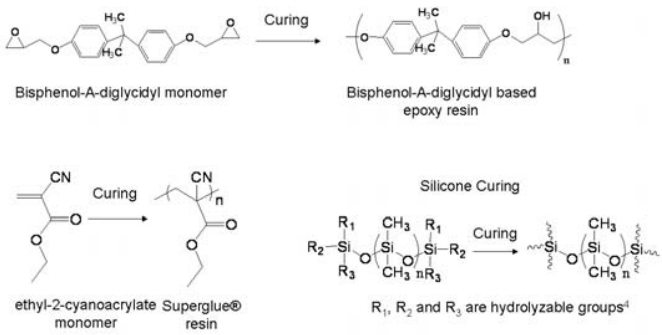


Figure 1S. Electronic absorption spectrum of three different QDs. See text for more details.



Scheme 1S. General curing reactions of three polymers used in this study.

References.

1. (a) Lakowicz, J. R. Principles of Fluorescence Spectroscopy 2006, Springer, NY, page 54. (b) Magde, D.; Rojas, G. E.; Seybold, P. *Photochem. Photobiol.* **1999**, *70*, 737.

2. Ingle, J. D.; Crouch, S. R. Spectrochemical Analysis, 1988, Prentice Hall, NJ, page 463.

3. Parker, C. A. *The Analyst* **1959**, *84*, 446-453.

4. Silicon Compounds: Silanes and Silicones, Eds. Arkles, B. and Larson, G.; Gelest Inc. Morrisville, PA.