

Supporting Information

From Si and C encapsulated SiO₂ to SiC: Exploring the influence of sol-gel polymer substitution on thermally induced nanocrystal formation.

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Determining Quantum yields

Table ES1: The excitation wavelength, slit widths and reference for the etched samples.

Sample	Excitation wavelength (nm)	Slit width	Reference
A5	350	5	Coumarin 1
B5	350	5	Coumarin 1
C5	350	10	Naphthalene

The slopes of the integrated PL intensity versus absorbance were found for the etched samples and the quantum yields were calculated using the following equation:

$$\varphi_x = \varphi_{st} \left(\frac{m_x}{m_{st}} \right) \left(\frac{\eta_x^2}{\eta_{st}^2} \right)$$

where 'φ' is the quantum yield, 'm' is the slope of the integrated PL versus absorbance curve and 'η' is the refractive index of the solvent. The subscript 'st' refers to the standard organic dye while 'x' indicates the unknown species to be calculated.

Figure ES1: HR XP spectra of the Si 2p region of the samples **A4** – **C4**. For the clarity of the figure only Si 2p_{3/2} spin-orbit lines are shown. The full-width half maxima of the Si 2p_{3/2} spin-orbit lines are maintained below 1.2 eV.

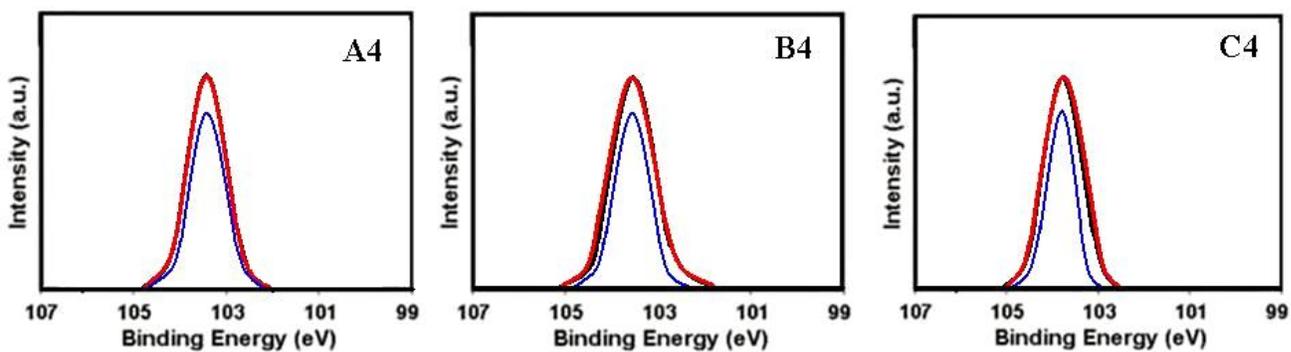


Figure ES2: HR XP spectra of the C 1s region of the HF etched samples

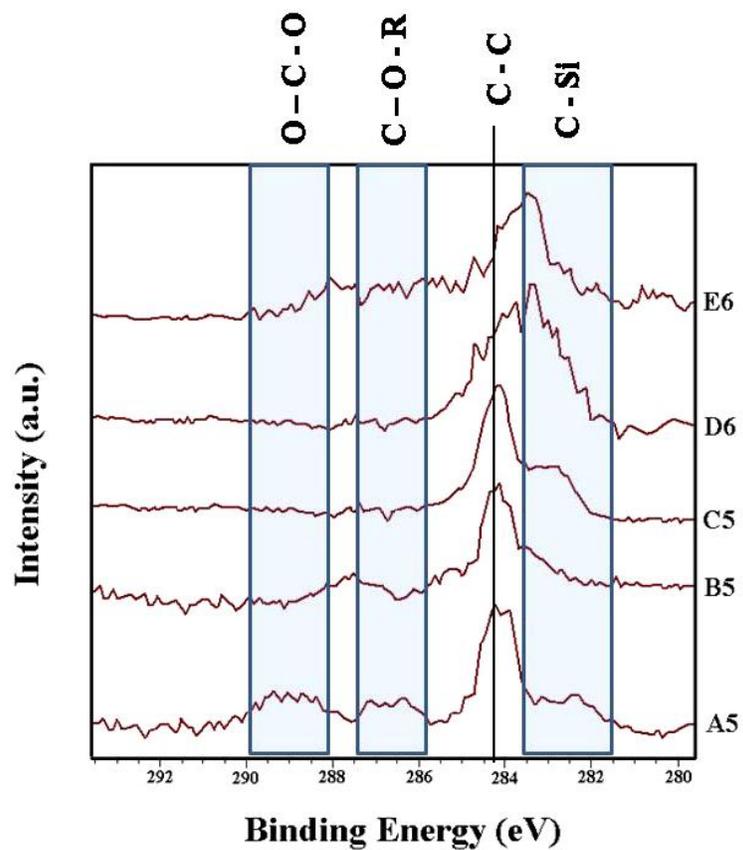


Figure ES3: Photoluminescence (PL) spectra of **A5**, **B5** and **C5** samples dispersed in toluene.

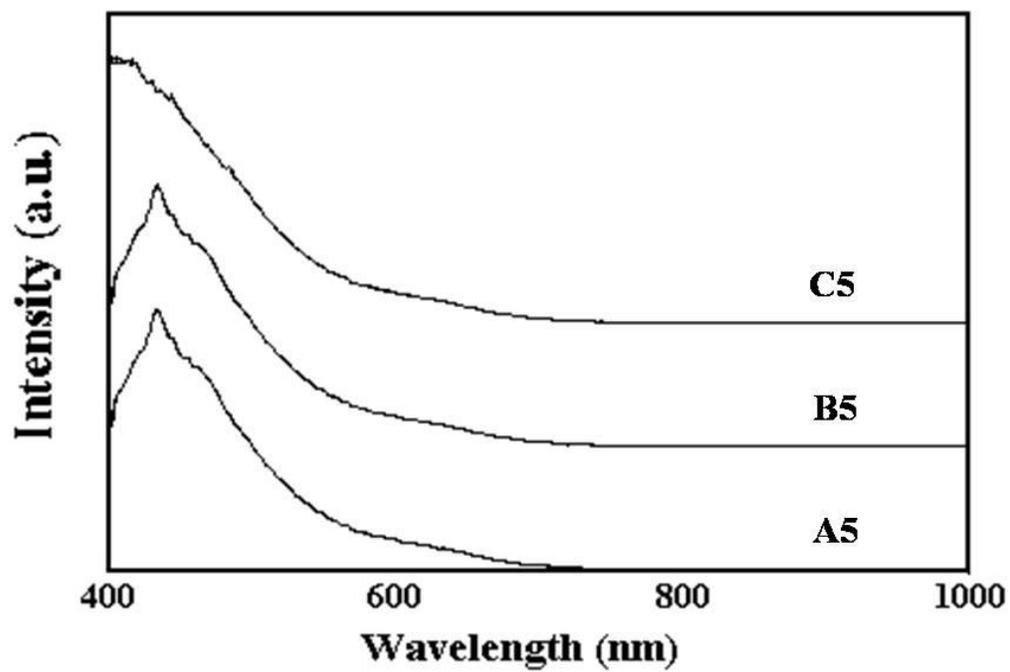


Figure ES4: AFM images of the HF etched samples, (A) **A5**, (B) **B5** and (C) **C5** drop coated on silicon wafer.

