

Size-Dependent Reactivity in Hydrosilylation of Silicon Nanocrystals

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An incorrect version of the Gaussian distribution appeared in the Supporting Information discussion on small-angle X-ray scattering (SAXS) theory and fitting (page S2, eq 4). The correct equation is:

$$N(R) = \frac{1}{\sigma\sqrt{2\pi}} e^{-(R - \bar{R})^2/2\sigma^2}$$

Additionally, it was brought to our attention that the published SAXS fitting approach neglected to describe an additional parameter used to account for residual background signal fit using the Irena package. This parameter was typically ca. 1% of the maximum sample scattering intensity and does not significantly affect the quality of our fits. However, in the published Porod plots (Figures 3b, 4b, and 5b) the residual background may give the impression there is very weak scattering signal from the samples due to the sharp increase at high q . Manually subtracting the background parameter from the data yields the plots shown below.

We thank Dr. Brian Korgel and his colleagues for directing these issues to our attention and regret the oversight.

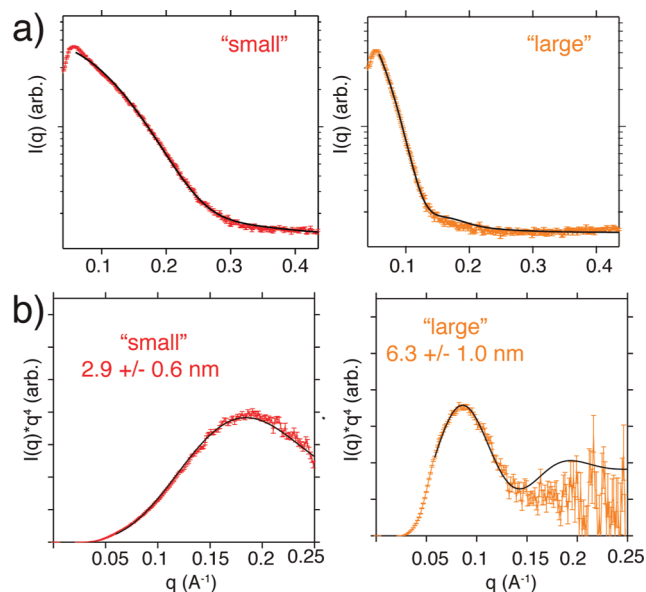


Figure 3. Background-subtracted SAXS of “small” and “large” Si-NCs functionalized by photochemical and thermal hydrosilylation with 1-dodecene, respectively, plotted as (a) $I(q)$ vs q and (b) as a Porod plot with $I(q) \cdot q^4$ vs q .

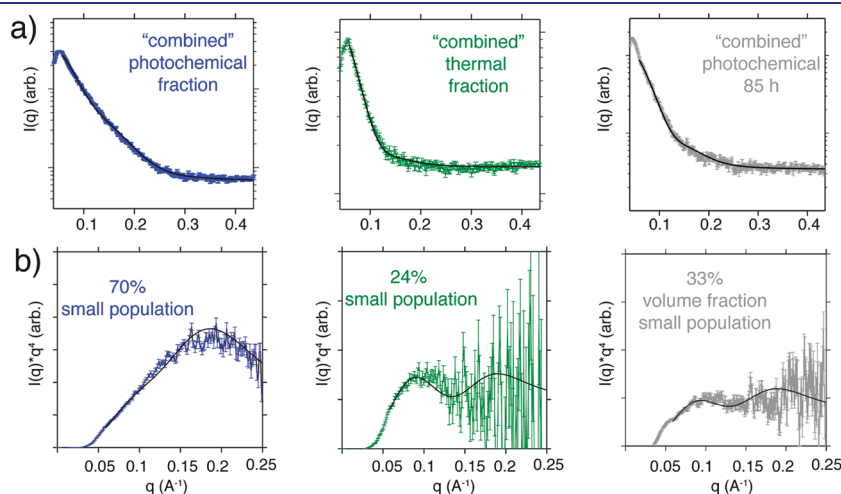


Figure 4. Background-corrected SAXS of fractions isolated from the “combined” sample after photochemical, thermal, and extended photochemical hydrosilylation, plotted as (a) $I(q)$ vs q and (b) as a Porod plot with $I(q) \cdot q^4$ vs q .

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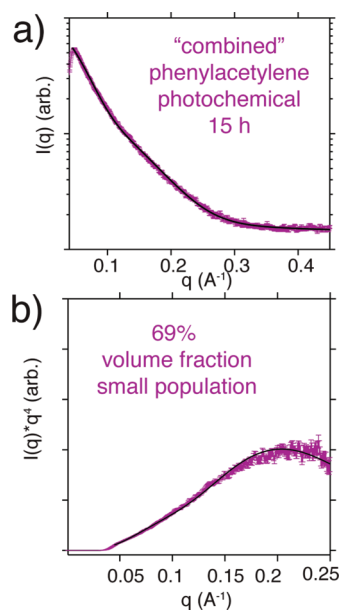


Figure 5. SAXS of the well-functionalized fraction isolated from the “combined” sample after photochemical hydrosilylation with phenylacetylene. Plotted as (a) $I(q)$ vs q and (b) as a Porod plot with $I(q) \cdot q^4$ vs q .