Electronic Supplementary Material (ESI) for RSC Advances.

Supporting information:- Highly Photoluminescent and Stable Silicon Nanocrystals Functionalized via Microwave-Assisted Hydrosilylation

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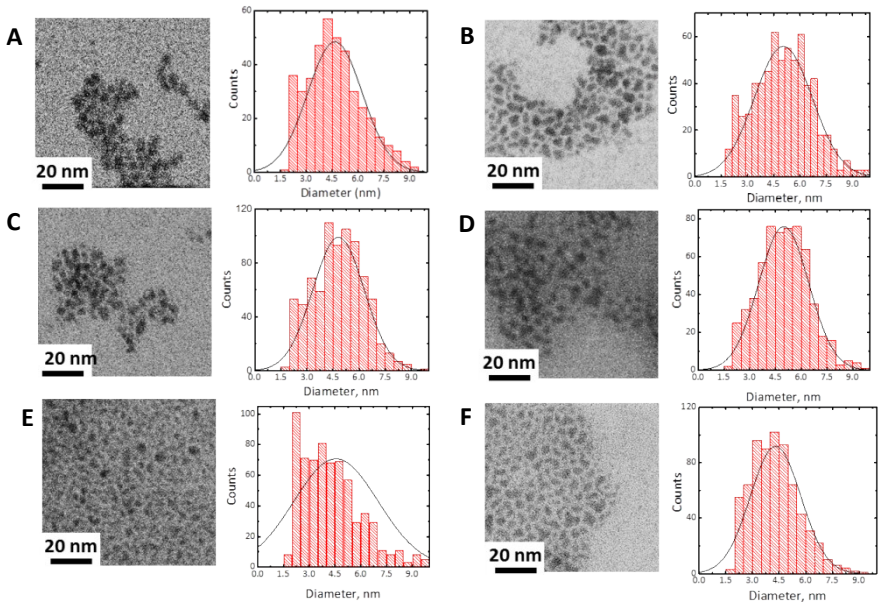

Fig. S1 TEM images and particle distribution of of free standing Si-NCs capped with hexene-1 (A), octane-1 (B), decene-1 (C), dodecene-1 (D), teteradecene-1 (E) and hexadecane-1 (F).

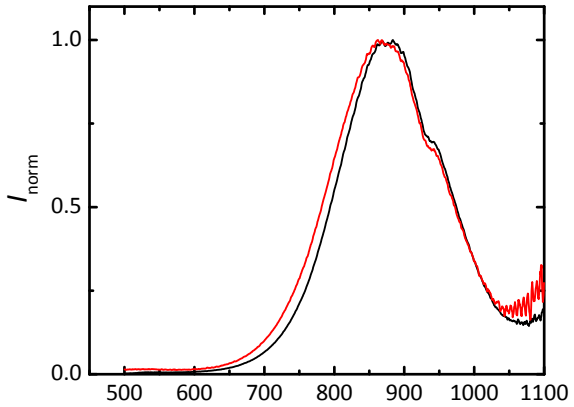

Fig. S2 Normalized luminescence spectrums of Si-NCs prepared through MW heating (20 min, 250 °C) – black line and conventional heating (18 hours, 175 °C) – red line. Capping ligand is decene-1. PLQY in case of MW heating is 27 %. PLQY after conventional heating is ..%

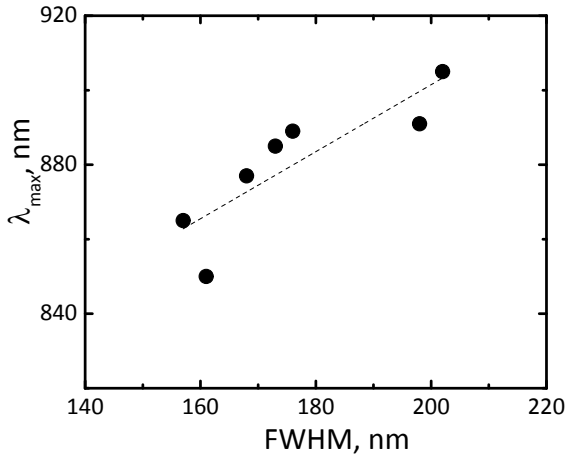

Fig. S3. Position of luminescence maximum as function of the full width at half maximum (FWHM) derived for the Si-NCs luminescence peaks (Fig. 2). Fig. S3 displays red shift in the position of luminescence maximum observed for Si-NCs with broad size distribution (e.g. broad luminescence peak)

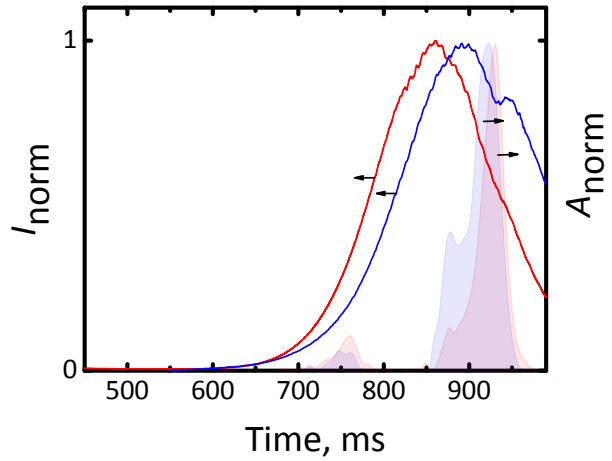

Fig. S4. Emission (I_{norm}) of Si-NCs capped with hexene-1 (red) and hexadecene-1 (blue) dispersed in hexene-1 and hexadecene-1, correspondingly. NIR absorption (A_{norm}) of hexene-1 (red) and hexadecene-1 (blue).

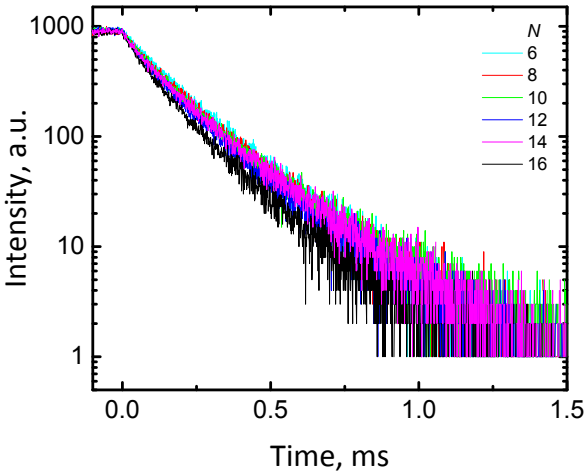

Fig. S5 Luminescence decays of Si-NCs with different capping ligands. *N* is the number of carbon atoms in the linear aliphatic chain of the ligand.