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Probing Photon Correlation in Spontaneous Emission of Lanthanide Nanocrystals

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We explore the lifetime and cross-correlation of different sizes $\text{NaYb}_x\text{Y}_{1-x}\text{F}_4$ ($x = 20\%$, 50% and 100%) nanoparticles. The lifetime reduces when Yb doping concentration increases, The $g_2(0)$ of NaYbYF_4 is over 10, but only for nanocrystal size below 40 nm.

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