Supplementary Materials for

Influence of Gold Nanoantennas on the Photoluminescence of Si-Nanocrystals

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Theoretical results before and after overgrowth

The results before and after the overgrowth are shown in Fig. S1. Before overgrowth the surrounding refractive index is smaller than after overgrowth. So the resonance of the antennas shifts to longer wavelengths.

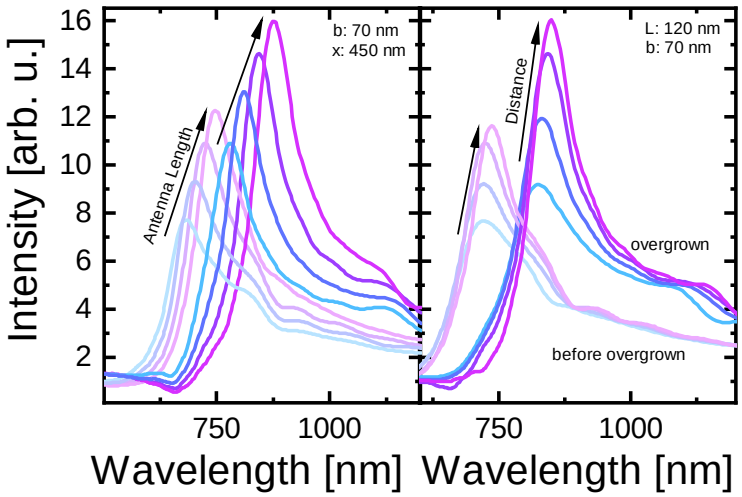

Figure S1: Theoretical results depending on the antenna length and the distance between the antennas before and after overgrowth. In the left part the antenna length is changed and the width and the lattice constant are kept constant at $w = 70\,\text{nm}$ and $x = 450\,\text{nm}$. In the right part the lattice constant is varied and the length and width are kept constant at $L = 100\,\text{nm}$ and $w = 70\,\text{nm}$.

Polarization dependence

In Fig S2 the polarization dependence of the nanoantennas is shown. The length is hardly greater than the width, so the dependence of the polarization is really small. For the measurement the sample is turned around about 90°.

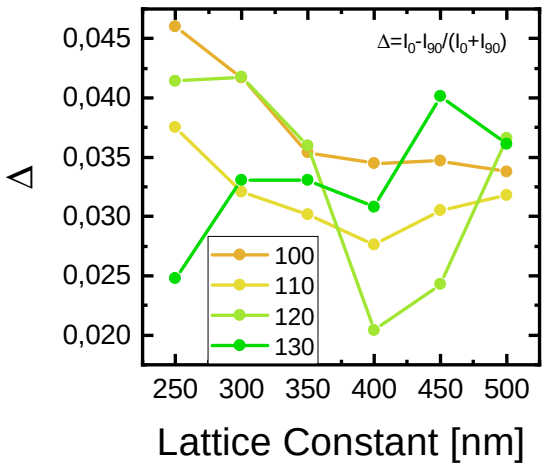

Figure S2: Polarization dependence of the nanoantennas in photoluminescence measurements for different antenna lengths.