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Exciton Dynamics in InSb Colloidal Quantum Dots

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(2) The presence of specific capping agents and solutions is accounted for by the appropriate choice of the dielectric constant outside the dot,[3] in this case $\epsilon = 2.5$.

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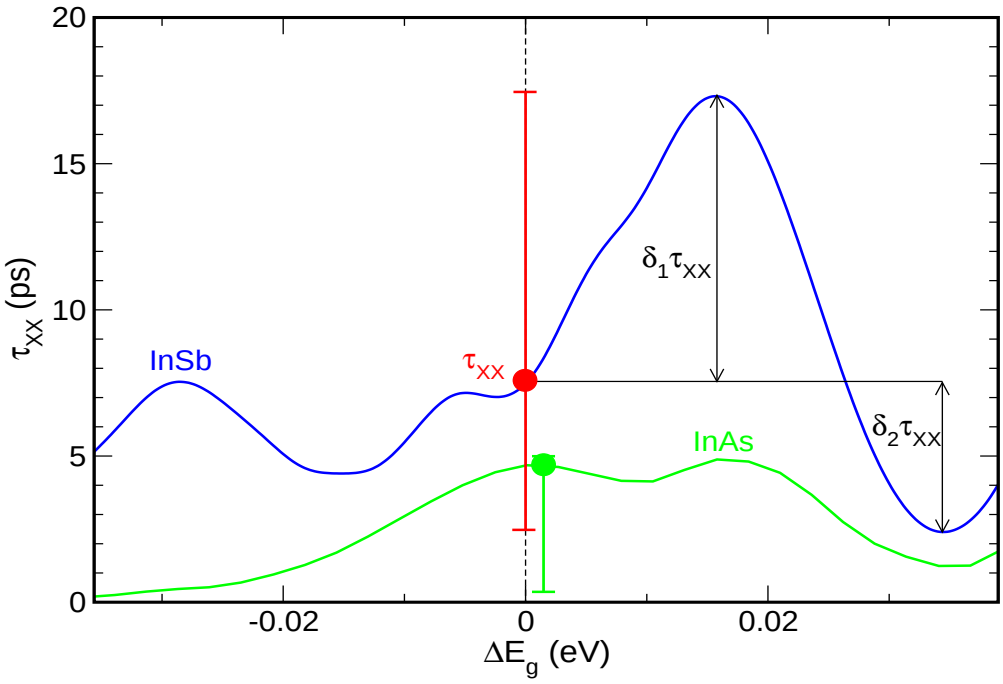

S 1: Calculated AR times for oleic-acid-capped InSb ($R = 2.1$ nm, blue curve and red symbol) and InAs ($R = 2.0$ nm, green curve and green symbol) dots in tetrachloroethylene[1,2] plotted as a function of ΔE_g, the variation of the energy gap around the value calculated for this size ($\Delta E_g = 0$), for a range of energies corresponding to a 5% size distribution in InSb CQDs. The green symbol is slightly displaced to the right for clarity. The black arrows indicate the largest variations of τ_{XX} in this energy interval, compared to its value at $\Delta E_g = 0$, and are represented as asymmetric error bars in the symbols: if $\tau(\Delta E = 0)$ is located at a maximum of the curve, the error bar will appear only towards smaller values (this is the case, e.g., for $\tau(D = 4.18$ nm) in Fig. 5), whereas the opposite is true in the case of $\tau(\Delta E = 0)$ being at a minimum (see $\tau(D = 4.96$ nm) in Fig. 5). This procedure is applied to determine the error bars for all theoretical data appearing in Figs. 4 and 5.