



8]fYVhWff]Yf'a i`hjd`]Wjhcb`Xi Y`hc`]bj YfgY`5i [Yf`gWjhYf]b[`]b`7XGY`ei Ubh a `Xchg
Marco Califano, Alex Zunger, and Alberto Franceschetti

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5fh]WYg`mci `a UmVY`]bhYfYghYX`]b

[Origins of low energy-transfer efficiency between patterned GaN quantum well and CdSe quantum dots](#)

Appl. Phys. Lett. %\$, 091101 (2015); 10.1063/1.4913533

[Green synthesis of highly efficient CdSe quantum dots for quantum-dots-sensitized solar cells](#)

J. Appl. Phys. %\$, 193104 (2014); 10.1063/1.4876118

[Optimization of growth conditions of type-II Zn\(Cd\)Te/ZnCdSe submonolayer quantum dot superlattices for intermediate band solar cells](#)

J. Vac. Sci. Technol. B ' %

Direct carrier multiplication due to inverse Auger scattering in CdSe

used in the calculation of the decay rates are computed with the semi-empirical nonlocal pseudopotential method described in Refs. 17 and 20, solved within a plane-wave basis, including spin-orbit effects. Electron and hole levels are labeled with increasing and, respectively, decreasing energy as e_i and h_j , with $i, j = 1, 2, \dots$, where $e_1 = e_{\text{cbm}}$ and $h_1 = h_{\text{vbm}}$

energy levels above threshold. The AC lifetimes are obtained by summing over 30 deep hole final states $\{h_n\}$, whose energy is centered around $\epsilon_{h_1} - E_g$.

Bulk versus dot. We find (insets in Figs. 2 and 3) that the