9I W]hYX!ghUhY fY`UI Uh]cb]b DVGY ei UbhI a Xchg

Joonhee M. An, Marco Califano, Alberto Franceschetti, and Alex Zunger

5fh]W`Yg mci a Um VY]bhYfYghYX]b
Exploring size and state dynamics in CdSe quantum dots using two-dimensional electronic spectroscopy
J. Chem. Phys. %($, 084701 (2014); 10.1063/1.4865832

Carrier relaxation dynamics in In As ∕ In P quantum dots
Appl. Phys. Lett. -&, 191103 (2008); 10.1063/1.2909536

Spin-preserving ultrafast carrier capture and relaxation in InGaAs quantum dots
Appl. Phys. Lett. , +, 153113 (2005); 10.1063/1.2103399

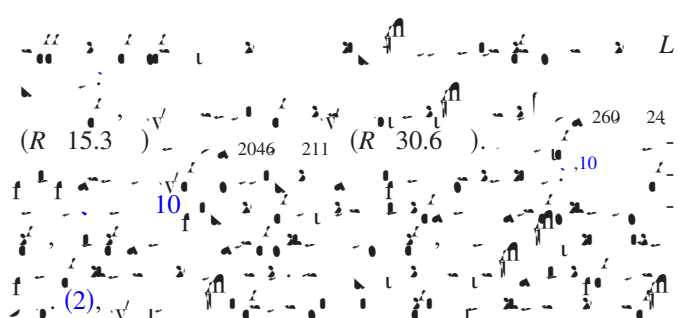Spectroscopy and carrier dynamics in CdSe self-assembled quantum dots embedded in Zn x Cd y Mg 1 – x – y Se
Appl. Phys. Lett. , *, 253113 (2005); 10.1063/1.1947909

Excited-state dynamics and carrier capture in InGaAs/GaAs quantum dots
Appl. Phys. Lett. +-, 3320 (2001); 10.1063/1.1418035

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(2   200   2   200   2   200)

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INTRODUCTION

$(L,$

R,

$$V(\mathbf{r}) \quad \sum_\alpha \sum_{\mathbf{R}} v_\alpha(|\mathbf{r} \quad \mathbf{R} \quad \mathbf{d}_\alpha|). \tag{4}$$

bulk

(. 36)

~ 0.5

L-

( )

40

. 40

L

$(R \quad 15.3 \quad)$ 2046 211 $(R \quad 30.6 \quad)$. 260 24

,10

10

(2),

$$\epsilon^{-1}(\mathbf{r}_1,\mathbf{r}_2) \quad \epsilon_{\text{i}}^{-1}(\mathbf{r}_1,\mathbf{r}_2) + [\epsilon_{\text{i}}^{-1}(\mathbf{r}_1,\mathbf{r}_2)$$
$$\epsilon_{\text{i}}^{-1}(\mathbf{r}_1,\mathbf{r}_2)]m(\mathbf{r}_1)m(\mathbf{r}_2), \tag{5}$$

$$m(\mathbf{r}) \quad 1 \quad |\mathbf{r}| \leqslant R \quad d \quad (\quad , d \quad 1 \quad),$$
$$\frac{}{\sqrt{[\quad (\pi(R \quad |\mathbf{r}|)/2d)+1]/2}} \quad R \quad d \quad R+d,$$

$(\geqslant 130 \quad , \quad e_p \quad e_s \quad \sim \hbar\omega \quad)$

SUMMARY