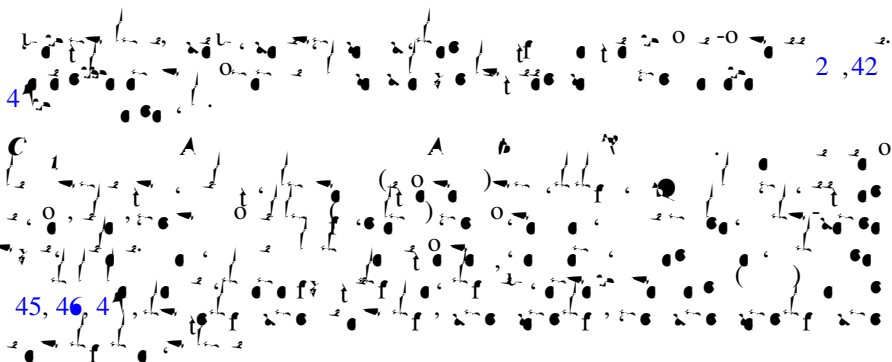


Chapter 14

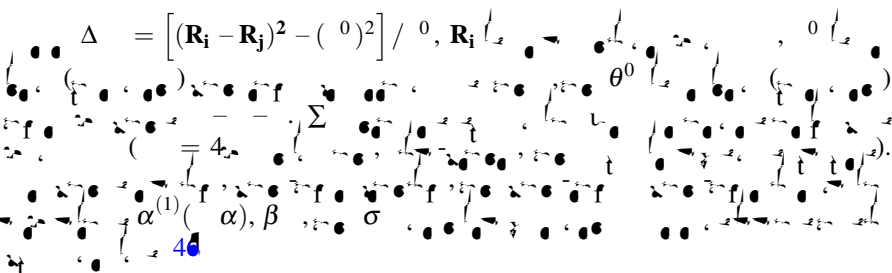
Atomistic Pseudopotential Theory of Droplet Epitaxial GaAs/AlGaAs Quantum Dots

Jun-Wei Luo, Gabriel Bester, and Alex Zunger

Abstract ...
...
... 14.2 ...
... 14.3 ...



$$\begin{aligned}
 E &= \sum \sum 3 \left[\alpha^{(1)} \Delta^2 + \alpha^{(2)} \Delta^3 \right] \\
 &+ \sum \sum \frac{3\beta}{0} \left[(\mathbf{R}_j - \mathbf{R}_i) \cdot (\mathbf{R}_k - \mathbf{R}_i) \theta^0 \right] \\
 &+ \sum \sum \frac{3\sigma}{\sqrt{0}} \Delta \left[(\mathbf{R}_j - \mathbf{R}_i) \cdot (\mathbf{R}_k - \mathbf{R}_i) \theta^0 \right], \quad (14.1)
 \end{aligned}$$

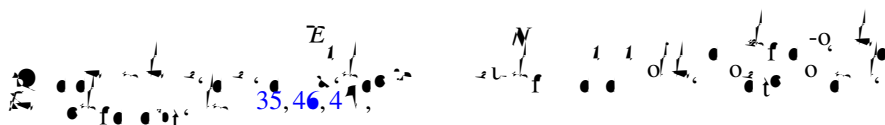


$$\begin{aligned}
 C_{11} + 2C_{12} &= \sqrt{\frac{3}{4}} (3\alpha + \beta - 6\sigma) \\
 C_{11} - C_{12} &= \sqrt{\frac{3}{0}} \beta \\
 C_{44} &= \sqrt{\frac{3}{0}} \frac{\alpha\beta - \sigma^2}{0}
 \end{aligned}$$



Fig. 14.1 $(\mathbf{R}_{12}, \mathbf{R}_{23}, \mathbf{R}_{34}) = (1 + \varepsilon) \cdot (\mathbf{R}_{12}^0, \mathbf{R}_{23}^0, \mathbf{R}_{34}^0)$

$$(\mathbf{R}_{12}, \mathbf{R}_{23}, \mathbf{R}_{34}) = (1 + \varepsilon) \cdot (\mathbf{R}_{12}^0, \mathbf{R}_{23}^0, \mathbf{R}_{34}^0). \tag{14.3}$$



(- 2, x t .3 500, 6.0 046anostru.3F2 1 Tf 1.99740004 0 TD 0 Tc (1)Tj372911413430344779

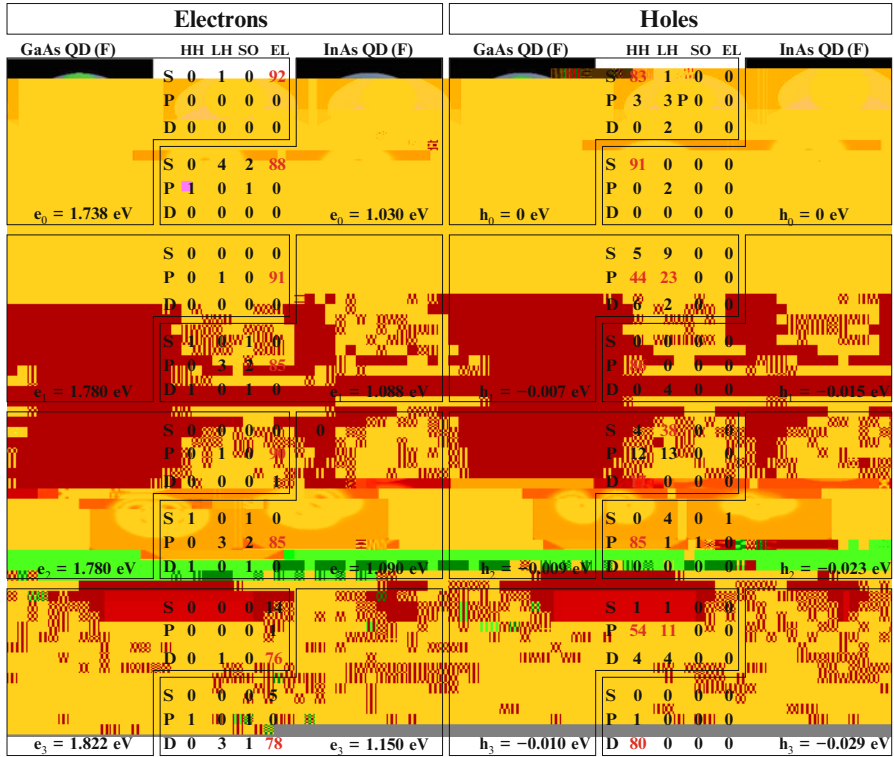
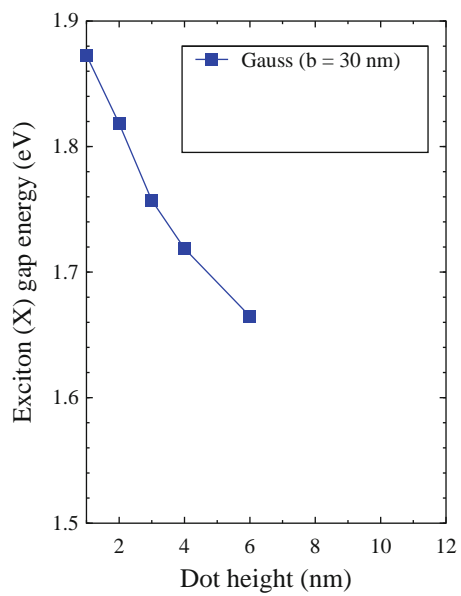


Fig. 14.2 (3) 2

--	--

-0.5 -

-



o d' l' c' d' c' ...

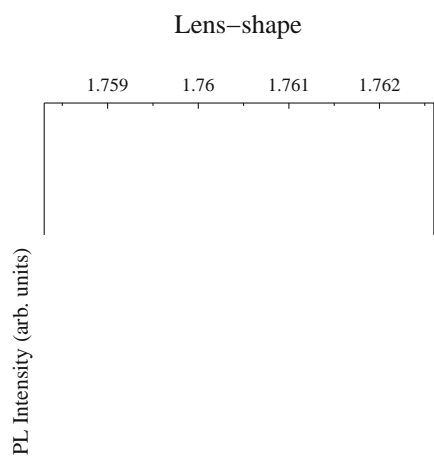
14 5, 62 1

25, 56, 60, 63, 64

(001) 14 5

2.3 ± 0.6 (311)

The diagram consists of a grid of points with various annotations. At the top left, the number '14' is present. Below it, a series of numbers '25, 56, 60, 63, 64' are listed. To the right, '5, 62' and '1' are noted. Further right, '14' and '5' are visible. At the bottom left, the mathematical expression '2.3 ± 0.6' is written. In the center and bottom right, crystallographic notations '(001)' and '(311)' are present. The diagram also features several musical notes and stems, suggesting a complex notation system.



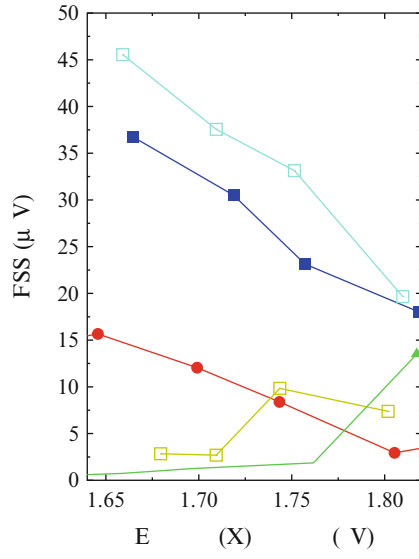


Table 14.1

			%	
00	0, 0.2	10, .5, 2.5	0	0
01		45, 45, 3	35	35
02		0, 50, 3	45	45
03		0, 50, 3	35	45
04		60, 40, 2	35	45
05		25, 31, 3,	35	35
06		30, 30, 3	30	30
0		30, 30, 4	30	30
0		30, 30, 6	30	30
0		35, 30, 3	30	30
10		35, 30, 4	30	30
11		35, 30, 6	30	30
12	0.06, 0, 4	30, 30, 3	30	30
13	0.06, 0, 4	30, 30, 6	30	30
14	0.06, 0, 4	35, 30, 3	30	30
15	0.06, 0, 4	35, 30, 6	30	30

110
21. (2012)

14.1
43, 44
14.2
12

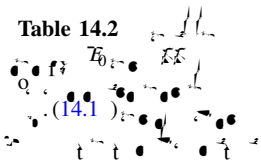
$$= c_2 + \delta c_1 + A, \tag{14.14}$$

c_2
 c_1
 δc_1

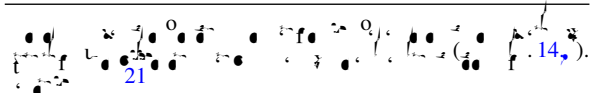
$$= \begin{pmatrix} \bar{E}_1 + \delta \bar{E}_1 + \gamma_1 F & 0/2 \\ 0/2 & \bar{E}_2 + \delta \bar{E}_2 + \gamma_2 F \end{pmatrix}. \quad (14.15)$$

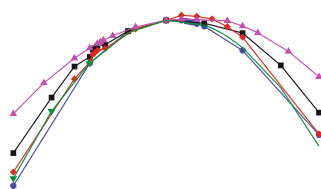
$$\begin{aligned} \bar{E}_1 &= 1/c_1 \\ \bar{E}_2 &= 2/c_2 \\ \delta \bar{E}_1 &= 1/\delta \\ \delta \bar{E}_2 &= 2/\delta \end{aligned}$$

Table 14.2



	\bar{E}_0 ()	μ ()	γ (/)	F_0 ()
00	1363	>	0.15	+ 2 3
01	1644	0.1	0.11	+1
02	1650	0.1	0.0	-4
03	1643	0.1	0.0	-4
04	1 42	0,	0.14	-43
05	16,	0.3	0.33	+2,
06	1 62 ± 2	0. ± 0.3	0. 5 ± 0.0	-21 ± 5
0	1 1 ± 2	0.4 ± 0.1	0, 5 ± 0.06	-26 ± 3
0	1666 ± 1	0, ± 0.	1.06 ± 0.0	-25 ± 2
0,	1 54	0,	0. ,	-33.5
10	1 14	0.4	0.	-3 .4
11	1660	0.	0, 6	-40.5
12	1 06 ± 5	1.2 ± 0.	0. 4 ± 0.11	-14 ±
13	1 2 ± 2	1.2 ± 0.5	0. 5 ± 0.0,	-15 ±,
14	1 , , ± 2	1.3 ± 1.0	0. 3 ± 0.03	-25 ± 6
15	1 21 ± 2	1. ± 1.4	0. 4 ± 0.0	-40 ± 5





(14.15), $(\delta c1)$.

ΔE γ (14.14)

(01, 02, 03, 04, 05) 3.5%, 2.4%, 2.6%, 5.0%, 2.2%

14. 10%, -100

+100

(14.1) (14.1)

(F=0)

$$F_0 = \frac{\Delta E \cos 2\theta}{\gamma} \quad 0 = -\Delta E \sin 2\theta, \quad (14.20)$$

ΔE $F=0$ γ

(14.20) 14.2

F_0 θ θ is large,

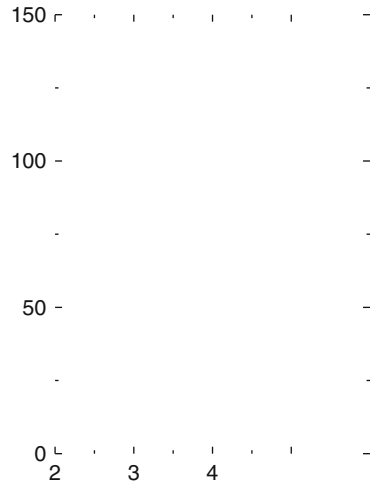
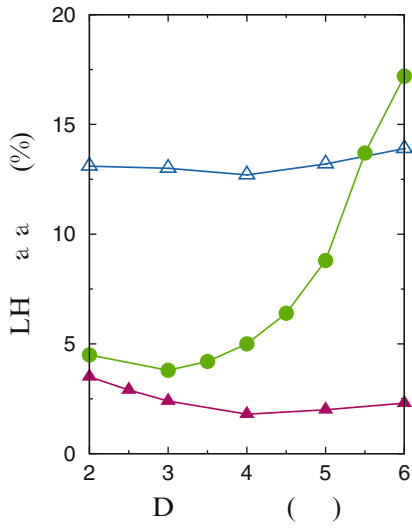
The image shows a musical score with two staves. The notation is dense and includes various symbols such as notes, rests, and dynamic markings. There are several annotations in blue ink: a '4.' followed by a blue dot, and a '25.' followed by a blue dot. The score is written in a style that appears to be a form of shorthand or a specific notation system, possibly related to a particular musical genre or a specific composer's style. The overall appearance is that of a handwritten or printed musical manuscript.

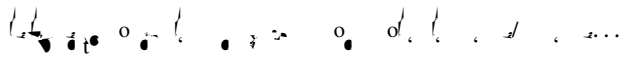
\dots

$$I = t_0 + \delta$$

$$\Psi^0 = t_0 \phi^0$$

$$\phi^0 = t_0 \delta = \delta^{(I)} + \delta^{(II)} + \delta^{(III)} + \dots$$





()

A musical staff with a treble clef and a common time signature. It contains several notes, including a half note, a quarter note, and a dotted quarter note, followed by rests. There are markings '2' and '5' below the staff, and a circled '2' above the staff. Some notes are highlighted in blue.

l'... o'... l'... d'... l'... e'... d'... e'... ..

