

Re: My New Website

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From: Y.Porat (maporat_at_012.net.il)

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Lothar Brendel <l.no.spam.brendel@uni-duisburg.de> wrote in message
news:<c9pn5c\$riv\$1@a1-hrz.uni-duisburg.de>...

> Y.Porat wrote:

> > Bjoern Feuerbacher <feuerbac@thphys.uni-heidelberg.de> wrote in message
news:<c9ndqe\$ode\$1@news.urz.uni-heidelberg.de>...

> >

> >> Y.Porat wrote:

>

> [...]

>

> >>> more clear – i did to myself such 3d models

> >>> and it helped me a lot though i am trained by my proffession

> >>> to read 3d structures while i had to compute volumes

> >>> *that belong to a single sphere* it was nearly indepensible

> >>> or else you are fet lost in the littel 3d detailes

> >>

> >> Well, the 3D model shown in that document is far clearer than any

> >> of the 3D pictures in your book. Apparently you have to practice

> >> drawing them a bit more...

> >

> > -----

> > what i show in my model is what Mr Brendel calles

> > 'the primitive unit'

>

> I don't know the picture of your model you're referring to, but somehow

> I have doubts about that. Do you really show a rhombohedron there?

i showed the hexagonal structure

that is the only 3d possibility to construct with the

what you call primitive unit)

which is a tetrahedre ie

it has two arms with the saparation of 109 deg

between ****all its arms**** ie between any two arms you take you will get

109 deg in the 3d directions.

you can build out of it (listen carefully)

only one 3d structure provided you use only one tetraheder

in each junction

is it clear now ??

no matter if i send you a scetch or not
it is unequivocally defined.

(i wonded if you would like to get my whole book which could
make my arguments much clearer to you
but i guess that once you hear Mr f desperate endless efforts
to defame me i guess you will decline my offer)
antway
btw i suggest to lower the volume of personal antagonism
that starts to build here whith the influence of
Feuerbacher that insist of defaiming me
because of his being defeated by me in some threads.
but that leds to no constructive discussion
if we want to do a real discussion we have to forget
any *personal accounts* and start to do it
open minded and open hearthed as if no personal clashes
had been before.
so even if we take your claim that there is 2 atoms in
a primitive unit
now my questionis:
how do you see in the x ray pictures that primitive unit
IOW: what are you actually *see* there??
that should be a preemptive question to have a common language
the question is to Mr Randel no need *at this stage*
for Bjoern to jump and 'help' Mr Randel

TIA
Y.Porat
(for Mr Randel i am still not a crqackpot- it is only
for Feuerbacher...)

>
>
> > *and it is either i am apoor explainer*
> > *or that both of you are slow about the problem.*
>
> *What is your basis to get arrogant?*
>
>
> > *actually it is confusing but we have to make it clear*
> > *anyway:*
> > *the problem with our discussion is that*
> > *both of you*
> > **take it for granted* that the promitive unit is composed of*
> > **one atom**
>
> *No! I _don't_ claim that it is "composed of one atom" but that it*
> *_contains_two_ atoms. And I can take it for granted because it is*
> *defined so.*
>

>
> > *while i claim that it is composed*
> > *of more than one!*
>
> *First you have to _define_ your "unit cell".*
>
>
> > *and that is the core and crux of our discussion.*
> > *i dont waht you to take it for granted i whant to prove*
> > *or disprove *just that for granted assumption**
> > *it can be done only*
> > *by findind how many atoms per say 1 cubic centimetr*
> > *and !!!!!*
>
> *Instead of (1cm)³ let's choose (0.357nm)³. We know from X-ray*
> *scattering, that this voulme holds 8 atoms. Can't we conclude from that*
> *1.75*10²³ atoms in one cm³?*
>
>
> > *listen care fully*
> > *take the x ray obsrevations*
> > *you see there (litrally see!) what is that we see there*
>
> *Did you ever see pictures of X-ray scattering?*
>
>
> > *we see some 'points' what ever it is or whaever you call it*
> > *we can call it 'the primitive latice builder' ok?*
>
> *No, that's _not_ what we see there. If you think otherwise, show us such*
> *a picture.*
>
> *What you call PLB is already known as "unit cell". There can be*
> *different ones of different shapes and volume, but for a given crystal,*
> *they have the same number of atoms/volume.*
>
>
> > *so we have to finds out*
> > **how many primitive latice builders (PLB) we have*
> > *in a cubic cm*
>
> *Okay: The volume of diamond's conventional unit cell (one realisation of*
> *what you call PLB) is known to be (0.367nm)³=4.55*10⁻²³cm³. Hence, in*
> *1cm³ we have 1/(4.55*10⁻²³)=2.2*10²² of them.*
>
>
> > *and divide the number of atoms with the number of PLD (per cm ^{^3})*
> > *what i claim is that the answer will be a surprise.*
>
> *If we use the density of diamond 3.51g/cm³ and the mass of a carbon*
> *atom 2*10⁻²³g, we get 1.76*10²³ atoms/cm³. If we divide that by*

sci.physics: Re: My New Website

- > $2.2 \cdot 10^{22}/\text{cm}^3$ we get 8 atoms/unit cell, which we already knew. Where's
- > the surprise?
- >
- >
- >> it will be more than one atom in a PLB–
- >> not in all but in too many lattice structures!
- >> (the diamond for sure for me more than one atom.)
- >
- > So you dispute diamond to have a regular lattice altogether?
- >
- >
- >> and that will lead
- >> to some more revolutionary understanding about the
- >> structure of matter
- >> (so it deserves an effort)
- >
- > How do you explain the agreement between
- > a) density + atom mass
- > b) X–ray experiments
- > c) STM experiments
- > ?
- >
- >
- >> so we have to simply find the volume that one PLB occupies
- >> if 'occupies' makes it more clear than my 'average volume unit'
- >
- > We know the volume of the conventional as well as of the primitive unit
- > cell (both are PLBs in your language).
- >
- >
- >> btw Mr Brendel you dont have to explain to me how nice and regular
- >> and exact and unambiguous– is the diamond structure i know it years ago
- >> anyway:
- >> TIA
- >
- > TIA?
- >
- > If you know that it is so nice and regular, how come that you claim it
- > has "more than one atom in a PLB– not in all but in too many lattice
- > structures"? So you claim that diamond is less regular than the so
- > called diamond lattice structure?
- >
- > asks
- > Lothar