

Annie entered the room.  
Doos: hi annie  
Annie: hi Doos  
Annie: the chat is working  
Doos: yes everything but the forum  
Annie: yes, the forum is lost for now  
Doos: new round, new chances  
Annie: yes  
Annie: hope it can be fixed soon  
Annie: you don't realise how much we miss the forum  
Annie: until something like that happens  
Doos: I think he is stressing over it as we speak  
Annie: i know,  
Annie: he would  
Doos: you can always retrieve the info from the harddisk  
Doos: but takes some fancy lowlevel programming and is very expensive  
Annie: yes, tell me about it.  
Annie: they could not retrieve anything from mine  
Doos: I bet the FBI could  
Annie: and i am still kicking myself every time i think about it  
Doos )  
Annie: a thorough investigation, huh  
Frank entered the room.  
Annie: Hi Frank  
Frank: Hi all  
Doos: if you delete something from your disk, it's not really gone, just coded  
Doos: hey frank  
Frank: hey  
Doos: glad you made it  
Annie: how things Frank,  
Annie: nice to have you  
Frank: I'm fine, had a nice day...walk in the forest in the rain  
Annie: so when did the forum exactly go down  
Annie: Doos, I was so busy since last thursday  
Frank: I couldn't get on since Thursday night  
Doos: last night my time  
Doos: really frank  
Annie: ok,  
Frank: I got on the site last night but couldn't access the forum the night before  
Annie: I think Robert would be working on it since then  
Frank: Poor Robert and everyone else. four years of information lost  
Doos: this forum was from the last year  
Annie: this format is new  
Doos: but most expertise is in our heads, only the quick reference is gone  
Annie: we had the other forum dissappear as well in the past  
Frank: ok... still I enjoyed working my way through it all though  
Doos: yah  
Annie: yes,  
Frank: Is Jen comming?  
Doos: shall we start the sudies?  
Doos: +t somewhere  
Frank: yes  
Annie: we are waiting, she might come yet  
Doos: so you wanted to reminisce the crystallography frank?

Frank: Ok first..Is corundum hexagonal or trigonal...yes please Annie  
Annie: Frank, did you have time to read all the sections in the forum  
Doos: trigonal  
Frank: Yes Annie but not all the way back  
Annie: oh ok,  
Frank: Why does RJ insist on placing corundum as hexagonal?  
Doos: he is a GG aswell, they dont do trigonal  
Annie: was thinking about you this morning, actually, because you are the newest member yet  
Annie: ok, americans say that would be hexagonal  
Frank: with quartz and tourmaline  
Annie: but the english/australian version is trigonal  
Annie: but they would put the two together  
Annie: since its is sort of true when you think  
Doos: they are very close together  
Frank: But RJ seems to separate them then puts corundum as hexagonal  
Doos: I think RJ is torn between GG and FGA  
Annie: because it is a subdivision to trigonal and very close together  
Annie: yes  
Annie: so thats why Robert would always balance it out because he is GG and FGA  
Doos: but for FGA, it's trigonal  
Annie: yes  
Frank: In Shumanns gemstone of the world he calls it hexagonal(trigonal) which makes sense  
Annie: yes  
Frank: but on his drawings of the crystal forms some examples seem to be trigonal and others hexagonal  
Doos: Gem-A wants you to name it as trigonal, so forget what the others say  
Frank: ok....but its roberts exam first  
Doos: lol, okay .. he'll let you pass aswell if you say it's trigonal  
Annie: the only hexagonal in the main crystals that concern us is really the beryls and apatite  
Annie: lol yes, Robert will not mark you wrong  
Frank: Ok then. It's trigonal  
Frank: Next  
Annie: although there are other ones that are lessor known  
Annie: but most will be intrigonal  
Frank: I've been trying to translate the crystal shape to the molecular level  
Doos: the lattice structure will be the purest form  
Frank: When the molecules line up I assume they have (flat) faces at this level...ie no cathedral roof ends  
Frank: sorry for the typing  
Doos: I would think so  
Doos: a prism like structure  
Frank: So if you have an octahedron  
Annie: flat - you mean pinacoid  
Frank: but the faces are not equal...like a rectangle with only small bits taken from the corners  
Frank: yes annie  
Frank: will this outer shape continue into the matrix  
Annie: ok, just wanted to make sure, because the roof ends are pyramids or  
Doos: an octahedron is cubic .. is that what you are talking about?  
Doos: the lattice will be cubic  
Frank: OK sorry I'll rephrase this.  
Annie: ok

Annie: just gona get some coffee, so i am waky waky  
Frank: Some of the crystal shapes I've been looking at are tall prism shapes where the corners appear to be shaved of  
Doos: if you look at an egyptian pyramid from a distance, it looks like a perfect half of an octahedron ..  
but if you come closer you see that it is stepped  
Frank: this results in a plan view where the sides are not of equal size  
Frank: this means that if you tried to fit paper models of them together there would be small spces where they didn't quite meet  
Frank: If you then stacked lots of these things on top of each other to make models of crystals  
Annie: ok,  
Frank: You would have some sort of geometric "straws" running through the model  
Frank: in between the crystals  
Annie: you are actually looking at real life samples or crystals, Frank  
Annie: thats good, because although as we know the octahedron having 4 equal triangles on top and bottom  
Frank: Most of this comes from looking at the crystal diagrams in the schumann book  
Annie: with sharp corners  
Annie: yes  
Frank: and thinking "but that shape wont join exactly with other identical crystals  
Frank: then thinking maybe this is what causes fracture planes  
Annie: some octahedrons will look distorted when they come out of ground in real life  
Frank: but maybe I just have it all wrong  
Frank: will the distortion be identical to the molecular level or is it just surface?  
Doos: well a diamind has perfect octohedral cleavage, so you are not thinking wrong  
Annie: just on the surface they may look distorted  
Annie: but inner moluclar levels and structure of growth is the same  
Annie: never will change because of the bonds within that crystals  
Annie: do you go to gem shows, Frank  
Frank: OK This is a subject that keeps getting deeper and deeper ...how deep should I go?  
Doos: till we don't know any more either  
Frank: I never have but I'm planning to start  
Frank: Ok doos...thats good cause I'm really enjoying it  
Annie: ok, if you don't have real life specimens, its good to go to gemshows and look at crystals there  
Annie: too much information is never enough, Frank, never feel like that  
Annie: we enjoy it too  
Doos: Frank: let me see if I understand you correct .. you want to know why an octahedron has angled faces while it is cubic (in the case of a diamond)?  
Frank: yes and no...  
Doos: if it it yes, then I need to do the egyptian pyramid example again  
Frank: What I'm looking at are crystal shapes that sometime dont appear to "fit" together too well  
Frank: not necessary octahedrons  
Frank: poor choice of example maybe

Doos: you mean the weird ending on the prisms?  
Frank: no  
Annie: you mean why does a dodecahedron look different from octahedron  
Frank: No what I'm saying is that lots of the crystal diagrams show shapes like ditetragonal  
Frank: but the sides of the prism are different widths  
Doos: orthorhombic?  
Doos: like a matchbox?  
Frank: which means they wouldn't fit together  
Annie: hello  
Frank: all the systems seem to have examples  
Annie: my computer froze, sorry,  
Annie: its working now  
Frank: Like annie said if it's only surface distortion then it's a nul question  
Doos: I must not have understood it  
Frank: Do you have Schumanns gemstones of the world?  
Doos: no  
Annie: yes  
Annie: hang on, what page you looking  
Frank: I'm looking at a rhodonite crystal (random sample) it is triclinic but one of the two diagrams isn't modular  
Frank: pp 168  
Annie: ok  
Annie: check  
Frank: how can a crystal not be modular?  
Frank: I mean fit together without spaces  
Annie: ok,  
Annie: rhodonite is in triclinic  
Frank: yes  
Annie: so it will have other forms  
Annie: and combinations  
Annie: all axes angles are all inclined  
Frank: Yes but surely a crystal has to be mathematically "modular"  
Annie: so therefore it would look matchbox but squashed or slanting in two directions  
Annie: the picture in schuman of the rhodonite crystal,  
Annie: Frank is showing somewhat a perfect crystal  
Frank: what about the picture below that?  
Annie: there are two crystals on that page, rhodocrosite on top  
Annie: and rhodonite on bottom  
Frank: with the corners shaved off  
Frank: yes its the rhodonite picture  
Annie: the shaved corners are another form that is enclosing that space  
Annie: see the main long tall bit is prism  
Frank: is this continued in the crystal structure?  
Annie: the small rectangular bits next to the prisms are side pinacoids  
Annie: yes  
Annie: and then the shaved bits on top that are like roofs are your domes  
Annie: and also in the bottom as well  
Frank: If I got four of these of identical size and shape and put them together in 2 rows of 2  
Annie: so this triclinic system has nearly 3 forms that make up this crystal shape  
Annie: or (habit) of this crystal

Frank: there would be a place where the four prism ends lined up that would have a space between the 4 crystals

Doos: why would a crystal do that, unless it's twinning

Annie: hang on i didn't understand your last question

Annie: Frank, if we had a real crystal and you turn your crystal between your fingers

Frank: I dont know if it will do it doos...looks like it from the pictue though

Frank: yes

Annie: although it might not have a perfect look to it as your picture

Annie: one would look for those and

Annie: work out what it might belong to

Annie: although, the triclinic system is weird and strange

Annie: as it does not have any places, no axes

Annie: but only 1 centre if you rotate it

Annie: but what i would look for

Annie: is that if i can make up any domes or pinacoid when i look at that particular crystal

Annie: will never be like the textbook version,

Frank: what do you mean make up?

Annie: so its a bit tricky and things could be missing

Annie: well, first is to look for prisms are there

Annie: may be not slim and slender but sort of slanting

Frank: pinacoids? can you give me a simple definition?

Doos: two parrale planes

Annie: pinacoids are parallel pairs of similar faces cuting one axis and to other ones

Annie: so if i was to make up a dome from it (on the top

Annie: i would have to find the pinacoids first on the sides

Annie: because domes usually come off side pinacoids to make it into a roof like

Frank: so a hexagonal crystal would have 3 pinacoids.. and a cubic two?

Annie: and if it were to come off the prism (the trianglur or some sort) it would be a pyramid

Doos: uh no

Annie: no

Annie: hexagonal is different

Annie: i was explaining triclinic

Doos: a cube has no prisms and a hexagonal prism has one pinacoid

Frank: pinacoids are not normal crystal faces?

Doos: cubics are "closed" forms

Doos: hexagonal forns are "open" forms

Annie: cubic is only one form which can enclose one whole shape

Annie: remember i said before the domes or pyramids enclose a space

Doos: open forms are deterimed by a pinacoid or some other kind of ending

Annie: so therefore these being open forms

Annie: does that make sense or have we confused you now

Annie: we can explain again, if it didn't make sense

Frank: it's comming

Frank: please

Annie: it doesn't matter how much explaining needs

Annie: as long as one can understand

Doos: let me make it easier for you frank, the other part of a matchbox is an open form, if you close the

two outer ends with pieces of paper .. the two pieces of paper form a pinacoid

Frank: so it's a sort of termination point

Doos: yes  
Annie: yes it needs something on ends to close it  
Frank: where growth stops  
Annie: cubic is already closed - it does not need any other form  
Annie: one form  
Doos: where I said "other part" I meant "outer part" but you understood that  
Frank: and the parellel faces are at opposite ends ofthe prism  
Frank: Annie is the cubic closed because all faces have to grow at the same rate  
Annie: yes  
Annie: if we could measure it, they all would be the same temperature growth  
Annie: Doos, you need to do the other systems, as well  
Frank: yes  
Doos: I guess  
Frank: didn't know how to ask annie  
Annie: because i think it would help  
Annie: its fine, we are getting there  
Frank: but I understand the hexagonal better than the rest  
Annie: yes,  
Frank: because of yey.com  
Doos: I'll start doing the -clinics first then, since they are the hardest  
Annie: thats good  
Annie: yey  
Doos: heh  
Annie: yes  
Frank: yes  
Doos: yey.be  
Annie: yes on yey.be  
Frank: desole  
Annie: wowww  
Doos: what happened?  
Frank: when you publish it as a students book I'll but the first one  
Annie: i mean it not exactly we are in classroom situation, we we would draw on the blackboard and explain  
Annie: but the pictures would help  
Frank: such a lot of work doos...but it's the best explanation I've found after searching for a week on the net  
Doos: thanks, it really is not so much work once you have the first picture done  
Frank: I've been trying to do the rest of them a la doos  
Annie: ok, Doos, I expect you to get on this asap  
Frank: ooh beat him annie  
Doos: lol I will  
Annie:  
Doos: I'm getting pussywhipped  
Annie: swoosh  
Frank: Ok have you had enough yet?  
Doos: yes sir  
Doos: call of the madam  
Annie: its getting late there  
Frank: not of the whipping doos...you dutch love all that stuff  
Annie: to Sir, with Love  
Annie: if that has helped  
Annie: and it will make sense later. ... FRANK  
Annie: oops, sorry Frank

Frank: yes I've got a lot to think about and some stuff to look up....I've been taking notes  
Doos: it's logged frank  
Annie: ok, thats good  
Frank: lol take notes then decide whether to type them up or move to the next think  
Doos: ah ok  
Doos: I'm glad I didn't have to do this on my own today  
Doos: you are a tutors worst nightmare  
Annie: oh, i would never leave it, first kill it to death before moving on  
Frank: lol wait till I learn all the jargon  
Annie: yeah, then the jargons start  
Annie: thats a killer too,...  
Guest4031 entered the room.  
Frank: yes  
Annie: hello  
Frank: hi guest  
Annie: welcome  
Doos: I always said "there is nothing worse than a tutor who knows just enough to teach" guess that applies to me now  
Doos: hi gues  
Annie: welcome to our guest  
Frank: Your too modest doos.... you have a real knack for online teacheing  
Annie: yeah he is great  
Annie: well, Doos, the great  
Frank: can you teach spelling...lol  
Doos: heh  
Frank: Annie thanks to you too  
Annie: you are very welcome Frank  
Annie: no need for thanks  
Doos: who is our mysterie guest?  
Frank: what shall we do next week?  
Doos: anything you like  
Annie: whatever you like  
Annie: but there has to be a flow  
Annie: so it doesn't get too confusing  
Annie: hello guest  
Frank: yes you've done this longer than me...I'll follow your lead on what order to do things  
Doos: optics is next on the list I think, but I lost track a bit  
Frank: some things are quick and easy. Others (like crystallography will be ongoing for years  
Annie: one of the hardest subject, I reackon  
Annie: so revisions are vital and good  
Frank: interesting though  
Annie: and re-reading and rewriting and drawing  
Frank: is crystal shape/habit/form ever diagnostic on it's own  
Annie: hmm.. oh yeah  
Frank: Doos I don't like to take over. I'm happy to keep following jens course if I can have an occasional week when I get stuck  
Guest4031 has left the room.  
Annie: oh, that will be fine, Frank  
Annie: now you scared the guest again, Doos

Doos: you can stray all you want, no avoiding that .. we are here for everyone at any level  
Doos: yah, I guess I did  
Frank: So are we doing optics next week?  
Annie:  
Doos: I'm not sure .. can you remember where we were Annie?  
Annie: ok, i will check  
Frank: last week was refraction  
Annie: good, yes we did refraction  
Doos: oh yes  
Guest4046 entered the room.  
Annie: hello again, guest  
Frank: hi guest  
Doos: I think Jen and Gemma are at chapter 6 of the cgi course  
Frank: which is what?  
Doos: dunno  
Frank: lol  
Doos: hehe  
Annie: yes, i think it was chapter 6 on optics  
Annie: yes, DEFINitely  
Frank: ok what should I study  
Doos: reflection, refraction, TIR  
Doos: snell's law  
Annie: homework: read up on , , , ,  
Annie: the nature of light  
Annie: guest, you are keeping us in suspense  
Frank: I'm not in suspense ...I'm waiting him/her out  
Frank: lol  
Doos: frank did you read the post about where light goes after refraction?  
Frank: yes... lay awake for hours trying to make the question make sense  
Doos: lol  
Frank: like where does the light go when it's switched off  
Annie: doos, did you ask, what happens to light -  
Annie: does it die off ?  
Doos: it gets transformed in other energy, like heat  
Annie: heat  
Doos: uh yes  
Annie: well,  
Frank: I think that most of it just recombines into the ambient light  
Annie: energy is all around us in some form or rather  
Doos: energy will get fun in phosphorescence  
Annie: that we know what happens to opal when lights are switched off  
Doos: if we get to that point I definitely need to make pictures  
Annie: yes  
Frank: I'll think up some suitable questions for that lesson doos...what happens to opal annie  
Frank: is it phosphorescent?  
Annie: that's so special in opals  
Guest4046 has left the room.  
Annie: fluorescence and/or phosphorescence is the result of UV radiation absorbed by impurities or structural defects within the crystal structure, resulting in an oscillation of electrons between energy levels, and transmission of visible light.  
Doos: by guest, till in a bit

Annie: what are they peaking in on us for ???

Doos: heh

Frank: Are opals special in this regard?

Annie: i will be mad

Doos: maybe my mommy to see if I go to bed in time

Annie:

Annie: maybe mum

Annie: oh well doos , you will need to get to bed soon, so she comes to see if you are drinking your glass of milk

Annie: lol

Doos: heh yes

Doos: I dunno much about opals frank

Annie: i better head off soon, gotta get some breakfast, otherwise i will faint

Doos: okay, shall we stop for the day?

Annie: we had much fun

Frank: Yes. Thanks you both very much. I'm off to bed. ...questions on this subject...to be continued

Doos: okay, till soon again then

Annie: yes, to be continued

Doos: bye to you both

Doos: (I'm going to log this now)

Frank: byeall

Annie: ok