

Re: Meanwhile, back in the lab...

Source: <http://sci.tech-archive.net/Archive/sci.physics/2005-05/msg02652.html>

- *From:* mmeron@xxxxxxxxxxxxxxxxxxxx
 - *Date:* Thu, 19 May 2005 19:42:19 GMT
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In article <d6i7e3\$h7v\$1@xxxxxxxxxxxxxxxxxxxxxxxx>, glhansen@xxxxxxxxxxxxxxxxxxxxxxxx (Gregory L. Hansen) writes:

>In article <1116467397.252775.237190@xxxxxxxxxxxxxxxxxxxxxxxx>,

>Sbharris[at]ix.netcom.com <sbharris@xxxxxxxxxxxx> wrote:

>>Greg, was my last question to you too difficult to answer off hand?

>>

>>The question I have is this: what happens when you run "few mev"

>>protons or neutrons through single crystals of (say) graphite at small

>>angles in comparison to the plane defined by the sheets of C atoms.

>>With the beam passing orthogonally (the 001 direction) through the

>>common plane defined by the stacked sheets, you'd get one attenuation

>>coefficient. And presumably at right angles to that, so the particles

>>were passing straight down the "alleys" between the sheets (the 112

>>direction) you'd get another coefficient. In both cases these would

>>related to the average density of the crystal in the direction of

>>interest. But now, what happens when you tilt the thing just a little

>>in either direction from 112??? Do the particles now go off greatly to

>>one side or the other? And is the effective shielding coefficient per

>>mass a LOT greater in the direction where the particles DON'T go, than

>>you could get with other materials?

>>

>

>

>Sorry, I didn't see it before. I search for "hansen", so that's a sure

>way to catch my attention. Otherwise, whether I read a message or not is

>more or less by chance.

>

>But the angle of incidence still equals the angle of reflection, and that

>angle is relative to a scattering plane. The Bragg peaks in an ideal

>crystal are delta functions, any real crystal has peaks of a certain

>width, the Darwin width(?), that depends on its size and quality.

Oh, no. The Darwin width of a perfect crystal with unlimited size is still finite. Imperfections, absorption and other issues may broaden it further but even an ideal crystal doesn't give a delta function.

Mati Meron | "When you argue with a fool,
meron@xxxxxxxxxxxxxxxxxxxx | chances are he is doing just the same"

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Re: Meanwhile, back in the lab...

- *Follow-Ups:*

- ◆ *Re: Meanwhile, back in the lab...*