

Interpreting LEED images

Source: <http://sci.tech-archive.net/Archive/sci.physics/2005-03/4136.html>

From: Andrew Stallard (astallard_at_regalman.com)

Date: 03/08/05

Date: 7 Mar 2005 19:16:11 -0800

have a set of two dimensional LEED images* of GaN(0001). The electron energies are known. I can make out the fringe patterns and the spots. However, I do not know the height of the electron gun so I can calculate the scattering angle.

The equation is:

$$n(\text{wavelength})=d \sin(\text{Angle})$$

$$n(\text{wavelength})=d \sqrt{h^2 + r^2}$$

Where n is the diffraction order, d is the distance between the atoms, r is the distance from one atom to the center of the beam, and h is height of the electron gun relative to the surface. I also know the initial beam diameter is 1 micrometer. I need to figure out the distance and the angle. Does anybody know how to interpret these diagrams?

* Unfortunately, I do not have a scanner so I can not upload a photograph.

Thank You for Responding:

Andrew Stallard