

X-Ray Powder Diffraction

Purpose:

The purpose of this experiment is to determine the crystal structure of two solid substances via X-ray powder diffraction patterns. We will determine:

1. the crystal system,
2. type of crystal lattice, and
3. dimensions of the unit cell.

Equipment and Chemicals:

Titanium (IV) oxide (anatase), and Titanium (IV) oxide (rutile).

Directions:

See the instructor for operating instructions for the XRD.

Calculations:

Determine x_i , θ , $\sin \theta$, λ , d , hkl , and a_0 .