

XRDUG Session 1

*Design and Set-up
of XRD Experiments*

Figures

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File: LaB6 11-9-06, ID: LaB6 660a std 11-9-06
Date: 11/11/88 08:15 Step : 0.015° Cnt Time: 10.000 Sec.
Range: 16.00 - 139.99 (Deg) Step Scan Rate : 0.00 Deg/min.

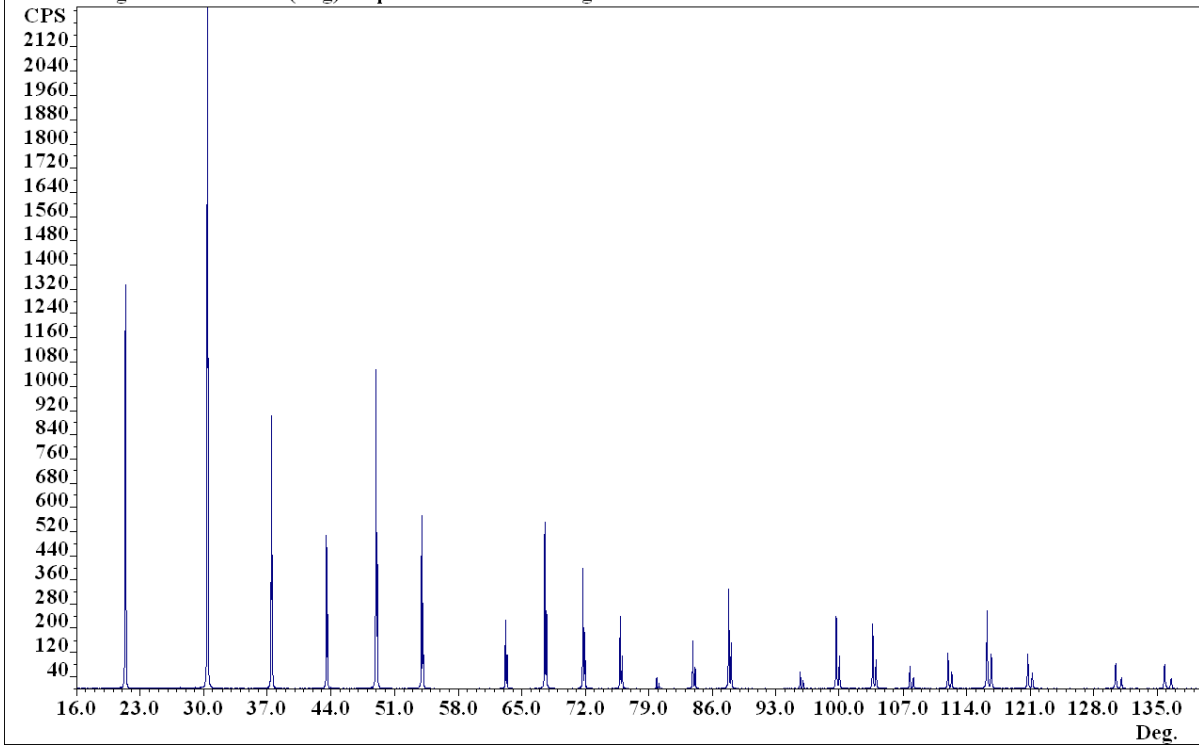


Figure 1 Example Single Phase

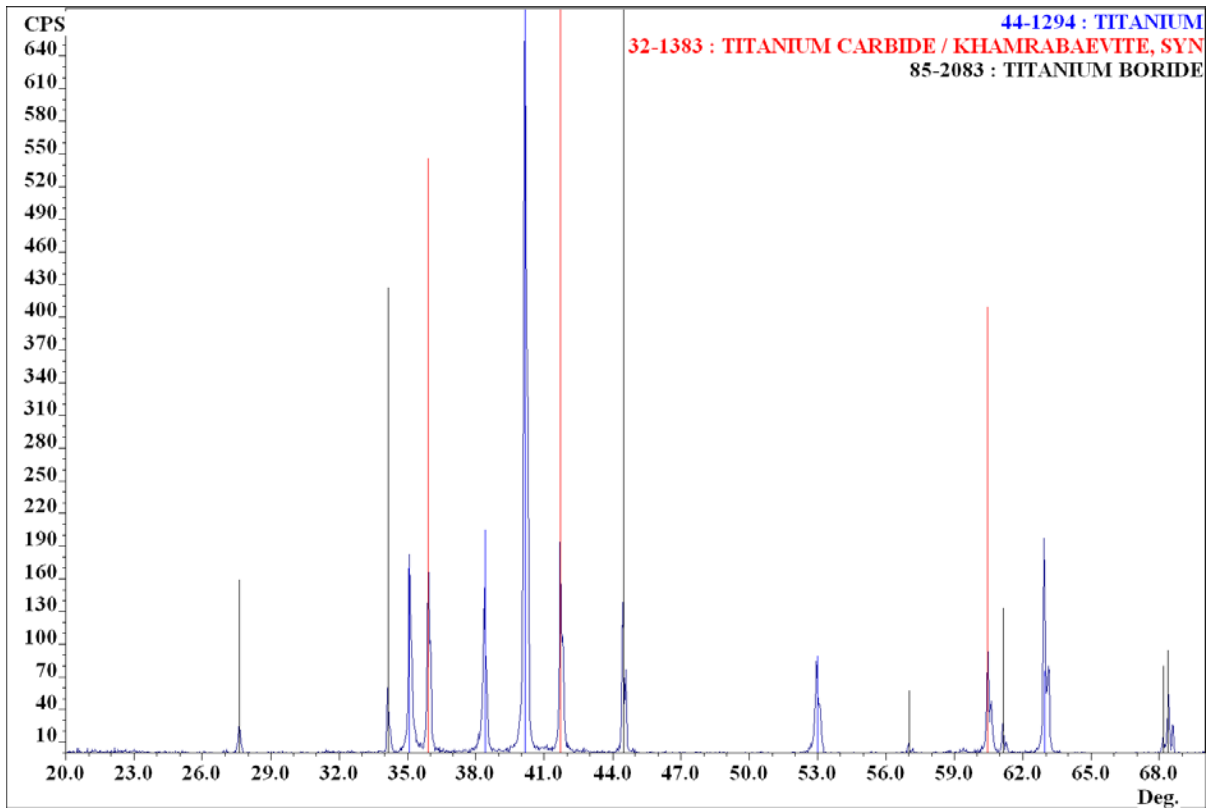


Figure 2 Example Multiphase

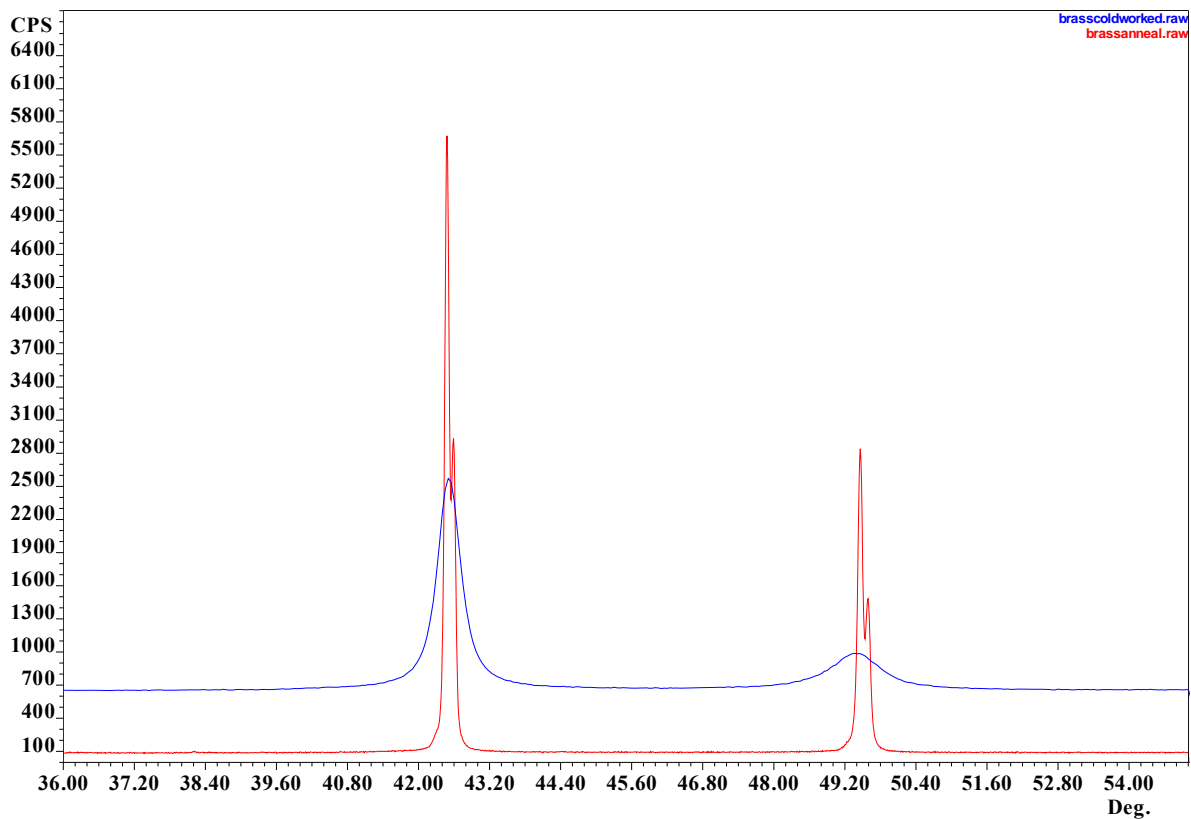


Figure 3 Example Peak Broadening

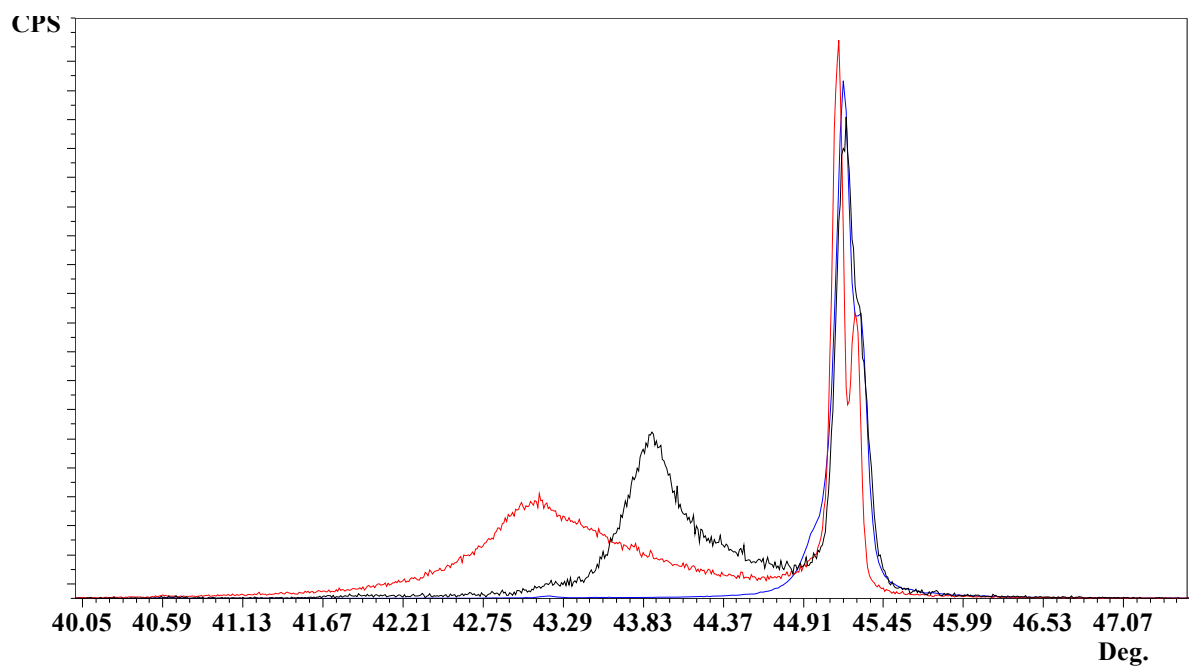


Figure 4 Example Unusual Atom Migration

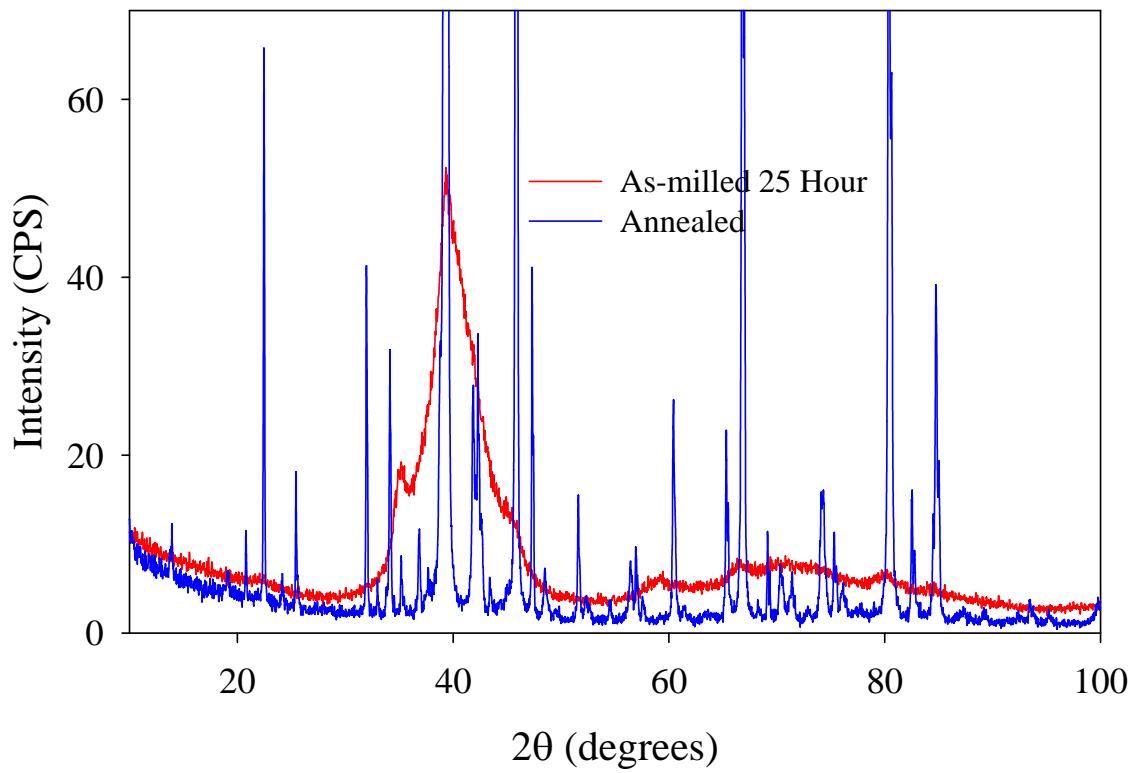


Figure 5 Example Unusual Background Scattering

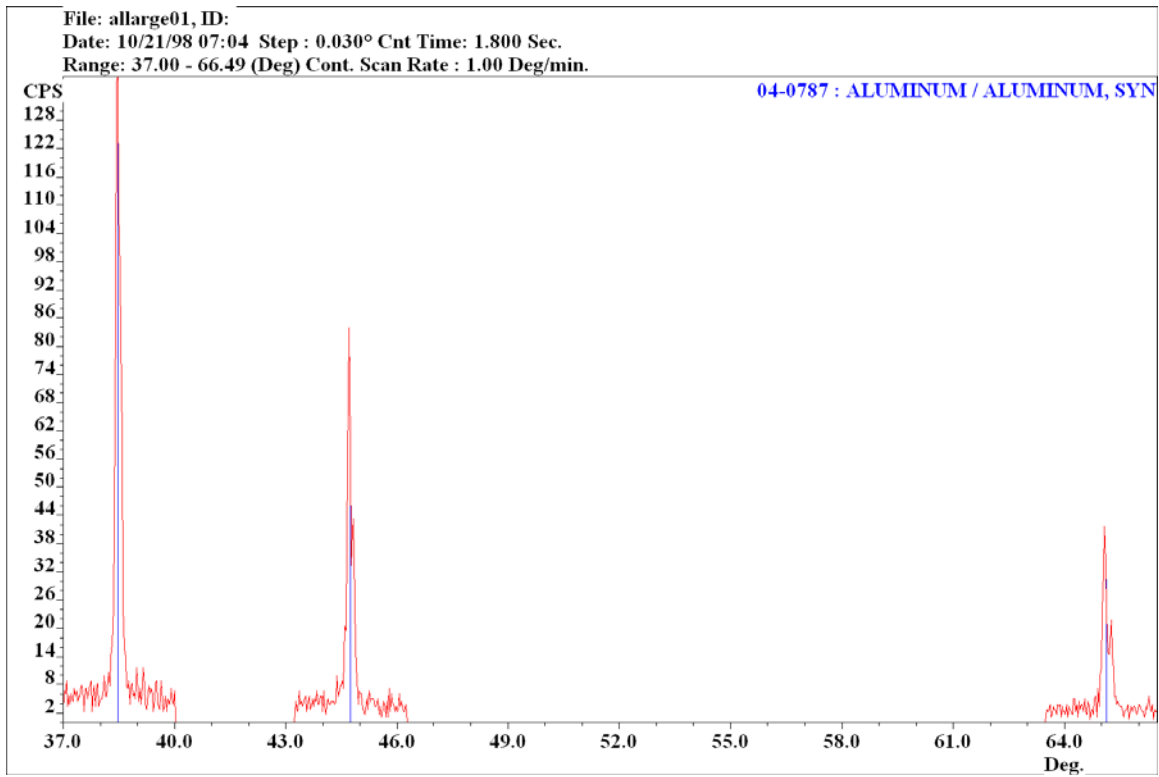


Figure 6 Large Grain Aluminum Sample

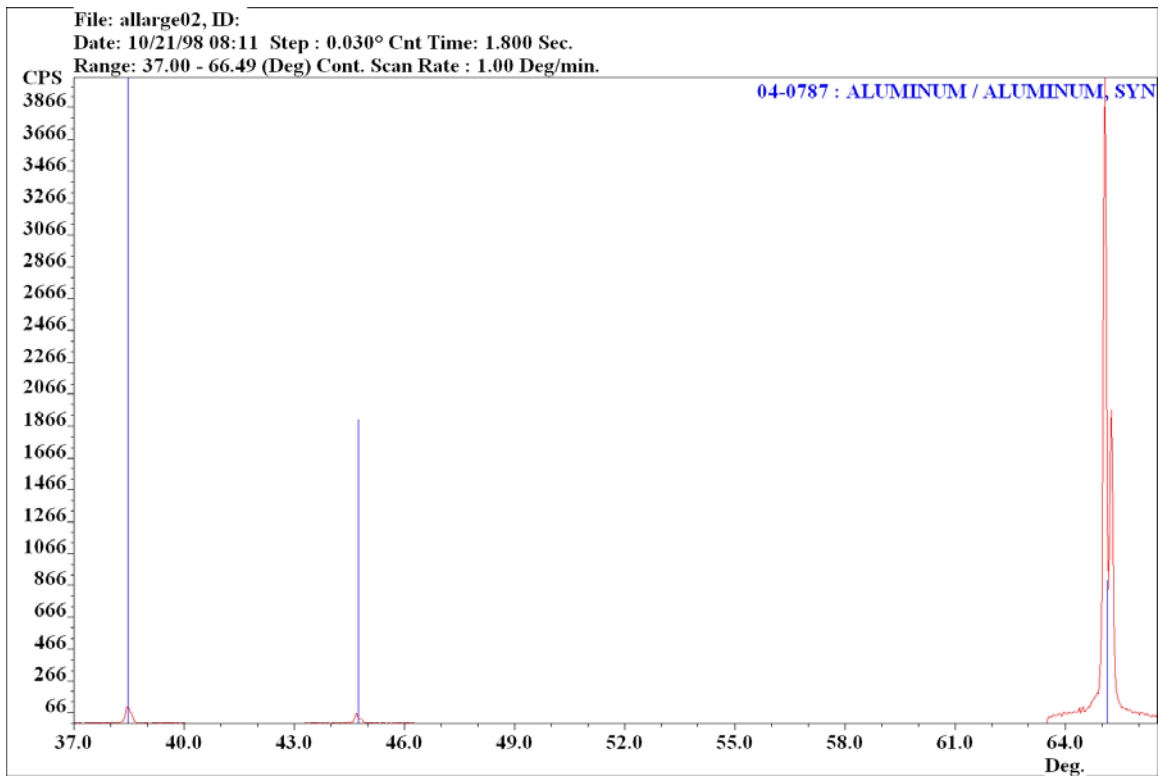


Figure 7 Large Grain Aluminum Sample Moved

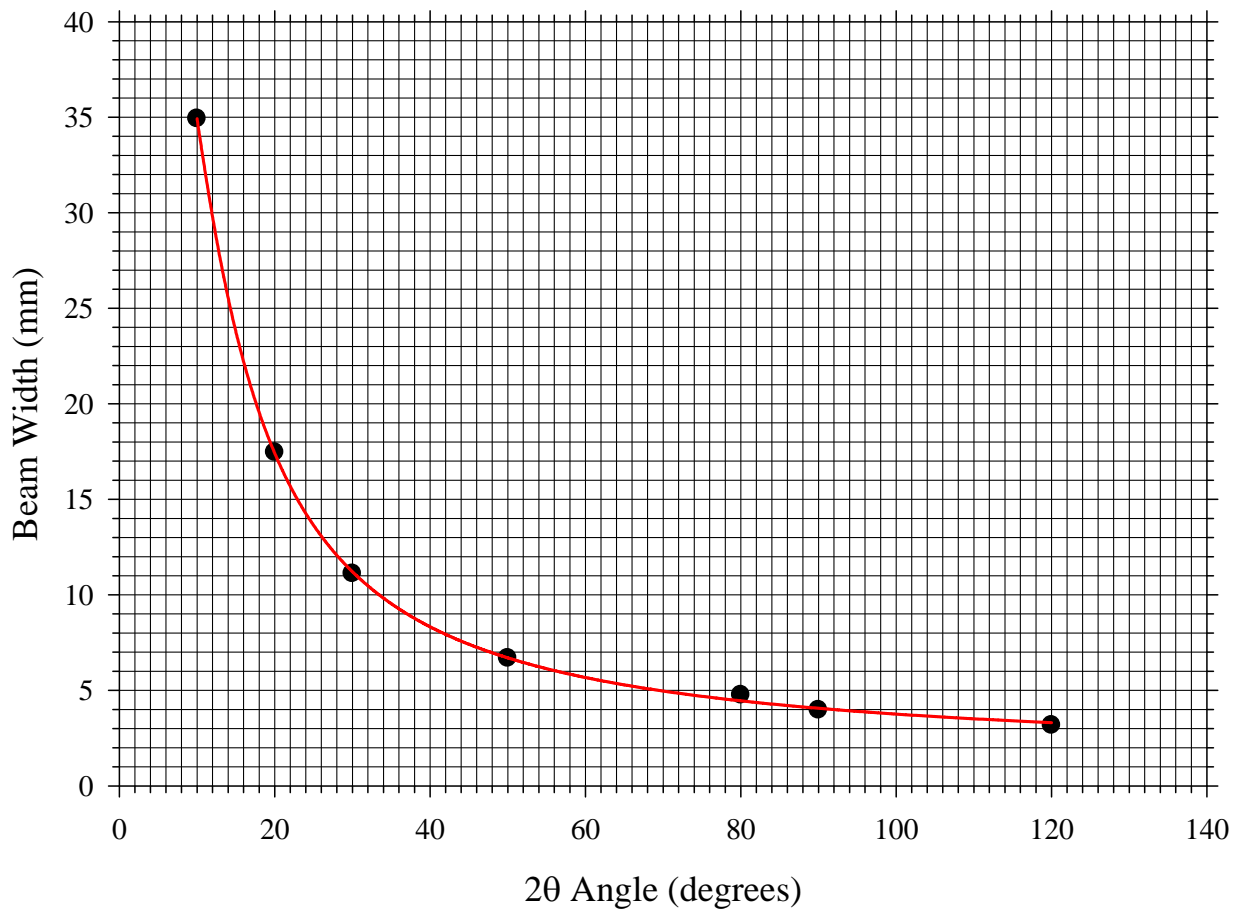


Figure 8 Variation of Beam Width with 2θ Angle

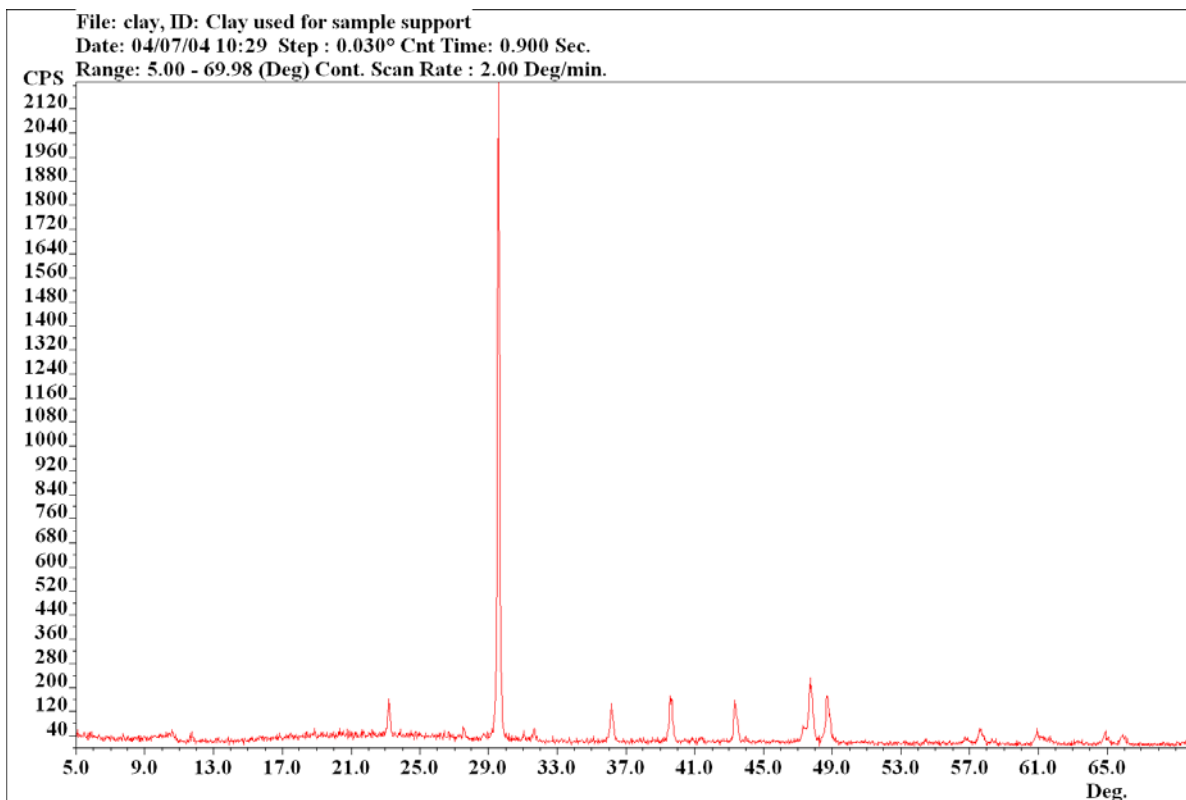


Figure 9 XRD Pattern of Mounting Clay

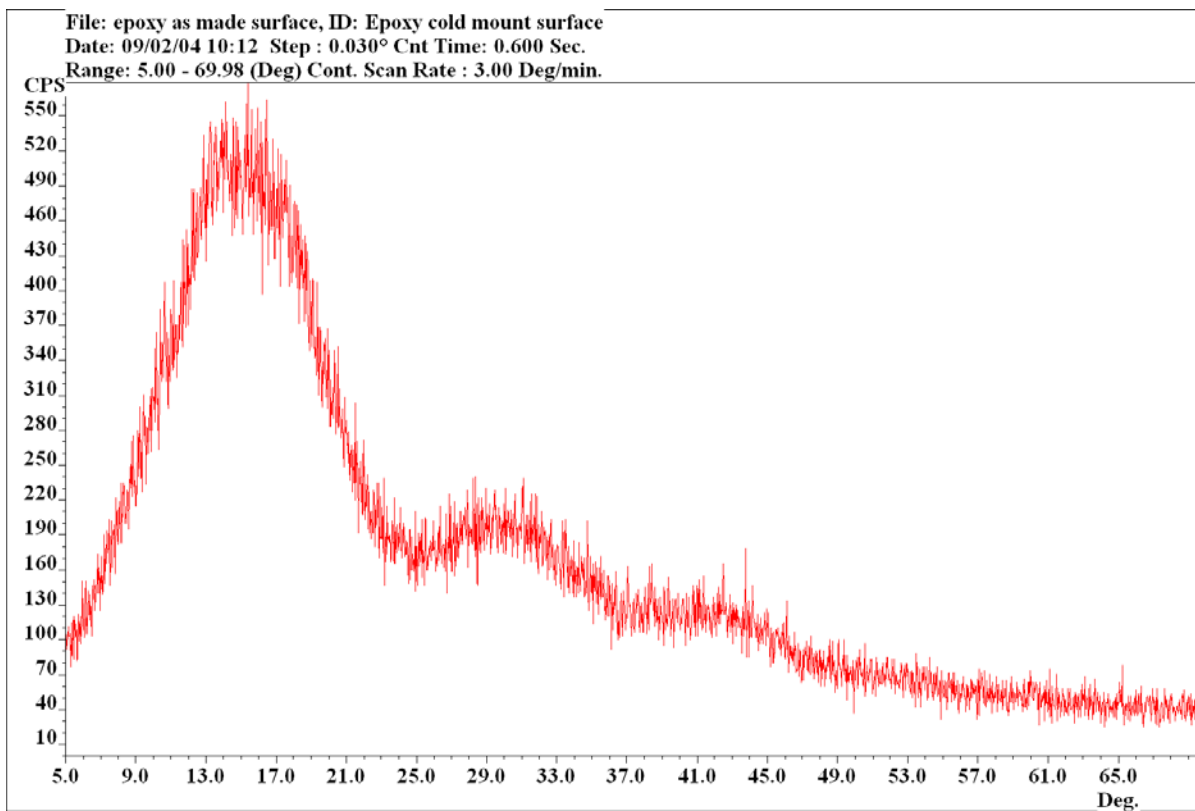


Figure 10 XRD Pattern of Epoxy Mount

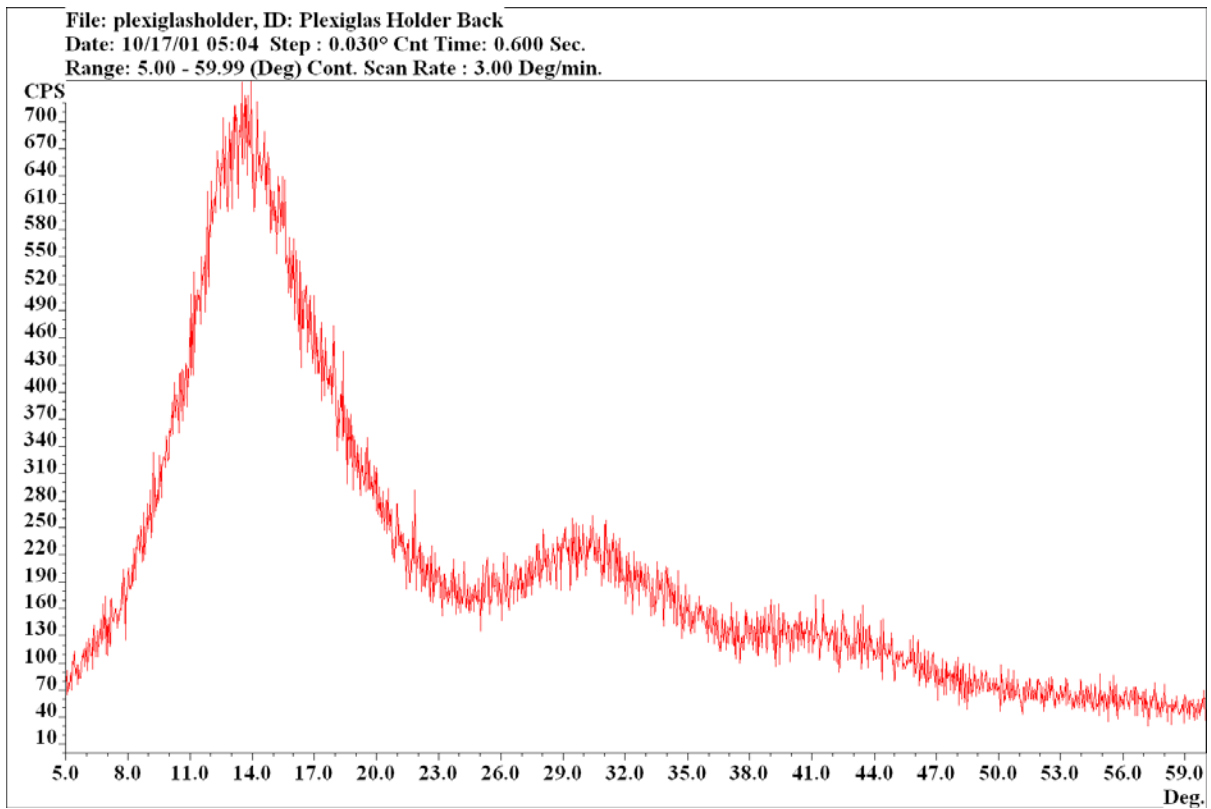


Figure 11 XRD Pattern of Plexiglas

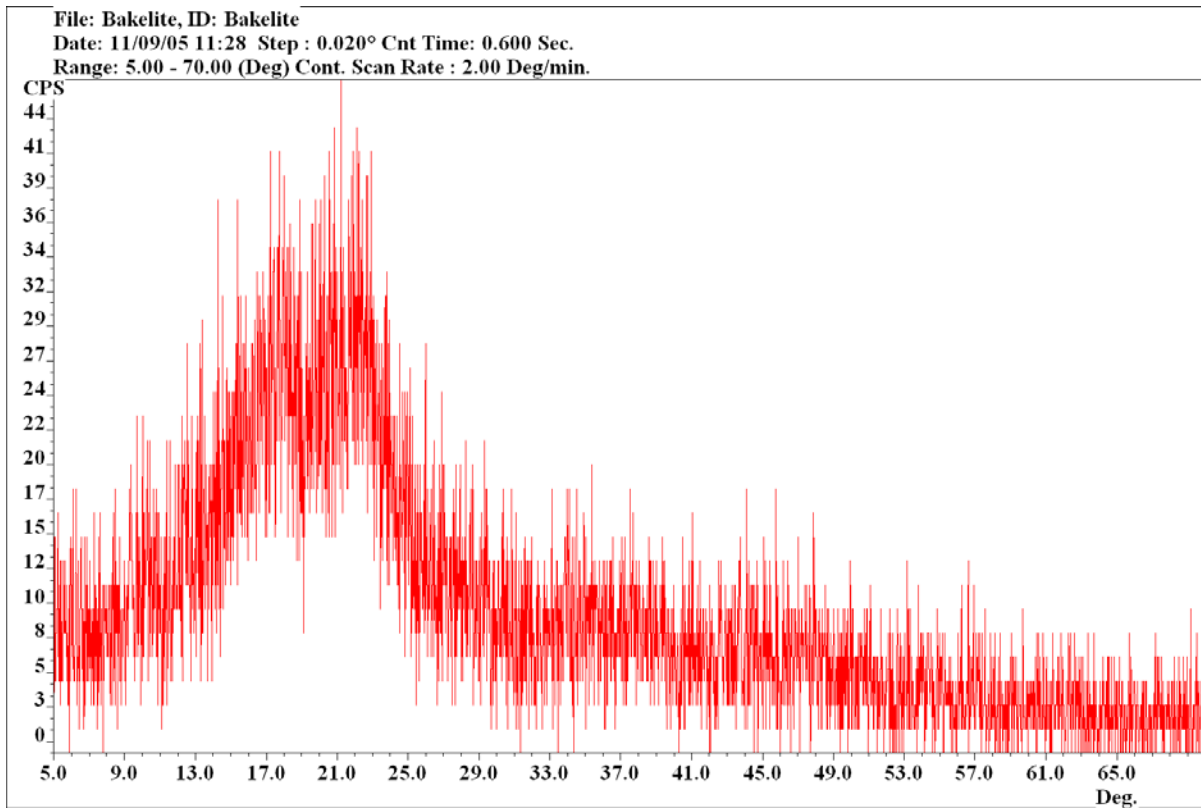


Figure 12 XRD Pattern of Bakelite

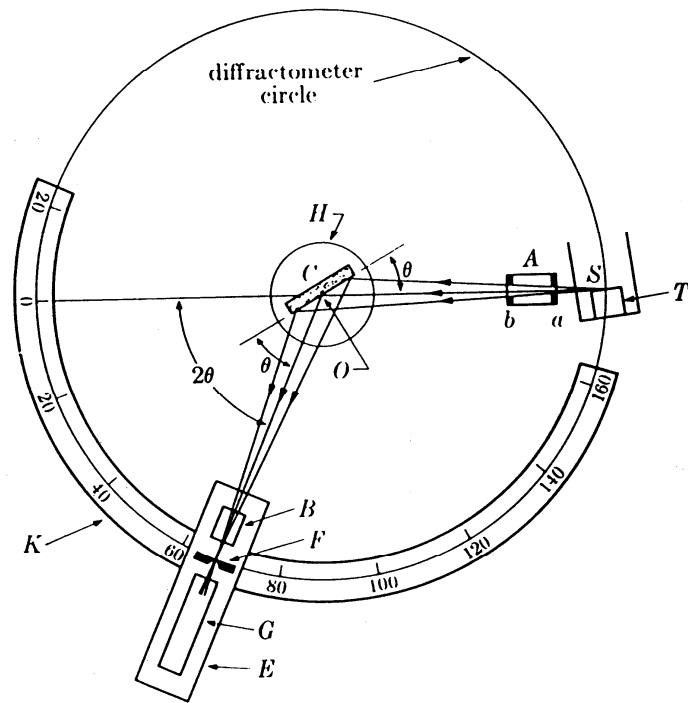


Figure 13 Goniometer Schematic

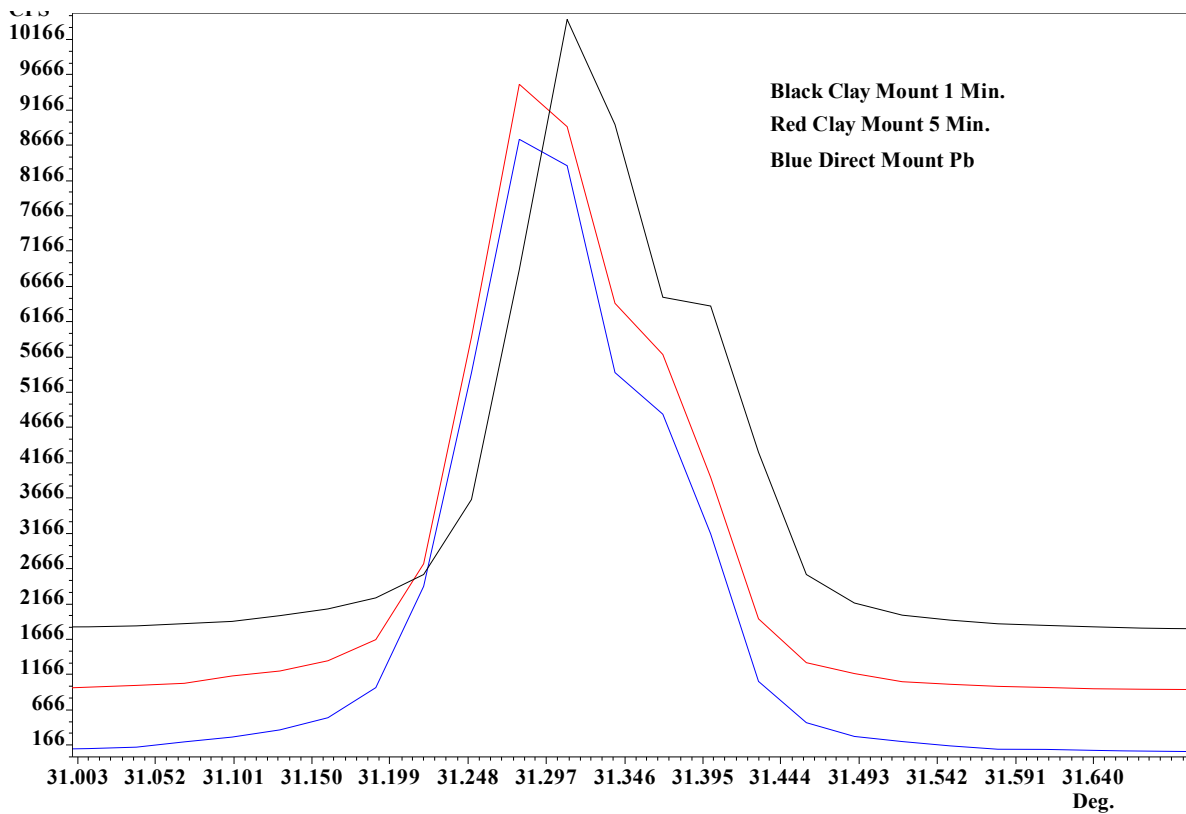


Figure 14 XRD Patterns of Pb Showing Displacement Error Issues with Clay Mount

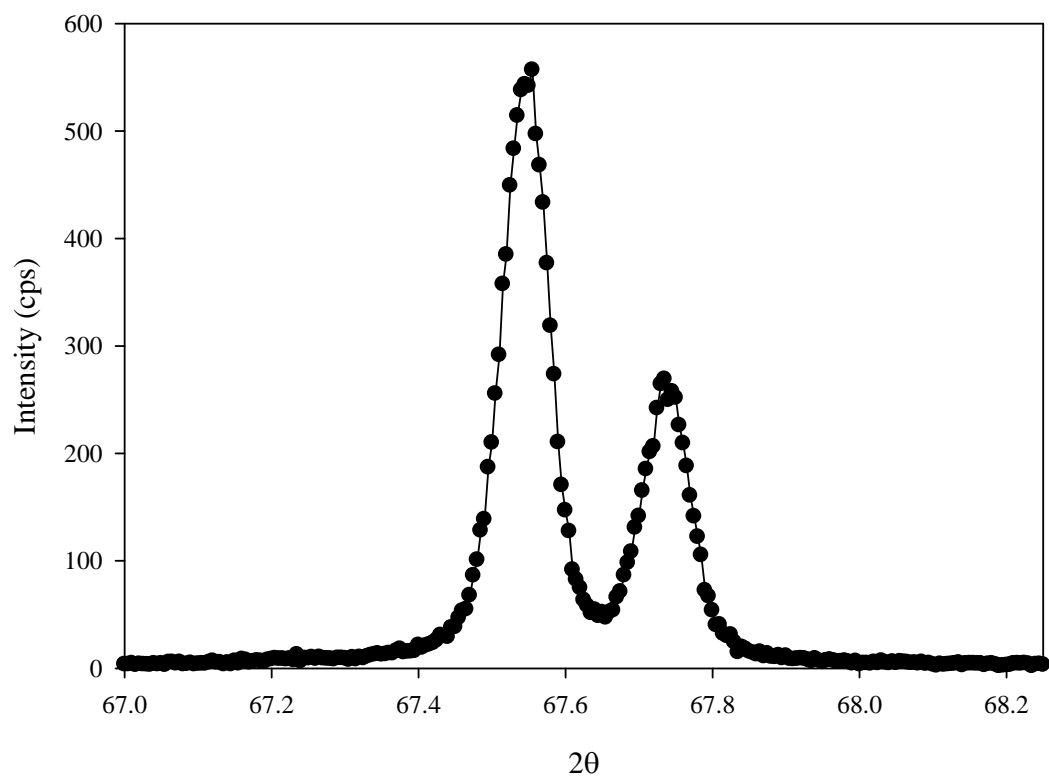


Figure 15 LaB₆ NIST Standard Step Size 0.005°

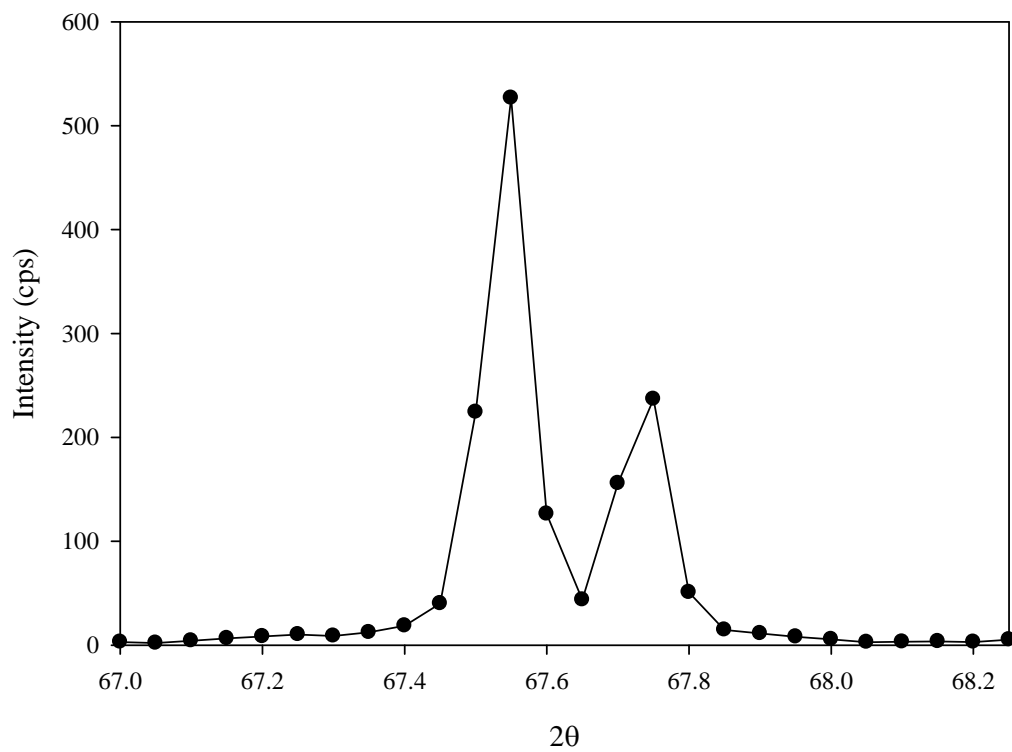


Figure 16 LaB₆ NIST Standard Step Size 0.05°

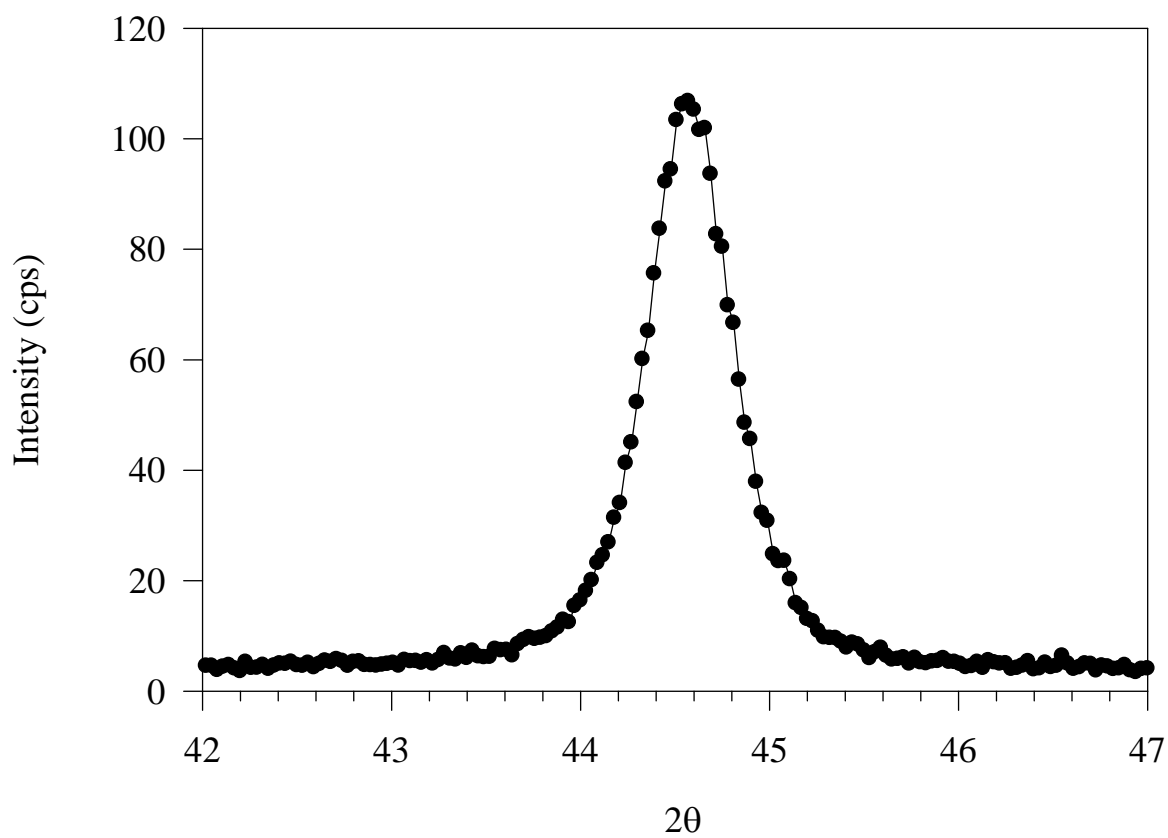


Figure 17 Mechanically Alloyed Iron

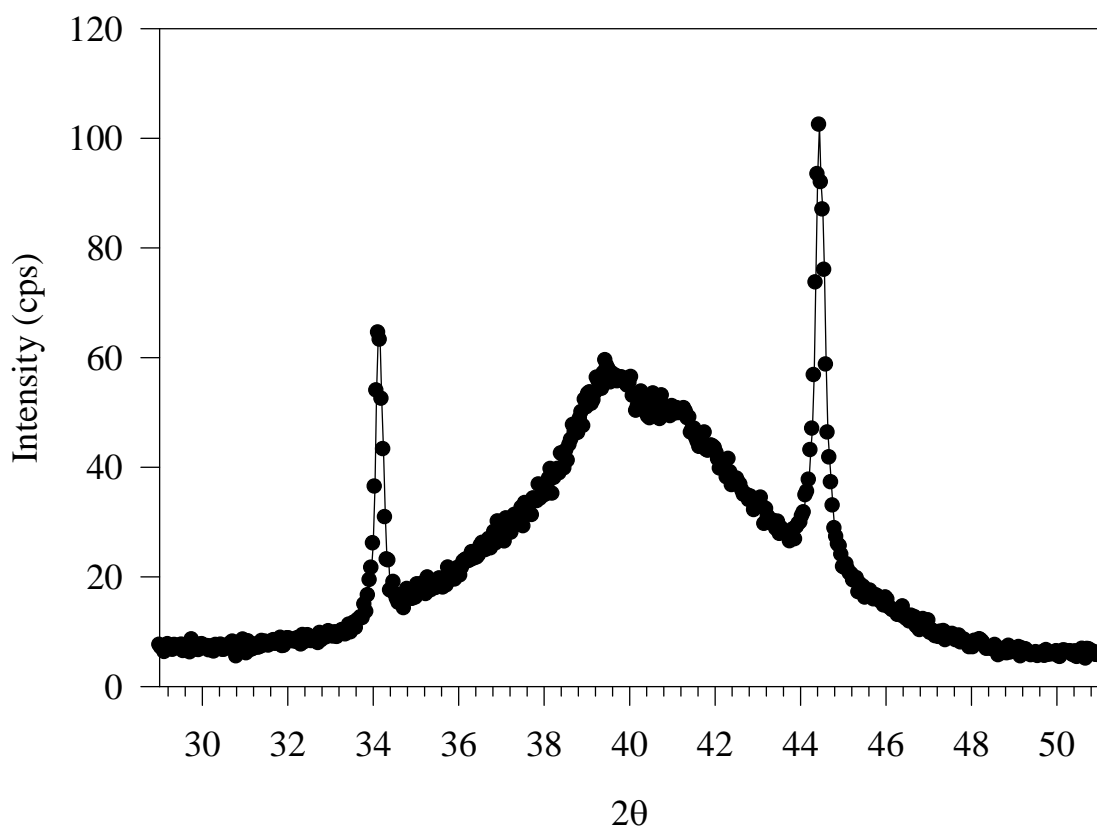


Figure 18 Mechanically Alloyed Al₃Ti with TiB₂

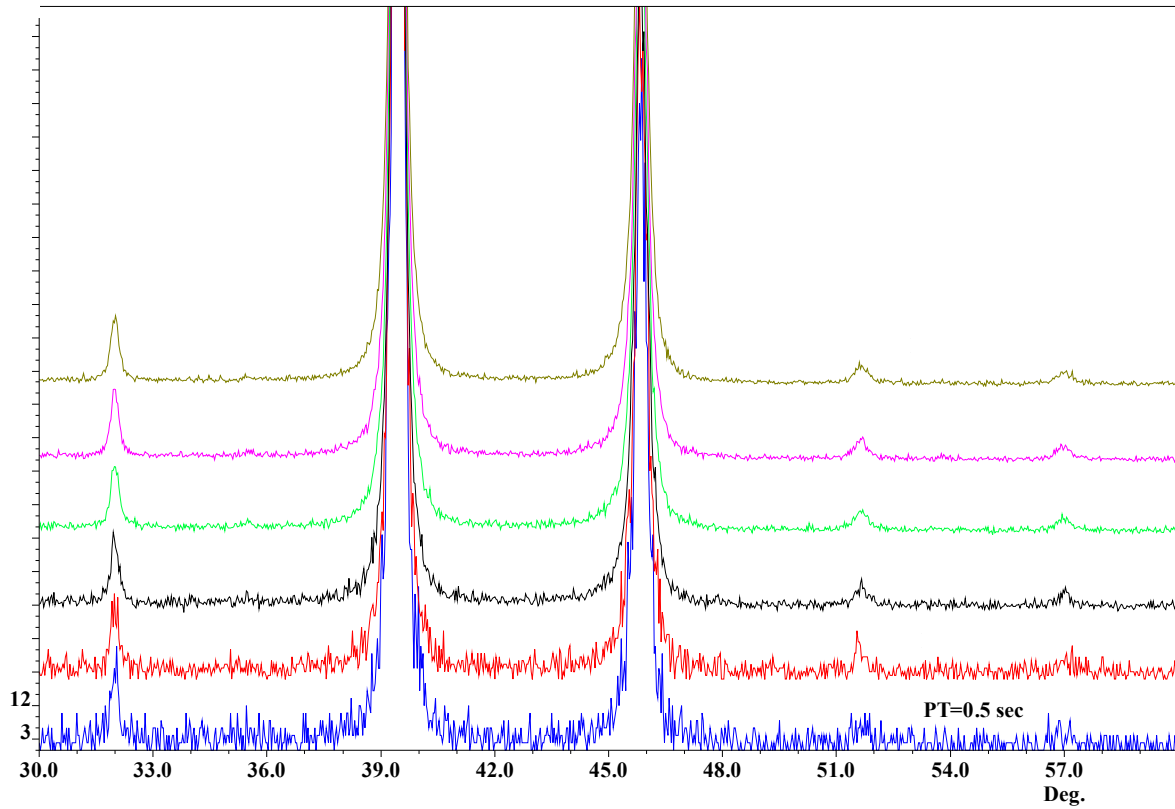


Figure 19 $\text{Al}_{67}\text{Cr}_9\text{Ti}_{25}$ XRD Pattern Data Collected at Different Preset Times

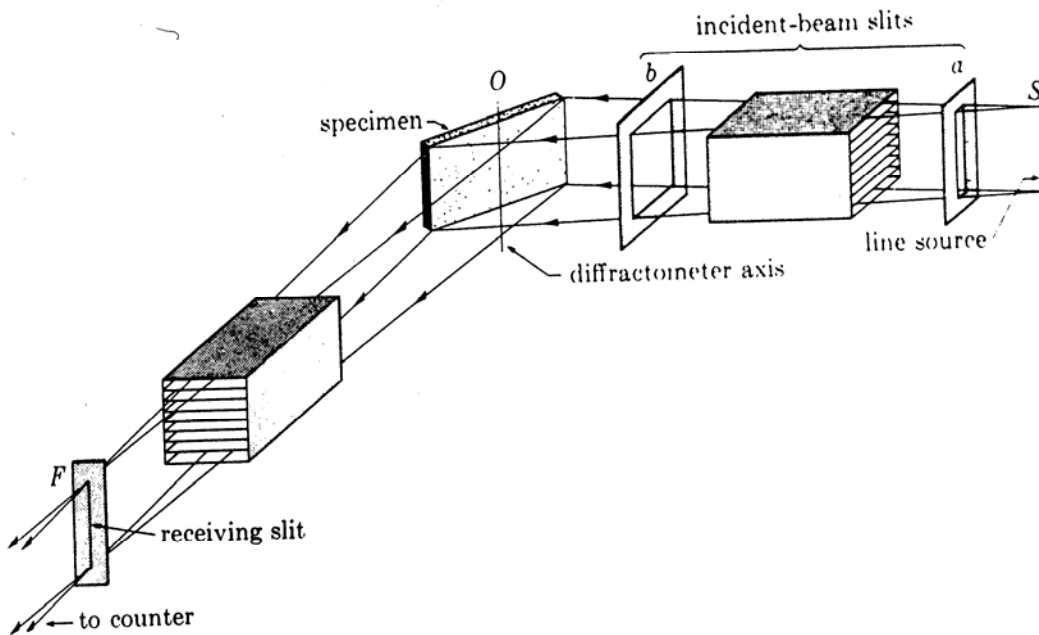


Figure 20 Basic XRD Goniometer Optics Arrangement

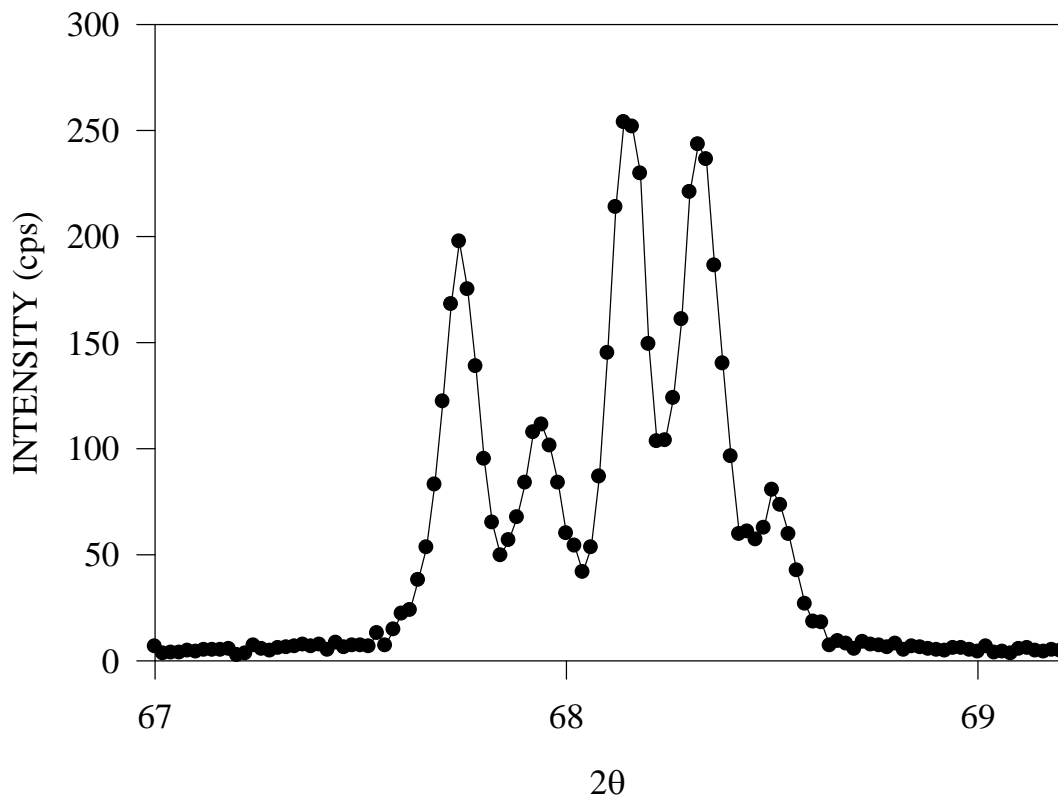


Figure 21 Five Fingers of Quartz Std. Slits 1, 2, 0.5, 0.3

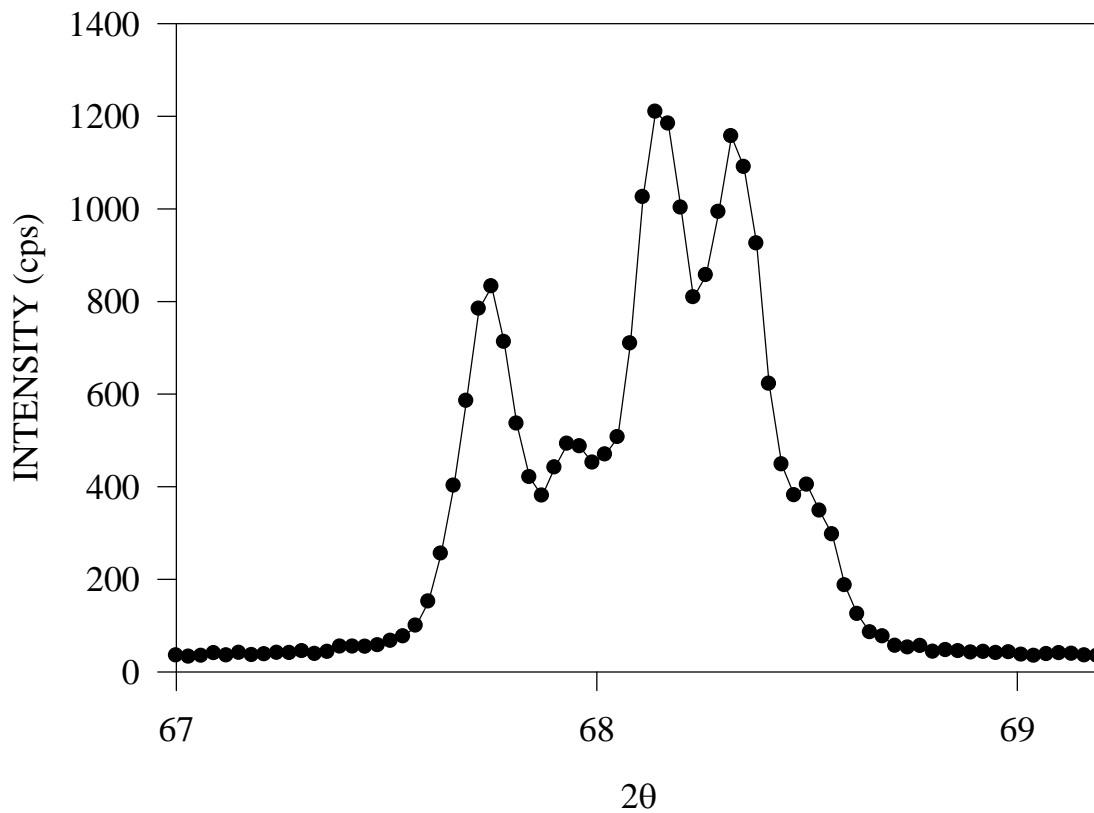


Figure 22 Five Fingers of Quartz Slits 3, 4, 2, 1

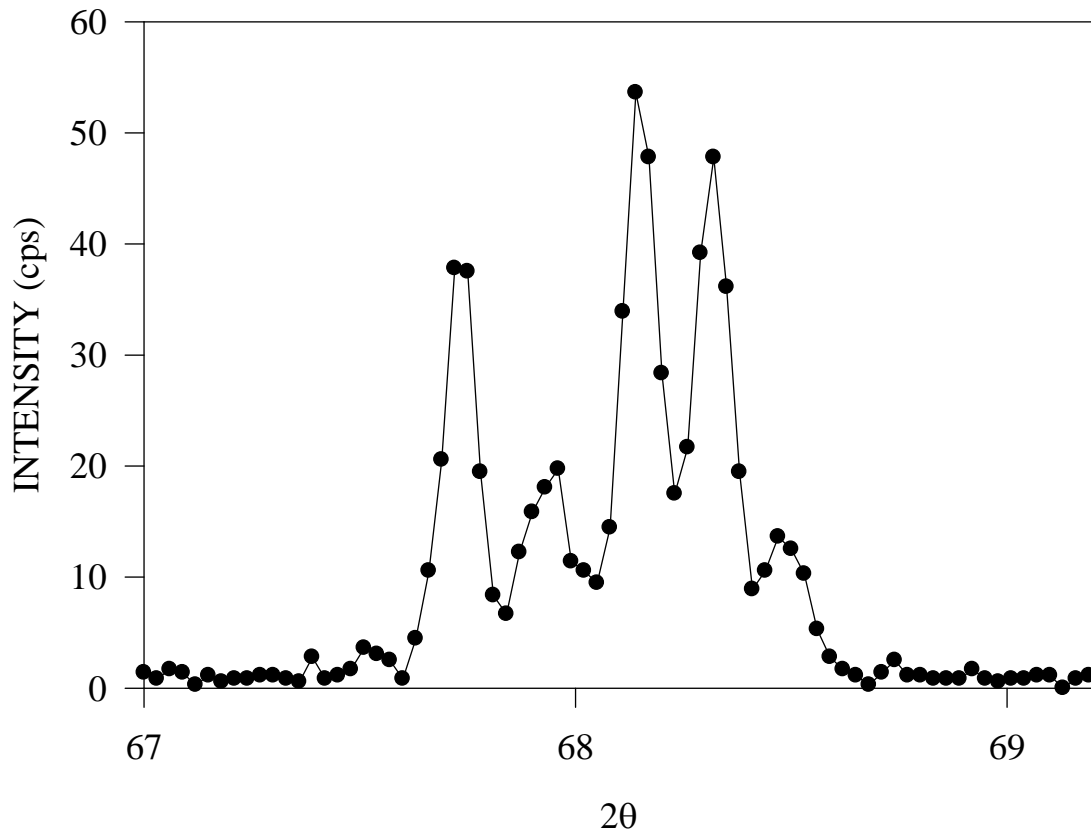


Figure 23 Five Fingers of Quartz Slits 0.5, 1, 0.3, 0.1