

1. 繪出所有(共 6 個)XRD 分析圖並用 JCPDF 資料庫說明其結晶結構並標示各訊號峰米勒指標(hkl)
2. 分析使用特徵 X 光 CaKa=0.154nm 計算各圖結構優選方位晶粒尺寸

$$T = \frac{0.9 \lambda}{B \cos \theta_B}$$

T = 晶粒尺寸

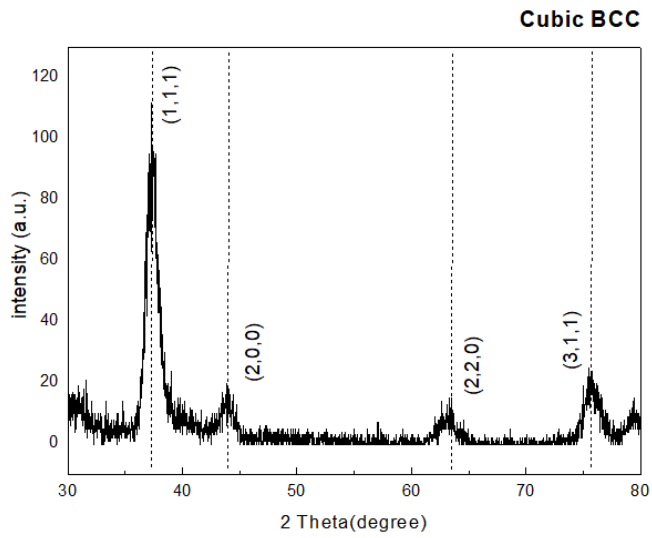
λ = X 光波長

$$B = \text{半高寬} = (\Delta 2\theta) \times \left(\frac{\pi}{180} \right)$$

圖檔格式：

1. X 軸: 2Theta (degree) Y 軸: Intensity (a.u.)
2. 上、左右邊框無刻度為單純線條，下邊刻度在圖內
3. 圖內使用文字標示結晶結構
4. 使用虛線標示訊號峰並在旁使用文字標示米勒指標(hkl)

1. C100

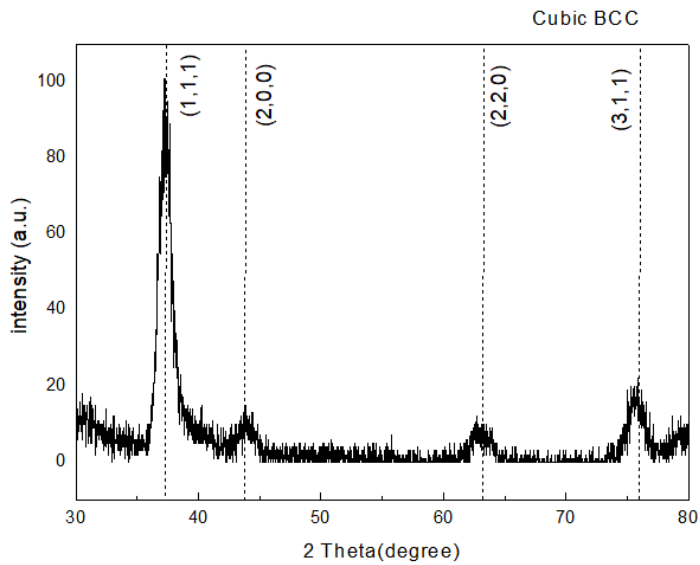


$$B = (38 - 36) * (\pi / 180) = 0.035$$

$$\theta_B = 19$$

$$T = (0.9 * 0.154n) / 0.035 * \cos 19 = 4.188 \times 10^{-12}$$

2. C250

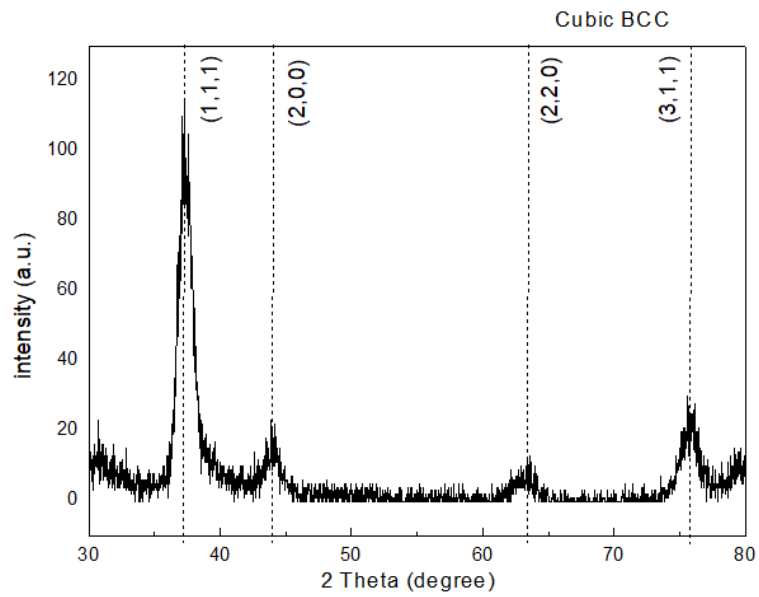


$$B = (38 - 36.5) * (\pi / 180) = 0.026$$

$$\theta_B = 19$$

$$T = 1.386 * 10^{-10} / 0.026 * \cos 19 = 5.638 * 10^{-9}$$

3. C300

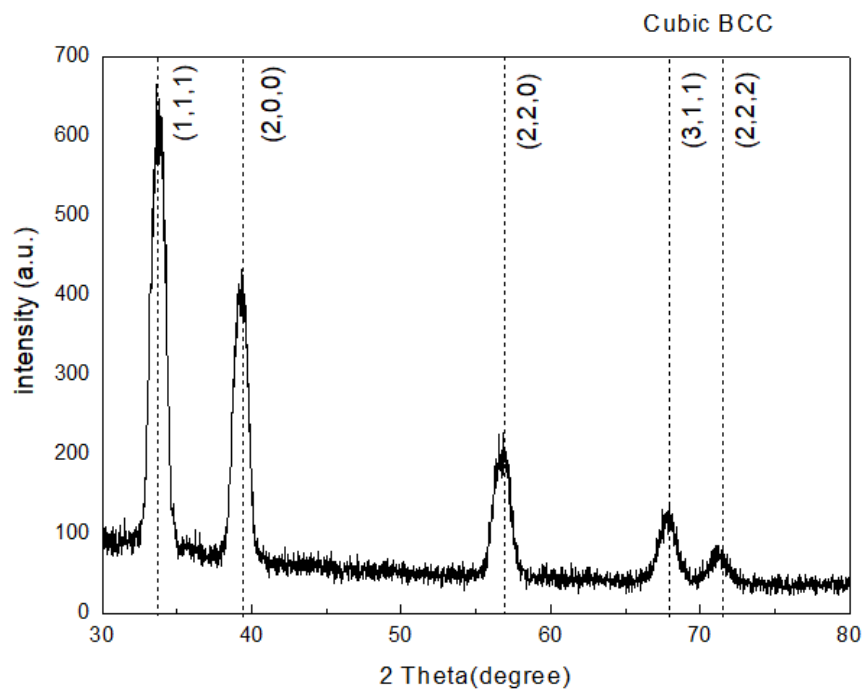


$$B=(38-36.7)*(\pi/180) = 0.022$$

$$\theta_B=19$$

$$T= 1.386*10^{-10}/0.022*\cos 19 = 5.956*10^{-9}$$

4. Z100

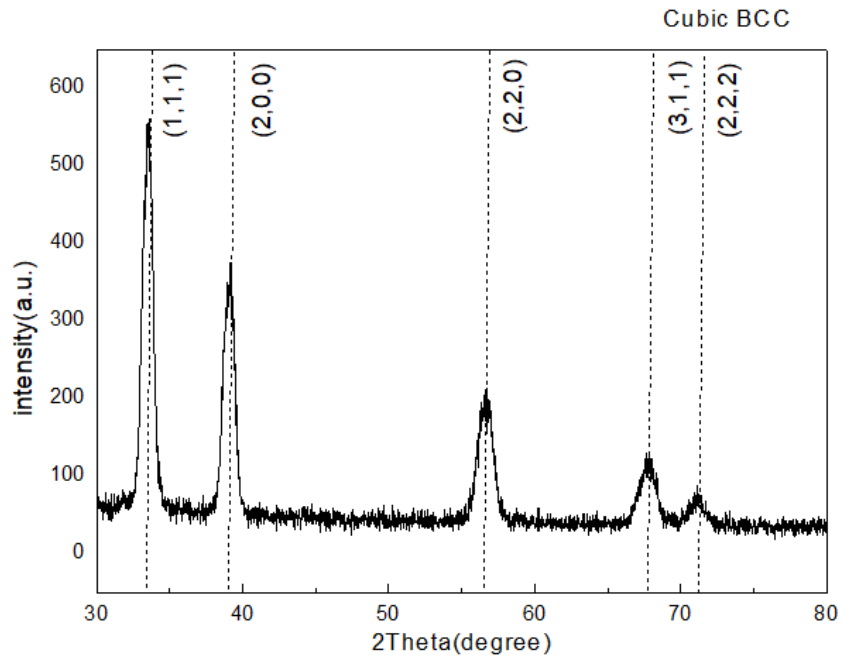


$$B=(34.3-33.1)*(\pi/180) = 0.02$$

$$\theta_B=17.15$$

$$T= 1.386*10^{-10}/0.02*\cos 17.15 = 6.62*10^{-9}$$

5. Z200

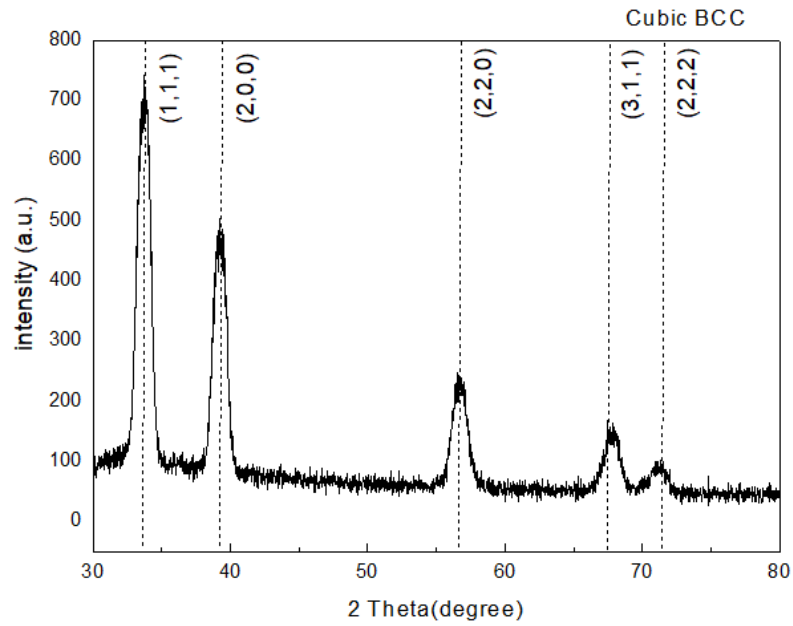


$$B=(34-33)*(\pi/180) = 0.0174$$

$$\theta_B=17$$

$$T=1.386*10^{-10}/0.0174*\cos 17 = 7.617*10^{-9}$$

6. Z300



$$B=(34.38-33.22)*(\pi/180) = 0.02$$

$$\theta_B=17.19$$

$$T=1.386*10^{-10}/0.02*\cos 17.19 = 6.62*10^{-9}$$