

Bede REFS Report

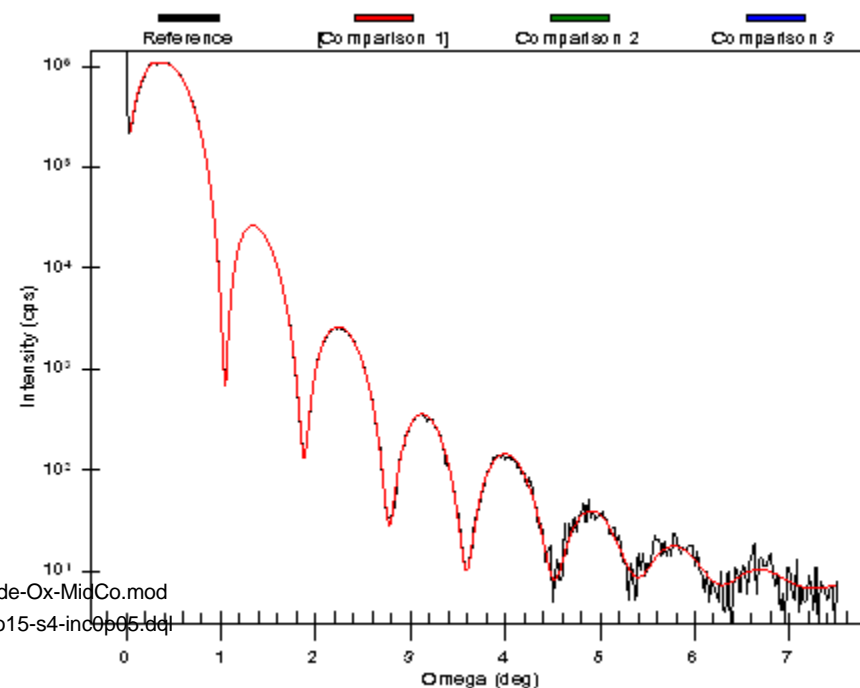
SUMMARY

Company: Condensed Matter Physics, Sch of Physics & Astronomy, University
Equipment: Bruker parameter settings
Operator: Mannan Ali
Lot:
Carrier:
Substrate:
Site:
Comments: Note that these are the parameter settings for Bruker D8

Description: Specular X-ray reflectivity scan assuming 1.541 Å radiation. The incident and background intensities are 22855870.84 cps and 19.18 cps, respectively. The sample angle (Omega) starts at 0.05 deg, and finishes at 7.5 deg with a step-size of 0.025 deg. Simultaneously, the detector angle (2Theta) starts at 0.1 deg and finishes at 15 deg with a step-size of 0.05 deg.

FILES

Model: S:\Projects\PMA systems\Adam\Arkengarthdale\AW270614\AW270614-19-LAX-Ark-Bede-Ox-MidCo.mod
Reference: S:\Projects\PMA systems\Adam\Arkengarthdale\AW270614\AW270614-19-LAX-Ark-0to15-s4-inc005.dat
Comparison 1:
Comparison 2:
Comparison 3:
Goodness of fit: 0.058



ID	THICKNESS (Å)	MATERIAL	X	Y	DENSITY (%)	Roughness	GRADING (Å)	LAMELLAE	PERIODS
SUB.	∞	Al2O3	0.000	0.000	100.06	7.59	0.00	1	
1	17.68	Al2O3	0.000	0.000	40.48	2.23	0.00	1	
2	27.00	Pt	0.000	0.000	92.65	2.93	0.00	1	
3	0.12	Co	0.000	0.000	112.24	0.04	0.00	1	
4	5.55	Co	0.000	0.000	119.10	6.47	0.00	1	
5	11.63	Pt	0.000	0.000	108.95	8.45	0.00	1	
6	5.15	PtO	0.000	0.000	82.51	0.80	0.00	1	

EQUIPMENT**Incident Beam**

Width: 0.2 mm
Height: 10 mm
Divergence: 0.003 deg

Detector Slits

Width: 0.1 mm
Height: 5 mm
Distance to Sample: 29 cm
Acceptance: 0.01976 deg

Include Equipment Function: ☒

OPTIONS**Units**

Angle Units: Degrees
Length Units: Ångstroms
Output Units: Real Space

Diffuse Scans

Include Specular Intensity: ☒
Use C(r) Instead of exp[C(r)-1]: ☐
Use Modified Born Approximation: ☐

MEASUREMENT

Scan Type: Specular
Wavelength: 1.541 Å
Intensity: 22855870.84 cps
Background: 19.18 cps

Sample Ψ Axis

Start: 0.05 deg
Finish: 7.5 deg
Step: 0.025 deg

Detector Θ Axis

Start: 0.1 deg
Finish: 15 deg
Step Size: 0.05 deg

Data Points: 299

EVOLVER

Population Size: 30
Crossover Factor: 0.5
Mutation Factor: 0.7
GOF Function: MAE (log10)

Complete When

☐ Iterations = 5000
☐ Generations = 1000
☐ Elapsed Time (s) = 600
☐ GOF Function <= 0.001

SAMPLE**ROUGHNESS (Å)**

Uncorrelated Interfaces
Correlation Length: 10000 Å
Fractal Exponent: 1
Miscut Angle: 0 deg

Length: 10 mm
Width: 10 mm
Radius of Curvature: ∞