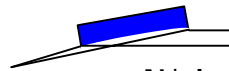
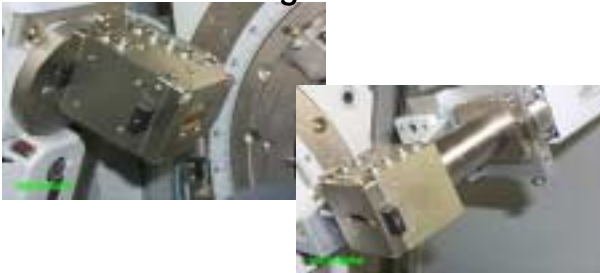
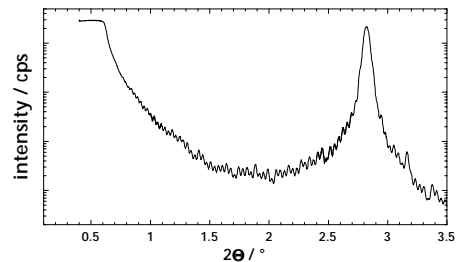


Measurements of thin film thicknesses in the sub- μm range

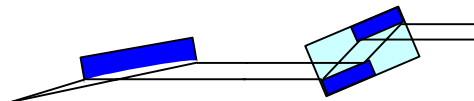
Medium resolution
Twin Mirror Arrangement



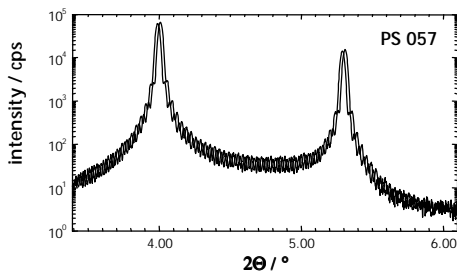
$N \cdot d = 240 \text{ nm}$, $d = 3.19 \text{ nm}$



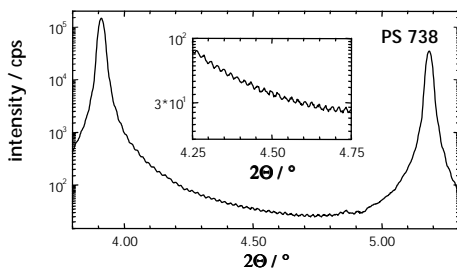
High resolution
Mirror and Channel Cut Monochromator



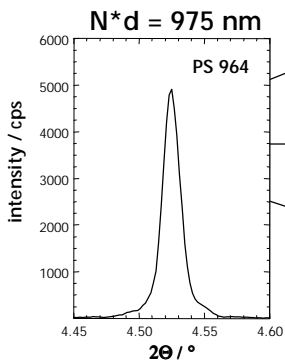
$N \cdot d = 270 \text{ nm}$, $d = 6.76 \text{ nm}$



$N \cdot d = 413 \text{ nm}$, $d = 6.89 \text{ nm}$



Cu $K\alpha$	Twin Mirrors	Mirror+CC
Intensity	$> 10^9$ cps $K\alpha_1 + K\alpha_2$	$> 10^8$ cps $K\alpha_1$
Divergence	0.03°	0.004°
Thickness range	2 – 270 nm	2 – 500 nm



Sample bending
 $\Delta\theta_K = 0.003^\circ$

Beam divergence
 $\Delta\theta_D = 0.004^\circ$

Measurement FWHM
 $\Delta\theta_{ML}^M = 0.008^\circ$

Sample
500 (Si/B₄C)
 $d = 1.95 \text{ nm}$
 $\Delta\theta_{ML} = 0.006^\circ$
 $\Delta E/E = 0.28\%$

X-ray reflectometry with

- high accuracy of thickness determination
- resolution according to the application *but* with the basic requirement to the sample
- thickness homogeneity
- low interface roughness