

μ -X360J Application

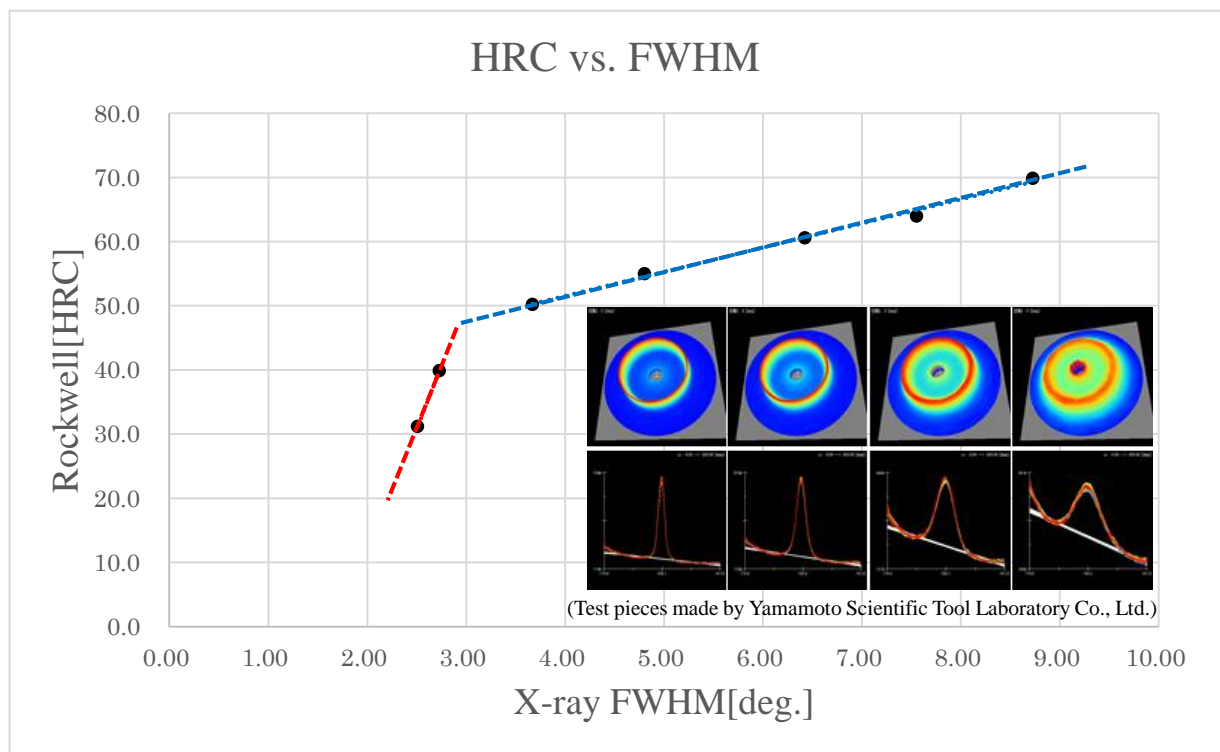
Relation between FWHM and hardness

“Hardness test” is one of the mechanical properties of metal material.
Rockwell hardness scale and Vickers hardness scale are mainly used.

Non-contact & non-destructive
hardness testing of metal materials is possible by
analyzing FWHM which has a correlation with hardness.

Correlation between FWHM and hardness

Ref.	Act.
HRC	FWHM [deg.]
31.2 (SK85)	2.51
	2.51
	2.51
39.9 (SK85)	2.73
	2.73
	2.73
50.2 (SK85)	3.67
	3.67
	3.67
55 (SK85)	4.80
	4.80
	4.81
60.6 (SKS3)	6.46
	6.43
	6.38
64 (SKS3)	7.52
	7.58
	7.56
69.9 (SK120)	8.76
	8.70
	8.72



High repeatable measurement is possible
by using full Debye-Scherrer ring data
in 0.72deg steps and averaging them!