μ-X360s 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. <u>Non-contact & non-destructive</u> <u>hardness testing of metal materials is possible by</u> analyzing FWHM which has a correlation with hardness.

Correlation between FWHM and hardness

Ref.	Act.		
HRC	FWHM	HRC vs. FWHM	
	[deg.]	80.0	
31.2 (SK85)	2.51		
	2.51		
	2.51	60.0	
39.9 (SK85)	2.73		
	2.73		
	2.73		
50.2 (SK85)	3.67		
	3.67		
	3.67		
55 (SK85)	4.80		
	4.80	(Test pieces made by Yamamoto Scientific Tool Laboratory Co. Ltd.)	
	4.81		
60.6 (SKS3)	6.46	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
	6.43	X-ray FWHM[deg.]	
	6.38		
64 (SKS3)	7.52	High repeatable measurement is possible	
	7.58	ingh repeatable measurement is possible	
	7.56	by using full Debye-Scherrer ring data	
69.9 (SK120)	8.76		
	8.70	in 0.72 deg steps and averaging them!	
	8.72		

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