

Electrosynthesis and Characterization of Nanocrystalline UO₂ Coating from Aqueous Alkaline Electrolyte

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Table-1. Calculation of grain size from broadening of (111) UO₂ XRD peak at different temperatures.

Temp.	2θ (deg.)	θ (Radian)	β ₀ (Radians)	β _s = $\frac{\beta_0 - \beta_i}{\sqrt{(\beta_0 - \beta_i)\sqrt{(\beta_0^2 - \beta_i^2)}}}$	D = $\frac{0.9\lambda}{\beta_s \cos \theta}$ (Å)	D (nm)
RT	28.24	0.2465	0.113743	0.112085	12.76	1.276
500	28.19	0.2460	0.044610	0.042899	33.32	3.332
600	28.19	0.2460	0.028553	0.026794	53.35	5.335
700	28.19	0.2460	0.012548	0.010620	134.62	13.46