P-FKP29: Continuous amorphization of Cu-Zr studied by positron lifetime and 2-dimensional Doppler broadening measurements

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To study the amorphization process binary Cu-Zr alloys were mechanically intermixed by cold rolling. Foils of pure Cu and Zr were stacked to form arrays of composition Cu₆₀Zr₄₀ and folded four times. The folded samples were rolled at a strain rate of approximately 0.1 s⁻¹ to a thickness of about 80 µm and then folded to double the thickness and rolled again to a minimum thickness of 80 µm. This procedure was repeated until the final material was cold-rolled for up to 80 passes. The microstructural changes during-cold rolling were investigated at different stages of the mechanical intermixing process by positron lifetime and 2-dimensional Doppler broadening measurements.

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