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Production and Examination of Nanocrystalline Copper JENNIFER ALBRETSEN, Utah State University, JAMES HANNA, QI ZENG, IAN BAKER, Dartmouth University — 325-mesh copper powder was ball milled under various conditions to produce copper samples of different grain sizes. One well-milled sample was annealed at varying temperatures and for different times to promote grain growth. These two procedures provide a range of grain sizes for study. Crystallite size was determined by analyzing x-ray diffraction peak broadening. Continuing research would include equal channel angular extrusion (ECAE) of the samples in an attempt to produce bulk nanocrystalline copper, allowing researchers to more easily determine the mechanical properties of this nanocrystalline metal.

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