

In-Situ EBSD Investigation of Recrystallization and Grain Growth in Copper

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The microstructural evolution of heavily deformed OFHC copper during recrystallization and grain growth was characterized in-situ by automated Electron Backscatter Diffraction (EBSD) or Orientation Imaging Microscopy (OIM). Successive scans (approximately 50-60 2 minute scans per sample) were performed on samples undergoing heating from ambient temperature to 150 degrees C. The orientation and grain boundary textures of growing and shrinking grains are compared. The relationship between various indirect metrics of strain energy and the microstructural evolution are also investigated. These qualitative measures are obtained from OIM data and include parameters such as local misorientation and EBSD pattern quality.