

## **Microstructural characterization and recrystallization kinetics of cold rolled copper**

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### **Abstract**

The recrystallization kinetics in pure copper deformed by cold rolling is mainly investigated by differential scanning calorimetry (DSC) under non-isothermal conditions. DSC curves show exothermic peaks corresponding to the stored energy released during recrystallization process. Variation of the heating rate and application of different methods allowed us to calculate two kinetic parameters of recrystallization: (i) the activation energy of the process was calculated using three different methods and (ii) the Avrami exponent was estimated using the Matusita method. On other hand, the microstructural evolution during recrystallization and grain growth of cold rolled copper were investigated at a temperature of 450 °C by scanning electron microscopy (SEM) and electron back scattered diffraction (EBSD).

**Keywords :** Copper; Recrystallization kinetics; Cold rolling; DSC; Twins; EBSD.

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