

Enthalpy Measurements from Levitation-Processed Hypercooled TiAlCrNb

Douglas M. Matson^{C, S}

Mechanical Engineering, Tufts University, Medford, MA, U.S.A.

douglas.matson@tufts.edu

Enthalpy of fusion measurements and analysis of subsequent solid state transformations were conducted using a microgravity containerless processing furnace on hypercooled molten TiAlCrNb. Evidence of microstructural healing is observed indicating that recrystallization of the primary phase occurs immediately following recalescence. Transformation enthalpy for conversion to subsequent low-temperature phases is quantified and evaluation of the thermal profile indicates that melt stirring does not influence the values observed.