

A Kinetic Approach to Water-Mono Propylene Glycol (MPG) Mixture Crystallization

Victorin Chégnimonhan, Christophe Josset^{C.S} and Hassan Peerhossaini

Laboratoire de Thermocinétique, Ecole Polytechnique de l'Université de Nantes, Nantes, France

Crystallization of water-mono propylene glycol (MPG) mixtures is characterized by a temperature glide due to the increase of antifreeze concentration in the residual liquid phase. Simulations of such mixtures' crystallization often rely on the assumption of thermodynamic equilibrium. A global kinetics of Nakamura type coupled with the equation of heat is presented herein. The phenomena of transfers relating to the experimental device are determined first, and then parameters of kinetics of crystallization are identified for pure water and MPG-mixtures by an inverse method based on a genetic algorithm.