

Application of Quartz Crystal Microbalance for Drowning-out Crystallization of KCl

김은혜, 강정원[†]

고려대학교

(jwkang@korea.ac.kr[†])

Drowning-out crystallization is one of the crystallization methods that is used for substances that have relatively small changes in solubility with temperature changes. It is important to select proper solvent and anti-solvent for this method and provide accurate solubility data. In this work, KCl was used for the drowning-out crystallization. KCl is soluble in water used as a solvent, whereas it is very slightly soluble in ethanol used as an anti-solvent. To measure more accurate solubility data, quartz crystal microbalance(QCM) was chosen as a sensor by detecting change of resonance frequency. Ethanol was injected into KCl water solution as an anti-solvent and the experiment for drowning-out crystallization was performed using QCM as well. As a result, the solubility of KCl was enhanced compared to existing data, and nucleation points were obtained for drowning-out crystallization.