

In situ analysis of the crystallization separation using nano porous gravimetric electrode

이요한, 김용우, 장상목, 김종민†
동아대학교
(jmkim3@dau.ac.kr†)

Sensors that can covert various environmental information such as physical, chemical, and biological information to human-perceptible data have widened applications, and the demand for the sensors tend to be increased in these days. More effective methods are also proposed by the development of nano-technology. In this study, a quartz crystal was used as a device for analyzing the microscopic mass change. Nano-reactor on an analyzing chip (NAC) has a porous structure on the electrode surface, and it can provide a high reproducibility, reliability and functionality. NAC quartz crystal was utilized in crystallization analysis of GS-host molecules. The fabrication of NAC quartz crystal was performed following the undescribed procedure. PSB solution sprayed on the commercial quartz crystal to create a monolayer, then the elctrodeposition was applied to the crystal at the constant voltage of -0.7 V(vs. SCE) in gold(III) chloride solution. The surface of the crystal was modified with aminopropyltriethoxysilane using self-assembly procedure. Molecular recognition and crystallization experiments were performed using GS-host molecules, G2BPDS and G2NDS as well as target molecules. In this study, we confirmed the excellent functionality of NAC quartz crystal for monitoring the crystallization behaviour between GS-host molecules and target molecules.