

### Gas Barrier EVOH/Clay Nanocomposites for Food Packaging Films

최현묵, 김연희, 차상호, 김성우\*  
경기대학교  
(wookim@kyonggi.ac.kr\*)

The incorporation of montmorillonite (MMT) nanoplatelets into EVOH was attempted not only to increase the gas permeation resistance, but also to minimize the deterioration in the barrier performance, which is caused by moisture absorption. The EVOH-based nanocomposite films with organically modified montmorillonite were prepared by using two-step mixing and solution casting method. We examined the clay dispersion state including intercalated/exfoliated structure in the prepared nanocomposite films through XRD analysis and TEM observation. The thermal and mechanical properties of the prepared nanocomposite films with different clay loadings were evaluated in terms of measurement of crystallization temperature and tensile strength/modulus. The presence of clay nanoplatelets in the EVOH matrix was found to result in remarkable improvement in the oxygen and water vapor barrier properties, and also significantly suppress the moisture-derived deterioration in the oxygen barrier performance of the film, presenting great potential for application of moisture-sensitive EVOH films in the humid atmosphere.