B3

제올라이트 분말을 기본 재료로 한 전기 유전체의 전기 및 유변학적 특성

원 광 대, *3사관학교, **에너지연
정 동 운, 최 윤 대*, 김상국**

The electrical and rheological properties of zeolite based electrorheological (ER) fluids were reported. The ER fluide were constructedby mixing zeolite powder with five different dielectric oils. Yield stresses of the fluids were measured on the Conette cell type rheometer as a function of electric fields, particle contaminations, and temperatures. The maximum stress of 6KPa was observed from the zeolite-chlorinated hydrocarbon oil based ER fluid at 25℃ and at 4kV. The yield stress decreased as temperature increased. The current density increased with increasing temperature which was caused by the dissociation of sodium ions from a zeolite morecle. Anhenius plot on the current density showed that the activation energy for the dissociation of sodium ions was about 0.7eV.