전해질용 $Li_2O-V_2O_5-TeO_2$ 계 글라스 세라믹스의 전기적 특성

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Electrical Properties of $Li_2O-V_2O_5-TeO_2$ Glasses for Solid State Electrolyte

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Abstract : Ternary tellurite glassy systems ($Li_2O-V_2O_5-TeO_2$) have been synthesised using Vanadium oxide as a network former and Lithium oxide as network modifier. The addition of a metal oxide makes them electric or mixed electric-ionic conductors, which are of potential interest as cathode materials for solid-state batteries.

This glass-ceramics crystallized from the $Li_2O-V_2O_5-TeO_2$ system are particularly interesting, because they exhibit high conductivity (up to 5.63×10^{-5} S/㎝) at room temperature. the glass samples were prepared by quenching the melt on the copper plate and the glass-ceramics were heat-treated at crystallizing temperature determined from differential thermal analysis (DTA). The electric D.C conductivity result have been analyzed in terms of a small polaron-hopping model.

Key Words : Conductivity, Glass-Ceramics