

22. Temperature Dependent Conductivity Of Li_2SO_4 - $\text{Li}_2\text{O}:\text{P}_2\text{O}_5$ System

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ABSTRACT

The glass compositions $x\text{Li}_2\text{SO}_4 - (100 - x) \text{Li}_2\text{O}:\text{P}_2\text{O}_5$ ($x = 5, 10 \text{ \& } 15 \text{ Wt } 0/0$) have been prepared by using conventional rapid (melt) quenching technique. The electrical conductivity increases with varying the temperatures due to the changing the concentration of Li_2SO_4 . The result indicates that an addition of Li_2SO_4 significantly enhances the ionic conduction by several orders of magnitude compared to that of glass matrix made of only network formers (P_2O_5) and network modifiers (Li_2O).

Keywords: Li_2SO_4 - $\text{Li}_2\text{O}:\text{P}_2\text{O}_5$ system, DTA, Conductivity