

$\text{Li}_{3.2}\text{Si}_{0.6}\text{S}_{0.4}\text{O}_4$: A NEW SOLID ELECTROLYTE
WITH HIGH LITHIUM ION CONDUCTIVITY

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A new solid electrolyte, $\text{Li}_{3.2}\text{Si}_{0.6}\text{S}_{0.4}\text{O}_4$ with high Li^+ ion conductivity has been found in the system Li_4SiO_4 - Li_2SO_4 by electrical conductivity, phase diagram and X-ray diffraction studies. The material is iso-structural with orthorhombic β - Li_3PO_4 and contains Li^+ ions. Ionic conductivities are $1.32 \times 10^{-6} \text{ S cm}^{-1}$ at 25°C and $8.50 \times 10^{-3} \text{ S cm}^{-1}$ at 300°C . The activation energy is 0.80 eV.

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