

EFFECT OF Li^+ -ION DOPING ON THE ELECTRICAL
CONDUCTIVITY OF CaSO_4 M A Careem and M A K L Dissanayake
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Sulphate based solid electrolytes have been studied over the past many years with the view to find low cost, high conducting solid ionic phases that can be used in solid state batteries and other applications. Pure CaSO_4 is a low cost ionic compound with a conductivity of the order of 10^{-7} (ohm cm^{-1}) at 600°C . When CaSO_4 was doped with Li_2SO_4 and enhancement of conductivity by several orders of magnitude was observed. For example, with 10 mole % of Li_2SO_4 the conductivity increased by about 10^4 times at 600°C . The observed conductivity enhancement is attributed to the possible interfacial conduction between grains in the two phase mixture.

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References

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