53. Study of Conduction Mechanism In Phospo-Vanadate Conducting Glass

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ABSTRACT

The understanding of transport processes in glasses is complicated by the inherent structural disorder in these materials in comparison with crystalline materials. But as solid electrolytes, glasses show many advantages over their crystalline or poly crystalline counter parts. In glasses, there is a possibility for continuously varying the composition of the constituents. The variation of conductivity with composition is a very useful tool for investigating the conduction mechanism of glasses. When volid electrolytes possess conductivity due to both ionic and electronic transport, it is necessary to know the fraction of the conductivity due to ions and electrons. The phospo-vanadate glassy system ($80V_2O_5$-20 P_2O_5) was prepared by melt quenching technique. The conduction mechanism was studied by Wagner's polarization method at room temperature. FTIR analysis was used to study the principal bond formation in the material.

Keywords: Vanadate, Glassy system, Wagner's Polarization method