

COMPOSITION EFFECT OF Al_2O_3 ON DENSITY AND FTIR OF LITHIUM BORATE GLASSES

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ABSTRACT

Lithium aluminum borate glasses of composition $35\text{Li}_2\text{O} : (65-X) \text{B}_2\text{O}_3 : x\text{Al}_2\text{O}_3$ (where $X = 0, 5, 10, 15, 20$) were prepared by melt quenching technique and investigated by XRD, DTA, FTIR and density measurement. X ray diffraction and scanning electron microscopy confirmed the nature of sample. The density and molar volume studies reported change of structure with increase in mole percent of aluminum. The FTIR analysis revealed that network structures of sample are mainly based on BO_3 and BO_4 unit.

KEYWORDS: XRD, FTIR and Density