

## **Effect of heat treatment on the spectroscopic properties of tellurite glass**

### **ABSTRACT**

This study reports the spectroscopic properties of tellurite glass with composition of  $70\text{TeO}_2-20\text{ZnO}-9.5\text{Na}_2\text{O}-0.5\text{Er}_2\text{O}_3$  synthesized using melt-quenching technique. The spectroscopic properties of glasses with heat treatment at varying temperature are found to vary due to the structural changes. The DTA spectra of TZNE glass evidenced the glass transition temperature ( $T_g$ ), onset crystallization temperature ( $T_x$ ) and glass crystallization temperature (TC1 and TC2) located at  $79^\circ\text{C}$ ,  $307^\circ\text{C}$ ,  $435^\circ\text{C}$  and  $696^\circ\text{C}$ , respectively. The FTIR spectra were recorded at room temperature shows the significant peaks positioned at  $493\text{ cm}^{-1}$ ,  $559\text{ cm}^{-1}$ ,  $678\text{ cm}^{-1}$ ,  $2184\text{ cm}^{-1}$ ,  $2332\text{ cm}^{-1}$  and  $3795\text{ cm}^{-1}$ .