Light Scattering from Glass-forming Molten Salts

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Raman scattering has been employed to study the temperature and polarization dependence of the vibrational modes for the glass-forming halide salt mixtures $x\mathrm{ZnCl_2}$-$(1-x)\mathrm{AlCl_3}$, with x = 0.8 and 0.6. The analysis has shown that the vibrational modes of the mixtures arise from a contribution of the vibrational modes of the pure components salts. Emphasis has also been given to the low-frequency modes (3 - 80 cm^{-1}), and particular points related to the glass transition phenomenology are discussed in view of the experimental findings.

Key words: Halide Glasses; Molten Salts; Raman Scattering; Glass Transition; Boson Peak.