ABSTRACT

The materials studied in the present work are single crystals of lithium floride(LiF) which are mostly laboratroy grown and triglycine sulphate(TGS) which are grown by using gel technique. In the present study, stress has been given mainly on the measurements of optical absorption, thermoluminescence and dielectric properties of single crystals of LiF and triglycine sulphate(TGS) under different conditions. These measurements are taken when these samples have been quenched, excited with laser light (or subjected to high electric fields) and/or X-ray irradiation or combination of these treatments. Interesting changes have been observed in these properties of the materials. The author has made an attempt at understanding the data which yielded some useful information about the fundamental defect processes taking place in these solids.

KEYWORDS: LiF, TGS, quenching, laser excitation, High electric fields, X-ray irradiation, optical absorption, thermoluminescence, colour centres, dielectric constant, dielectric loss, AC conductivity