

LIST OF PUBLICATIONS: ON THESIS AND RELATED TOPICS:

- 1) Electrical Characteristics of CaS:Dy Phosphors, by M.G. Patil, P.R. Bote and R.D. Lawangar, published in Nuclear Physics & Solid State Physics Conference, New Delhi, Dec.11-15, 1980.
- 2) Nature, origin and distribution of trapping states in SrS:Zn phosphors, by P.R. Bote and R.D. Lawangar, submitted for publication to Mat. Res. Bull.
- 3) Kinetics of Luminescence in SrS:Zn Phosphors, by P.R. Bote and R.D. Lawangar, submitted for publication to J. Luminescence.
- 4) Luminescence behaviour of fluxed SrS phosphors, by P.R. Bote and R.D. Lawangar, to be submitted for publication in Indian J. Phys.
- 5) Effect of addition of flux NaCl on Nature, Origin and distribution of trapping states in SrS:Zn phosphors, to be submitted for publication in Solid State Communication.
- 6) Decay Characteristics of (Ca, Zn) S Phosphors, by R.R. Hadgal, P.R. Bote and R.D. Lawangar, accepted for publication in Indian Journal of Physics.

In thermoluminescence, the electrons trapped during excitation are released by thermal activation. Such released electrons get combined with luminescent centres via conduction band and give the TL emission.

(i) Glow Curve:

A glow curve may have a single or multiple glow peaks, depending upon the presence of the trapping levels of different depths. A particular glow peak belongs to the traps of one depth, and is characterised by its own peak temperature and height. These are the functions of position of the trapping level below the conduction band and the number of electrons trapped in the level. The peak height is also a function of the rate of heating. This is because, at higher heating rate the rate of release of electrons from the traps increases and so does the TL intensity.

(C) Effect of Retrapping of Electrons On Phosphorescence Decay and Thermoluminescence:

The electrons escaped from traps may either recombine with luminescence centres or may be retrapped in deeper empty traps. The presence of retrapping in the phosphorescence decay makes delay in the recombination process and thereby affects its time constant. The retrapping also changes the form of decay as it occurs in the deeper traps. In thermoluminescence, presence of retrapping modifies the shape of the glow curve especially its high temperature side. This is because,