CONCLUSIONS
The experimental results indicate that the thermoluminescent behaviour of the KBr:Tl system is influenced by three important factors: (i) the energy of the exciting radiation, (ii) concentration of the impurity in the specimen, and (iii) thermal and/or mechanical pretreatment of the specimen. The mechanism proposed for the emission at the glow peak temperatures in KBr:Tl specimen is as follows: The ultraviolet or x-irradiation of the phosphor at room temperature produces electron-hole pairs which remain trapped at defect centres. When the temperature of the phosphor is raised, the electrons are released from the trapping centres by thermal ionization. The released electron meets the hole at the recombination centre (Tl centre) with the emission of a photon. It is suggested that the trapping centres associated with the glow peaks have an important bearing primarily on the presence of negative ion vacancies. Besides vacancies, dislocations are also believed to play a significant role in deciding the nature of the trapping centres. It is concluded that the single negative ion vacancies act as trapping sites and are responsible for most of the glow peaks above room temperature. Results reported earlier by other workers\(^{25-28}\) clearly indicate
that F-centres of different thermal stability exist in alkali halide crystals. The assignment of a single negative ion vacancies acting as trapping sites for the electrons in the centres attributed to the majority of the glow peaks, discussed in the present work, is thus consistent with the concept advanced earlier.

The plausible models suggested for the peaks in the different temperature regions are as follows:

340 - 370 K glow peaks: It is suggested that the Tl$^+$ ion-anion vacancy pair situated in the perfect region of the lattice is responsible for the peak at 370 K. Shift in the peak position to lower temperature side is attributed to the presence of Tl$^+$ ion-anion vacancy pair in the distorted region of the lattice, the distortion being caused by the vacancy cluster in the neighbourhood of the pair.

380 - 410 K glow peaks: The 410 K glow peak is attributed to a single Tl$^+$ ion with adjacent negative ion vacancy where the Tl$^+$ ion is presumed to have condensed on dislocation. The centres responsible for other peaks in this group are differentiated on the basis of the degree of the interaction between the luminescent centre and the neighbouring dislocation.
440 - 460 K glow peaks: The peaks in this group are suggested to be associated with Tl$^+$ ions in pairs occupying different near-neighbour sites. The luminescent centres in this case are presumed to be Tl$^+$ ions in pairs associated with single negative ion vacancies.

480 K glow peak: Glow peak at 480 K is proposed to be due to a single Tl$^+$ ion in association with a cation-anion vacancy pair.