

## A-luminescence in CsI:Tl crystal excited by pulsed electron beam

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**Abstract.** The amplitude-time parameters of the A-luminescence at 3.12 eV are studied for CsI:Tl irradiated by a pulsed electron beam at temperatures 77-295 K. It has been established that the 3.12 eV band kinetics vary differently with temperature in two temperature ranges of 77-170K and 170-295K. The increase in temperature from 77 K to 170 K causes the decrease in the exponential decay time constant, while at temperatures above 170 K, there appeared the post-radiation rise stage followed by the slow exponential decay stage. The temperature behavior of the A-luminescence kinetics is interpreted in term of the model, according to which (i) the A-band is due to the allowed electron transition  $6^1P_1 \rightarrow 6^1S_0$  of  $Tl^+$  ions and (ii) the main mechanism of the cathodoluminescence excitation of CsI:Tl at temperatures near room temperature is the spontaneous disintegration of donor-acceptor dipoles  $[Tl^0V_k]$ .