

PECULIARITIES
OF THE DEFECT FORMATION MECHANISM
IN CsI—Ba AND CsI—Cd SINGLE CRYSTALS

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Electroconductivity σ and ionic thermocurrents (ITC) in Cd- and Ba-doped cesium iodide crystals have been investigated. The influence of various cation impurities on electrophysical properties of cesium iodide crystals is determined. It is defined by the radius and the electron configuration of impurity ions. An increase of electroconductivity in the extrinsic conductivity region for CsI—Ba single crystals and its decrease for CsI—Cd single crystals are observed. The results of the ITC spectrum analysis gave evidence for a formation of impurity-vacancy V_c^- —Ba²⁺ dipoles in CsI—Ba crystals and the absence of similar dipoles in CsI—Cd. The defect formation mechanism in CsI crystals doped with various cation impurities has been proposed.