

PROPERTIES OF InP EPITAXIAL LAYERS DOPED
BY RARE-EARTH ELEMENTS AND ALUMINUM

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S u m m a r y

The influence of the complex doping by rare-earth elements (REE) (Yb and Sc) and Al on electro-physical and photoluminescent (at 10 K) properties of InP epitaxial layers obtained by liquid-phase epitaxy (LPE) is studied. It is established that, for the optimum ratios of Yb(Sc) and Al in the indium melt, the concentration of electrons in InP layers diminishes to $(7 \times 10^{13} - 1 \times 10^{14}) \text{ cm}^{-3}$, and the mobility achieves the values — $5000 \text{ cm}^2/(\text{V}\cdot\text{s})$ (300 K) and $(70000 - 74000) \text{ cm}^2/(\text{V}\cdot\text{s})$ (77 K). The results of this experiment are explained by the gettering action of REEs in indium melts and by the influence of ytterbium on the redistribution of basic background admixtures over the sublattices of indium and arsenic.