

INFLUENCE OF STRUCTURE CHARACTERISTICS OF EPITAXIAL CDXHG1-XTE FILMS ON ELECTRICAL AND PHOTOELECTRIC PROPERTIES AFTER LASER IRRADIATION

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SEMICONDUCTORS

Том: 27

Выпуск: 11-12

Стр.: 1002-1007

Опубликовано: NOV-DEC 1993

Тип документа: Article

Аннотация

A comprehensive investigation was made of photoelectric and electrical properties of epitaxial $\text{Cd}_x\text{Hg}_{1-x}\text{Te}$ films with a cellular structure, which were irradiated with nanosecond ruby laser pulses characterized by a wide range of energy densities. An increase in the photosensitivity of the investigated samples was attributed to the gettering of electrically active point defects by regions of weak misorientation. Changes in the electrical properties were due to a reduction in the number of mercury atoms at interstices because of laser-stimulated desorption and segregation of mercury at sinks, and also because of changes in the electron states at the boundaries of cells. Treatment of epitaxial films with laser pulses characterized by an energy density above the melting threshold increased the band gap in the surface layers and this was due to residual stresses and composition changes in these layers.

Ключевые слова

KeyWords Plus: ANNEALING CONDITIONS; DIFFUSION; SEMICONDUCTORS

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Категории/классификация

Области исследований: Physics

Категории Web of Science: Physics, Condensed Matter