

INFLUENCE OF A SURFACE ON THE FRANZ-KELDYSH EFFECT IN N - AND P - TYPE INDIUM PHOSPHIDE

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Abstract

Influence of a surface on the photoexcitation under static electric fields is studied by measuring and calculating the Franz-Keldysh(FK) spectra from a surface space-charge region in InP. An optically inactive surface layer(OISL) is found to be indispensable to accounting for the FK spectra observed under surface electric fields up to about 200 kV/cm. An origin of OISL is discussed in terms of surface effect on the field-induced wave function of the excited state.