

EFFECTS OF THE REAL-SPACE
TRANSFER OF CHARGE CARRIERS
IN THE n -AlGaAs/GaAs HETEROSTRUCTURES
WITH THE DELTA-LAYERS OF IMPURITY
IN THE BARRIERS

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S u m m a r y

The results of investigations of the electric and magnetic transport phenomena of charge carriers in the heterostructures with quantum wells and impurity delta-layers in adjacent barriers are reviewed and analyzed. The positive magnetoresistance observed at low temperatures ($T < 20$ K) and the dependence of the charge carrier mobility on the impurity concentration in the delta layers are related to the transport of carriers via two parallel channels with different mobilities, which are the channels formed by the structural and delta-layer quantum wells. The non-linear dependence of the current on the applied electric field strength is explained by the field-induced redistribution of charge carriers between these channels.