

REAL-SPACE
TRANSFER AND FAR-INFRARED
EMISSION OF HOT ELECTRONS
IN InGaAs/GaAs HETEROSTRUCTURES
WITH TUNNEL-COUPLED QUANTUM WELLS

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S u m m a r y

The transport of electrons and light emission under the influence of a lateral electric field in InGaAs/GaAs heterostructures with double tunnel-coupled quantum wells has been studied. For the selectively doped structures at 4.2 K and electric fields ~ 1 kV/cm, we have found that the rate of current growth diminishes with increasing field, and simultaneously a sharp increase of the IR emission intensity is observed. The effect is related to the real-space transfer of electrons from the undoped quantum well to the higher energy states in the doped well where they are accumulated.