



## Semiconductors

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# Electronic and Optical Properties of Semiconductors

Exciton-polariton transition induced by elastic exciton-exciton collisions in ultrahigh quality AlGaAs alloys

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**Abstract** The stationary and time-resolved polariton radiation in ultrahigh quality AlGaAs layers have been studied. It has been found that elastic exciton-exciton collisions lead to the appearance of a low-energy line of polariton radiation. We show that the rate of exciton-to-polariton transitions caused by elastic exciton-exciton collisions is determined not only by the density of the excitonic gas, but also by its temperature; this is in accordance with existing theoretical predictions.

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