

Localization-delocalization transition in disordered one-dimensional exciton-polariton system

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The transition from the delocalized to the localized state has been investigated in a quasi-one-dimensional exciton-polariton system excited nonresonantly in GaAs-based microcavity wire with disordered potential. The photoexcited polariton condensate has been found to spread along the wire with a velocity exceeding $1 \mu\text{m/ps}$. The propagation along the wire is provided by high energy polaritons. The LP localization length decreases with decreasing blue shift of LPs in the excited spot. The polariton condensate returns to the Bose glass state when the blue shift of the LP resonance at the excitation spot decreases below the critical level that depends on the potential disorder.

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