

Abstract Submitted
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Electroluminescence and Photoluminescence of Microcavity Exciton-Polaritons NA YOUNG KIM, WOLFGANG NITSCHKE, Stanford University, LIANDA YAN, National Institute of Informatics, SVEN HOEFLING, ALFRED FORCHEL, University of Wuerzburg, YOSHIHISA YAMAMOTO, Stanford University — Microcavity exciton-polaritons, half-light and half-matter quasiparticles, have been studied extensively for about last two decades because the inherent nature as a mixture of cavity photons and quantum well excitons provides a unique testbed to explore fundamental nature of physics. Recently, there have been increasing efforts to build photonic devices using microcavity exciton-polaritons. An essential step toward practical devices is to establish efficient electrical pumping scheme. Here we compare optical properties of GaAs-based microcavity exciton-polaritons in terms of electrical versus optical pumping schemes, and we address a promising design of a microcavity wafer to improve electrical pumping efficiency.

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