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Local luminescence characterizations of ZnO nanostructures and their electrical transport characteristics JI-YONG PARK, YOUNG MU OH, KYUNG MOON LEE, Ajou University, KYUNG HO PARK, Korean Advanced Nanofab Center, YONGSUN KIM, Y.H. AHN, SOONIL LEE, Ajou University — Local luminescence characterizations using cathodoluminescence (CL) emissions from individual ZnO nanostructures with diameters of 30-100 nm are investigated to correlate their optical and electrical properties. Two types of ZnO nanostructures with high and low charge carrier densities are identified from electronic transport measurements and concomitant CL characterizations. The results demonstrate that local luminescence characterizations can provide information about inhomogeneities in electrical and optical properties among ZnO nanostructures.

Ji-Yong Park
Ajou University

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