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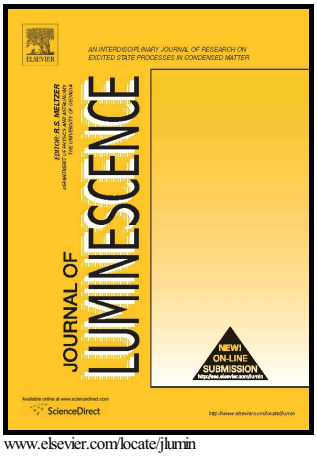


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# Spatial redistribution of photoexcited carriers in InGaN/GaN structures emitting in a wide spectral range

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## Abstract

Capabilities of pulsed mode in metalorganic chemical vapor deposition in growing InGaN-based multiple quantum wells (QWs) emitting in a wide spectral range by varying deposition temperatures are tested. Lowering of the temperatures for growing short-period superlattices, which were used as templates, and the active QWs enabled redshifting the photoluminescence peak position to 580 nm. Spatially-resolved photoluminescence spectroscopy using confocal microscope revealed that the structures emitting at the wavelengths longer than ~530 nm have specific features in the profile of potential fluctuations, which are qualitatively different from those observed in the structures emitting in blue region. The transition from the dominance of the potential fluctuations of a small spatial scale to the prevalence of large-scale potential fluctuations is accompanied by the considerable decrease in emission intensity.

Keywords: III-nitrides; InGaN; photoluminescence; carrier localization

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