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## Investigation of the thermal behavior of emission spectra of the doped quantum wells by means of LSE model

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### Abstract

Thermal variation of PL peak energy of undoped nitride semiconductor quantum well shows a successive red-blue-red shifted emission (S-shaped behavior). This behavior has been attributed to the localization of excitons at the energy minima induced by the potential fluctuations in the quantum well structure and/or interface roughness. The S-shaped behavior of PL peak position, the thermal variation of PL line width (FWHM) and the integrated PL intensity as well as the localization exciton have been affected by the modulation doping level. In this paper, exciton localizations of doped and undoped nitride semiconductor quantum wells have been studied by localized states ensembles (LSE) model.

**Keywords:** potential fluctuation, exciton localization, quantum well, nitride semiconductor, localized state ensembles model

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