



Optica Applicata 2005(Vol.35), No.3, pp. 407-412

## Photoluminescence of poly(N-vinylcarbazole) thin films deposited by dip-coating technique

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225.7 kB

### Keywords

photoluminescence, poly(N-vinylcarbazole), thin films, dip-coating

### Abstract

This paper is concerned with the photoluminescence (PL) study of poly(N-vinylcarbazole) (PVK) thin films deposited on the glass substrate by the dip-coating method. The PL spectra have been measured under steady state excitation (He-Cd laser, 325 nm) in the temperature range from 13 to 300 K. All the samples being studied exhibit strong luminescence in broad temperature range. The main emission PL peak has maximum at 410 nm and is attributed to the excimer emission of PVK. We have observed a small red-shift of this peak with an increase of temperature. In all the films under investigation the thermal quenching of PL has been noticed. This behaviour is determined by the closeness of carbazole groups belonging to neighbouring chains because the interaction between them leads to nonradiative transitions. The PL spectra of PVK thin films annealed under iodine atmosphere have also been investigated. We have observed a decrease of PL for these films. We have concluded that the annealing of PVK under iodine atmosphere induces its degradation.

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