INFRA-RED SPECTROSCOPY OF A BARRIER PHASE OF PHOTOLUMINESCENT NANOCOMPOSITE Si/SiO_x FILMS

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S u m m a r y

Infra-red (IR) transmission spectra of Si/SiO_x nanocomposite films obtained by a pulsed laser deposition have been measured, and the shapes of lines that correspond to stretching vibrations of bridging oxygen have been analyzed. The content of $Si—O_y—Si_{4-y}$ ($1 \leq y \leq 4$) molecular complexes in the structural network of SiO_x films has been determined versus their formation conditions. The correlation between photoluminescent properties of the films and the composition and the structure of the barrier phase is reported.