Photoluminescence properties of 4,5-dimethyl-4′,5′-di(methylamido) tetrathiafulvalene thin film grown by thermal evaporation

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Résumé en anglais	In this paper, a temperature dependence study of photoluminescence spectra of vacuum-deposited organic donor tetrathiafulvalene: 4,5-dimethyl-4′,5′-di(methylamido) tetrathiafulvalene thin layers is presented. The investigated layers were deposited in a high vacuum (2 × 10−6 Torr) using molecular beam deposition (MBD) technique on n-doped (1 1 1) oriented silicon substrates. The photoluminescence studies were carried out in the temperatures range [13 K–325 K]. Under a 325 nm wavelength light excitation and at low-temperature a broad luminescence emission peak was observed in the UV–Visible and 2 peaks in the near infrared region. The photoluminescence spectra exhibit temperature dependence with a maximum emission at 180 K. Furthermore, an enhancement of the photoluminescence signal under a continuous excitation was observed at room temperature.
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