



Effect of the morphology on the optical and electrical properties of TPyP thin films deposited by vacuum evaporation

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Résumé en anglais We have studied the effect of the morphology on the optical and electrical properties of the TPyP thin films deposited by vacuum evaporation on different substrates (Si with different characteristics, ITO, quartz and glass). The presence of some well-defined B and Q absorption bands has been evidenced. FTIR and photoluminescence measurements have been used to confirm the preservation of the chemical structure of the compound during the evaporation process. The contact Au/TPyP/Si(n) is rectifier, while a blocking behavior has been shown by Si(n)/TPyP/Si(n) and ITO/TPyP/Si(n) and an injector dominated behavior by Si(p)/TPyP/Si(p) and ITO/TPyP/Si(p) heterostructures. The best transmission was obtained on TPyP film deposited on ITO and the highest value of the current in heterostructures Si(n) electrode characterised by a large grain morphology and in consequence by a weak optical and charge carrier scattering at the grain boundaries.

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