



Flexible heterostructures based on metal phthalocyanines thin films obtained by MAPLE

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Résumé en anglais	Heterostructures based on zinc phthalocyanine (ZnPc), magnesium phthalocyanine (MgPc) and 5,10,15,20-tetra(4-pyridyl)21H,23H-porphine (TPyP) were deposited on ITO flexible substrates by Matrix Assisted Pulsed Laser Evaporation (MAPLE) technique. Organic heterostructures containing (TPyP/ZnPc(MgPc)) stacked or (ZnPc(MgPc):TPyP) mixed layers were characterized by X-ray diffraction-XRD, photoluminescence-PL, UV-vis and FTIR spectroscopy. No chemical decomposition of the initial materials was observed. The investigated structures present a large spectral absorption in the visible range making them suitable for organic photovoltaics applications (OPV). Scanning electron microscopy-SEM and atomic force microscopy-AFM revealed morphologies typical for the films prepared by MAPLE. The current-voltage characteristics of the investigated structures, measured in dark and under light, present an improvement in the current value (~3 order of magnitude larger) for the structure based on the mixed layer (Al/MgPc:TPyP/ITO) in comparison with the stacked layer (Al/MgPc//TPyP/ITO). A photogeneration process was evidenced in the case of structures Al/ZnPc:TPyP/ITO with mixed layers.
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