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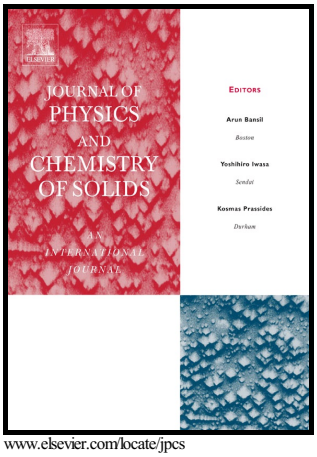

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Synthesis and characterisation of a copolymer involving PVK and MEH-PPV for organic electronic devices

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Abstract

A statistic copolymer denoted (PVK)x-(MEH-PPV)y containing poly(N-vinylcarbazole) (PVK) as well as poly[2-methoxy-5-(2-ethylhexyloxy)-1,4-phenylenevinylene] (MEH-PPV) building blocks was prepared by chemical oxidative way. Correlations structure-properties of the synthesized copolymer were investigated by using different experimental analyses (IR, XRD, ATG, optical absorption, PL and PLRT) combined with theoretical calculations (DFT). The new copolymer exhibits interesting properties compared to PVK and MEH-PPV homopolymers taken separately. The resulting copolymer has improved thermal stability and it exhibits original optical properties compared to the PVK and MEH-PPV ones as well as its reveled charge transfer process and the continuous donor acceptor existence. All these experimental and theoretical analysis argue the originality of this new material which could then be exploited in optoelectronics.