

Mechanosynthesis of a phenylenedivinylidenebisquinoline. Optical, morphological and electroluminescence properties

Gutierrez, A. R.; Vazquez, R. A.; Moggi, I.; E. Arias; O. Coreño; J.L. Maldonado; G. Ramos-Ortíz; O. Rodríguez; R.M. Jiménez-Barrera

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Abstract

A phenylenedivinylidenebisquinoline oligomer was obtained by reacting quinaldine with 2,5-bis(octyloxy)terephthalaldehyde via the Knoevenagel reaction by mechanosynthesis. The product was characterized by ¹H Homo-J-Resolved NMR, ¹³C NMR, FT-IR, Fluorescence, UV-Vis spectroscopy and by FAB+ mass spectrometry. X-ray diffraction studies indicate that the molecule is semicrystalline, while laser scanning confocal microscopy shows that the emission comes from the crystals. As a consequence, the morphology and accordingly the PL values in spun films can be changed by varying the spinning conditions. Intrinsic electroluminescent properties are reported using the ITO/M1AMec/Al single layer configuration.