

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Crystalline PTCDA waveguides grown by organic molecular beam deposition** V.R. GANGILENKA, J. MARKUS, Department of Physics, University of Cincinnati, Cincinnati, Ohio 45221-0011 U.S.A., H. SCHMITZER, Department of Physics, Xavier University, Cincinnati, Ohio 45207, U.S.A. , H.P. WAGNER, Department of Physics, University of Cincinnati, Cincinnati, Ohio 45221-0011 U.S.A. — During the past few decades molecular organic semiconductors have become interesting candidates for optical and opto-electronic device applications such as organic light emitting diodes (OLEDs). Of many organic materials 3,4,9,10-perylene tetracarboxylic dianhydride (PTCDA) is one of the most intensively investigated organic molecule in literature. However, so far studies on PTCDA optical waveguides are very limited. We investigate various PTCDA waveguide structures by m-line spectroscopy. The waveguides are fabricated by organic molecular beam deposition (OMBD) under high vacuum. The waveguides are deposited on a pyrex substrate or on a rutile prism with an index matching film of aluminum-quinoline (Alq3). The effective indices of refraction of observed TE and TM modes are consistent with classical electromagnetic theory. The calculated thicknesses of the waveguides under investigation are compared with reflection measurements on the same samples.

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Date submitted: 21 Nov 2006

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