Abstract Submitted for the MAR08 Meeting of The American Physical Society

Multilayered Polymeric Photonic Structure for THz applications CHEN XIA, LOUIS KOSNOSKY, JIE SHAN, Physics Department, Case Western Reserve University, JOSEPH LOTT, MATTHEW MACKEY, VISHWAS PETHE, ERIC BAER, ANNE HILTNER, CHRISTOPH WEDER, Department of macromolecular science and engineering, Case western Reserve University — Photonic crystal have been widely studied in the visible, and recently become of interest in the THz regime of the electromagnetic spectrum. We have developed a rapid, easy and cost effective method for the preparation of polymeric materials with high refractive indices (RI) for the terahertz (THz) frequencies through extrusion of polymer and nanoparticles of inorganic materials. Using this method, we have fabricated a one-dimensional photonic crystal of polymer/polymer ferroelectric nanoparticles composite with a nearly complete stop band in the THz regime. The result will also be compared to a transfer-matrix calculation

> Chen Xia Physics Department, Case Western Reserve University

Date submitted: 02 Dec 2007

Electronic form version 1.4