Abstract Submitted
for the OSS14 Meeting of
The American Physical Society

ZnO/metal layered 3D Photonic crystals[1] MICHAEL MCMASTER, DONALD PRIOUR, TOM ODER, Youngstown State University — Three-dimensional (3D) photonic crystals are deposited by sputtering multilayer mesoscopic pillars of zinc oxide and a metal, either chromium or aluminum, in a triangular lattice. As a preliminary step, ZnO/metal one-dimensional photonic crystals are deposited with varying layer thicknesses. The layer thicknesses corresponding to the most prominent band gap are chosen for the layered pillars of the 3D crystal structure. The photonic crystals are tailored to ensure that the optical band gap lies within the spectrum of visible light for near normal incidence. The band gap of the 3D photonic crystal is measured by collecting the absorption spectrum.

[1]We wish to acknowledge support of funds from NSF (DMR-1006083).

Tom Oder
Youngstown State University

Date submitted: 14 Mar 2014 Electronic form version 1.4