

Abstract Submitted
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Modeling of the photonic crystal waveguide modes with the FDTD method¹ BUDDHI RAI, Western Michigan University — The electromagnetic modes are investigated using a simple 1D implementation of the FDTD numerical algorithm to a model of 1D photonic crystal (layered media). The fields E_z and H_y are simulated along the \hat{x} -axis, the propagation direction. Source implementation and the effects of various boundary conditions such as ABC, Mur on TF/SF fields are investigated. Of particular focus in this paper is, for example, on investigating the guided and/or radiation modes at a stop band frequency of the photonic crystal formed of linear and Kerr nonlinear media. Such structures exhibit interesting transmission and reflection properties that make them suitable for optical devices with frequency/wavelength tunable characteristics.

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