

Wave Propagation in a 3D Medium with Time Varying Complex Refractive Index

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ABSTRACT

The three-dimensional Maxwell equations with a time-varying complex refraction index are analyzed analytically and numerically as a model for the simulation of micro-chip fabrication. A spectral element scheme is used to determine the electric field and the spatial distribution of the complex refractive index. The boundary conditions for partially coherent light are obtained by ray tracing as the incoming radiation from the projection system.