1023-78-1790 **Gang Bao** (bao@math.msu.edu), Department of Mathematics, Michigan State University, East Lansing, MI 48824, **Ying Li*** (liying1@msu.edu), A214 Wells Hall, Department of Mathematics, Michigan State University, East Lansing, MI 48824, and **Zhengfang Zhou** (zfzhou@math.msu.edu), Department of Mathematics, Michigan State University, East Lansing, MI 48824. *Lp estimates of Maxwell's Equations in a bounded domain.*

Consider the electromagnetic field scattered by a nonlinear optical medium. Because of inhomogeneity of the medium, the governing equations are Maxwell's equation with jump coefficients and a source term. By using the Sommerfeld radiation condition, the model scattering problem may be truncated into a bounded domain. In this paper, Lp estimates for Maxwell's equation are established. The solution of Maxwell's equation is represented by spherical harmonics. Lp estimate is for the Maxwell equations with jump coefficients. An application of our Lp estimates gives rise to the wellposedness of a linearized model. (Received September 26, 2006)