1093-35-121 **David M. Ambrose*** (ambrose@math.drexel.edu), Department of Mathematics, Drexel University, Philadelphia, PA 19104, and **Shari Moskow**, Department of Mathematics, Drexel University. *Scattering of electromagnetic waves by thin, high-contrast dielectrics.*

We study the scattered electric field from a thin, high-contrast dielectric volume. The space occupied by the scatterer is the Cartesian product of a bounded, two-dimensional region with a finite interval; that is, the scatterer is cylindrical, and of finite volume. The electric field is a solution of the time-harmonic Maxwell equations. We will discuss three theorems. In the first theorem, we establish an integral representation for the electric field which accounts for the jumps in the index of refraction which occur at the object boundary. This integral representation includes a surface integral over the boundary of the object. In our second theorem, we find an explicit formula for the limit as the thickness of the scatterer vanishes for the operator associated to this surface integral. In our third theorem, we demonstrate that under some uniform regularity assumptions, the normal trace of the electric field on the object boundary goes to zero as the thickness of the object goes to zero simultaneously as the contrast goes to infinity. (Received August 07, 2013)