

# A New Approach to the Numerical Solution of Maxwell's Equations

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007 Kemeny Hall, 4:00 pm  
(Tea 3:30 pm 300 Kemeny Hall)

## Abstract

We will discuss recent joint work with Leslie Greengard on a new representation of solutions to the time harmonic Maxwell Equations. Using this representation we reduce the solution of the classical problems of scattering off of a smooth bounded interface to the solution of Fredholm equations of second kind on the interface. What distinguishes our representation is that it does not have any spurious "interior" resonances or suffer from low frequency breakdown. It also reveals some interesting topological features of the time harmonic equations at non-zero frequencies.