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**Radiation Patterns of Electric Dipoles Close to a Plane Interface<sup>1</sup>**

LAN LUAN, PAUL SIEVERT, JOHN KETTERSON, Northwestern University —  
The radiation pattern of an electric dipole is modified when located in the vicinity of a dielectric or metal interface. We have investigated this phenomenon through numerical simulations and direct measurements. Our simulations are based on the Sommerfeld integral formalism. The effects of the dipole position and orientation, the dielectric constants of the media, and the observation position on the radiation pattern for TE and TM modes were studied. On the experimental side, we used fluorescent molecules to simulate the electric dipoles. The angular distribution of the fluorescence emission was recorded. Both our simulations and the experiments showed that the dipole radiation pattern is strongly modified from the free space form. Our results are potentially important for optical signal collection associated with spectroscopic studies of molecules bound to a surface.

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LAN LUAN  
Northwestern University

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