

Abstracts

Two dimensional dielectric profile reconstruction based on spectral domain moment method and nonlinear optimization

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A novel method for two dimensional (2D) profile reconstruction of dielectric objects, based on nonlinear optimization is presented. The unknown dielectric profile is expressed in terms of Gaussian basis functions. The scattering integral equation (SIE) is discretized using a spectral domain moment technique, where the unknown internal field is described as a superposition of a limited number of plane waves, resulting in a significant reduction of the associated computational cost. Accurate and efficient reconstruction of a dielectric cylinder profile is presented.

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