Abstracts

Nonlinear Microwave Optics in Liquid Suspensions of Shaped Microparticles

D. Rogovin, R. McGraw, W. Ho, R. Shih, H.R. Fetterman and B. Bobbs. "Nonlinear Microwave Optics in Liquid Suspensions of Shaped Microparticles." 1992 Transactions on Microwave Theory and Techniques 40.9 (Sep. 1992 [T-MTT]): 1780-1788.

The unique properties of shaped microparticle suspensions make them suitable as candidate media for such active optical process as phase conjugate via degenerate four-wave mixing at microwave and millimeter wavelengths. We have generated up 250 mW of phase conjugate radiation, a medium composed of rod shaped carbon fibers suspended in a passive fluid dielectric that is maintained in a waveguide. The theory for the nonlinear optical properties of shaped particle suspensions is presented and shown to be in excellent agreement with the available experimental data.

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