

Abstract Submitted
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Broadband Transparency of Graded Anisotropic Metamaterial¹ KA SHING HUI, HON PING LEE, LEI SUN, KIN WAH YU, The Chinese University of Hong Kong — We have investigated the scattering of electromagnetic waves from a graded anisotropic sphere whose dielectric permittivity is radially anisotropic, with different radial and tangential components described by the graded Drude model. The Rayleigh scattering cross section (RSCS) has been calculated analytically and numerically by the Rayleigh scattering theory. The electric polarization and the electromagnetic field distribution are also examined in a quasi-static condition. Due to the scattering cancellation mechanism, the results reveal that the RSCS can be rather smaller over a wider frequency range, indicating the so called broadband transparency. Furthermore, compared with the non-graded and graded isotropic structure, the anisotropic structure leads a better broadband transparency.

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Ka Shing Hui
The Chinese University of Hong Kong

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