

# Resonant properties of a dielectric cylinder in the field of an electromagnetic wave in the microwave range

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In this work, the resonance scattering spectra at the lowest resonant modes of a dielectric cylinder with a diameter of 7 mm and a height of 8 mm excited by an incident plane linearly polarized electromagnetic wave of the GHz frequency range are investigated experimentally and by computer modeling. Intense magnetic and electric resonances are observed in the obtained scattering spectra. A good agreement between the results of the experiment and numerical simulation is obtained. Similarly to a dielectric ring, the occurrence of a strong resonance on the main magnetic mode can lead to a negative magnetic susceptibility of the investigated dielectric cylinder with a high value of dielectric permittivity in the microwave region.