

EFFECTIVE DIELECTRIC PERMITTIVITY  
OF MATRIX DISPERSE SYSTEMS  
WITH TWO-LAYER INCLUSIONS

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S u m m a r y

We propose a theoretical approach to calculation of the effective dielectric permittivity of matrix disperse systems that consist of a dielectric matrix with two-layer randomly located spherical inclusions of different radii. Departures from the Maxwell – Garnett formula associated with increasing in a volume fraction of inclusions are studied. It is shown that effects of the direct dipole-dipole interaction between inclusions become important. In the electrostatic approximation, we exactly solved the problem of a response of this  $N$ -particle system to the external electric field and obtained corrections to the Maxwell – Garnett formula by taking into account the pair dipole-dipole interactions between inclusions.