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Dependence of optical absorption of thin nanocomposite films on inclusions distribution IRINA BARIAKHTAR, Boston College, VALERI LOZOVSKI, OLGA OBRAZUMOVA, GALINA STRILCHUK, KNU, Ukraine — It is well known, that one of the ways to widen the spectral range of the elements of photovoltaic systems is using the nanocomposite films as part of its active element. The problem of characterization of the optical properties of nanocomposite thin films, especially with inhomogeneous distribution of inclusions, arises. In this work, we propose an approach which allows us to determine the parameters of the nanocomposite film which cannot be measured directly. The approach is based on the previous works where the ultrathin films electrodynamics was studied earlier. The absorption spectrum sensibly depends on the film parameters. They are the inclusions' concentration in the film, the presence of a shell of the inclusion particles and the size of this shell, the spatial orientation of particles in a layer and the presence of different types of particles and their relative spatial distribution in the film. The strong dependence of the absorption profiles on the type of distribution of particles along the film, *ceteris parebus*, is demonstrated in this report.

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