

SURFACE PLASMONS AND TRANSIENT OPTICAL RESPONSE OF COPPER NANOPARTICLES

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S u m m a r y

For the femto-picosecond time range, we present the results of investigations of induced variations of the optical density $\Delta D(t)$, half-width $\Delta H/2(t)$, and spectral position of the maximum of the band of surface plasmons (SP) in copper nanoparticles incorporated into SiO₂ matrix under the excitation with femtosecond laser pulses. On this basis, a dependence of energy exchange efficiency between hot electrons and lattice on the dimensionality factor is analyzed, as well as the influence of high frequency field effects on the basic parameters of surface plasmon band.