

POLARIZATION-MODULATION SPECTROSCOPY  
OF THE SURFACE PLASMON RESONANCE  
IN GOLD NANOSTRUCTURES OBTAINED  
BY THE METHOD OF PULSED LASER  
DEPOSITION

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S u m m a r y

The angular characteristics of the internal reflectances for light in rough gold films and composite films of aluminum oxide with gold nanoparticles were measured at wavelengths of 630 and 1150 nm using the method of polarization modulation of radiation. In the range of angles exceeding the critical one, the characteristics of the reflectances for *p*- and *s*-polarizations have wide dips caused by the resonance interaction of both radiation states with surface plasmons. The peculiarities of the surface plasmon resonance and the corresponding structural properties of C films are discussed. The experimental angular dependences of the internal light reflection for composite films agree with those calculated according to the Fresnel formulas in the approximation of optical indicatrix of the complex refractive index of films. The refractive and absorption indices of films are determined.