Features of radiation of d-metals (gold) in the nonequilibrium electrons and lattice heating by femtosecond laser pulses

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Theoretical analysis of the spectrum of the thermal radiation of gold in terms of electron heating to temperatures above $10^4$ K and for lattice temperature above $10^3$ K in the relaxation period of electrons and lattice temperature was conducted, suggesting that long-range order of the crystal structure was not yet destroyed. It was shown that changes in the nature of the thermal radiation of gold will be determined mainly by interband radiative recombination of electron-induced smearing of the conduction electrons at high electron temperature, as well as the change in frequency of the electron–phonon collisions due to a significant heating of the lattice.