

Ultrafast broadband spectroscopic studies of GaAs under intense laser excitation

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An ultrafast broadband spectroscopic technique (350 to 900 nm) is employed to measure the dielectric function of GaAs in response to a 70-fs laser pulse excitation. We observe drastic changes in the dielectric function within 1ps of the excitation, which we attribute to an ultrafast non-thermal structural transition. These broadband measurements provide extensive information on the initial electronic excitation and the dynamics of the subsequent phase transition.