Ultrafast physical processes in semiconductors

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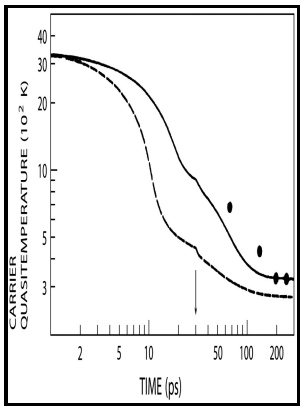

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Here, the effects of the surface coatings on the photocatalytic function are studied, with Au-tipped CdS nanorods as a model hybrid nanoparticle system. Such sensors enable emissions to be reduced by optimizing combustion control. The axial resolution is usually significantly poorer, typically by a factor of three, due to the longitudinal intensity distribution within the focal spot.

The ultrafast onset of exciton formation in 2D semiconductors

In addition, there have been some medical problems with stents, such as the risk of restenosis and limited biocompatibility.

Ultrafast Dynamics of Quantum Systems

Optically active elementary excitations in semiconductors.

Ultrafast lasers—reliable tools for advanced materials processing

The effects of size, shape, and compn. Moreover, the on-chip interferometer is more robust due to the inherently stable integrated waveguide structures.

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It is interesting to note that in the simplest case of a two parabolic-band semiconductor and under stationary conditions, the semiconductor Bloch equations theory is formally equivalent to the BCS theory of superconductors with an effective Hamiltonian that is the direct analog of Anderson's pseudo-spin Hamiltonian. Consequently, one can use THz fields to monitor and control ultrafast processes in semiconductors or to produce ultrafast switching in semiconductor components.

Direct and simultaneous observation of ultrafast electron and hole dynamics in germanium

Traditionally , the time - dependent character of the c - c interaction has been. Thermal diffusion to the surrounding area of the laser-irradiated

region can thus be eliminated as heat transfer by bulk thermal conduction occurs on a time scale longer than the electron—phonon coupling time. Nature 414 6861 : 286—289.

Inaugural Article: Ultrafast dynamics of many

This prediction was verified experimentally, and in the case of high-quality samples delays more than 1 order of magnitude longer than the excitation pulses were observed, with a coherent wave mixing emission appearing as a pulse completely separated from the laser pulse. Thus, relative to the hole, the electron spreads over many sites following a distribution described by an hydrogenic envelope wavefunction.

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