

## Transient Intersubband Optical Absorption in Double Quantum Well Structure

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(Received: 2004-7-28; Revised: )

**Abstract:** The microscopic equations of motion including many-body effects are derived to study the intersubband polarization in the double quantum well structure induced by an ultrafast pumping infrared light. Based on the self-consistent field theory, the transient probe absorption coefficient is calculated. These calculations are beyond the previous steady-state assumption. Transient probe absorption spectra are calculated under different pumping intensity and various pump probe delay.

PACS: 78.67.De, 42.65.-k

Key words: optical absorption, double quantum well, intersubband

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