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标题: Saturation of intraband absorption in a self-assembled double-quantum-dot molecule

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摘要: Saturation absorption induced by interaction between the double-quantum-dot molecule and the intense-laser-field has been studied theoretically by using the effective mass and adiabatic approximations. Saturation absorption arising from the transition between bonding and antibonding states is strongly dependent on the dot-separation, the dot size and the incident light intensity. Absorption spectra appeared at THZ frequency-domain are bleached significantly and broadened under the high incident light intensity. Saturation intensities are of the order of MW/cm<sup>2</sup> and the calculation results coincide with that of the experimental measurement. Finally, the influence of the relaxation time on the saturation absorption has been also studied. (C) 2012 Elsevier B.V. All rights reserved.

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