

## عنوان مقاله:

Proposal for Modeling of FWM Efficiency of QD-SOA Based on the Pump/Probe Measurement Technique

## محل انتشار:

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## خلاصه مقاله:

In this paper, we propose a numerical model for Four-Wave Mixing (FWM) efficiency in quantum dot semiconductor optical amplifiers (QD-SOAs). Despite the complexities of the equations governing the QD-SOAs, simple models with short computational time are essential to analyze and design them. We present equations of the QD-SOAs coherently and calculate FWM efficiency in the QD-SOA using the pump/probe technique. In this model, the rate equations take into account the occupation probabilities of each level instead of the carrier densities. Moreover, the transfer matrix based on the pump/probe measurement technique is solved in two dimensions, space and time, using the Slice technique. The described model is implemented in the MATLAB environment. The proposed model is simpler than similar models and has a shorter computational time than them.

## کلمات کلیدی:

(Modeling, Quantum Dot Semiconductor Optical Amplifier (SOA), Four-Wave Mixing (FWM)

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1908474>

