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Simultaneous demonstration on 10 Gb/s wavelength conversion four-wave mixing and cross-gain modulation in semiconductor optical amplifier

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Keywords

semiconductor optical amplifier (SOA), cross-gain modulation (XGM), four-wave mixing (FWM), wavelength conversion

Abstract

A study is presented on wavelength conversion in semiconductor optical amplifier (SOA) when the power of the input pump light is as much as that of the input signal light, in which the four-wave mixing (FWM) effect and the cross-gain modulation (XGM) effect occur obviously at the same time and the modulation format of the converted signal light is inverted to that of the input signal light. Experimental results are in agreement with theoretical analysis.



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