Quantum Dot Optical Amplifier

This chapter describes the modeling of optical amplifiers that contain semiconductor quantum dots (QDs) as active media. Quantum-dot semiconductor optical amplifiers differ from conventional ...

Quantum dot-semiconductor optical amplifiers (QD-SOA) are characterized by ultrafast gain recovery time (GRT) of the order of magnitude of several picoseconds, broadband gain, low ...

Here, we demonstrate, for the first time, a broadband semiconductor optical amplifier (SOA) based on a novel chirped multilayered quantum dot (QD) structure, which is suitable for bi ...

Quantum dot (QD)-based semiconductor optical amplifiers (SOAs) are critical amplifying elements for future high-speed, cost-effective optical communication networks.

QDs have tunable emissions via size changes and are potentially used in nonlinear optics and photovoltaics. The variation in shape and size of QDs define their best nonlinear optical ...

multiple layers of quantum dots are often used in the active (gain) region. The quantum dot semiconductor optical amplifiers (QD-SOA) have some advantages over conventional bulk or ...

The first involves the introduction of a revolutionary quantum dot semiconductor optical amplifier (QD-SOA), whose three-dimensional quantum ...

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High gain and high saturation output power silicon-based semiconductor optical amplifiers (SOAs) are essential elements in future large-scale silicon photonic integrated circuits (PICs) to compensate for ...

A comprehensive study has been conducted on quantum dot reflective semiconductor optical amplifiers (QD-RSOAs) with optical pumps (OPs). ...

This paper reviews the recent progress of quantum-dot semiconductor optical amplifiers developed as ultrawideband polarization-insensitive high-power amplifiers, high-speed signal regenerators, and ...

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The first involves the introduction of a revolutionary quantum dot semiconductor optical amplifier (QD-SOA),

whose three-dimensional quantum confinement effect delivers outstanding ...

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