Semiconductor optical amplifier-based all-optical gates for high-speed optical processing

Semiconductor optical amplifiers are useful building blocks for all-optical gates as wavelength converters and OTDM demultiplexers. The paper reviews the progress from simple gates using cross-gain modulation and four-wave mixing to the integrated interferometric gates using cross-phase modulation. These gates are very efficient for high-speed signal processing and open up interesting new areas, such as all-optical regeneration and high-speed all-optical logic functions.
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.809 SNIP 2.867
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.403 SNIP 2.495
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.361 SNIP 1.913
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.077 SNIP 2.448
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.901 SNIP 2.584
Scopus rating (2004): SJR 2.781 SNIP 2.592
Scopus rating (2003): SJR 3 SNIP 3.092
Scopus rating (2002): SJR 2.514 SNIP 2.529
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 2.249 SNIP 1.935
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.992 SNIP 1.364
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 3.471 SNIP 1.6

Original language: English
Electronic versions:
kristian.pdf
DOIs:
10.1109/2944.902198

Bibliographical note
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Source: orbit
Source-ID: 256472
Research output: Research - peer-review › Journal article – Annual report year: 2000