# Energy-efficient mounting of vertical-cavity surface-emitting lasers for edge computing

Abstract: Vertical-cavity surface-emitting lasers (VCSELs) with monolithic high contrast gratings (MHCGs) as top coupling mirrors are highly attractive nanophotonic components with ...

In this work, we demonstrate the advantages of surface microstructure-based multi-junction cascaded vertical-cavity surface-emitting lasers (multi-junction VCSELs) in delivering high-power and ultra-high ...

High-speed vertical-cavity surface-emitting lasers (VCSELs) at different wavelengths present the backbone of high-speed optical links showing large bandwidth density. The state of the ...

These designs are essential for improving the energy-efficiency of modules by optimizing the interplay of electronic driver and photonic device.

General rules that describe how to achieve extremely energy-efficient data transmission with oxide-confined VCSELs are derived, explained, and verified by data transmission experiments.

In this paper, we review the recent progress of energy-efficient high-speed VCSELs with wavelengths from 850 nm to 1060 nm. It is organized as follows: In Chapter 2, we will discuss the ...

As can be seen in Fig. 15, although the series array has a higher slope efficiency, larger output power at the receiving-end, and faster modulation speed than does the single unit reference device, they have ...

Semiconductor lasers, including edge emitting lasers (EELs) and vertical cavity surface emitting lasers (VCSELs), have gained considerable attention in the context of integrated...

The larger output aperture of VCSELs, compared to most edge-emitting lasers, produces a lower divergence angle of the output beam, and makes possible high coupling efficiency with optical fibers.

# Energy-efficient mounting of vertical-cavity surface-emitting lasers for edge computing

Web: https://tlaletsoglobal.co.za