Special Issue

Next-Generation Vertical-Cavity Surface-Emitting Lasers

Message from the Guest Editors

Vertical-cavity surface-emitting lasers (VCSELs) have become light sources of great importance for industrial, sensing and consumer applications. They offer many inherent advantages, such as efficient high-speed modulation at low currents, superior fiber coupling efficiency, wafer-level fabrication and scalability in high-density array architectures. At present, the growing bandwidth demands for data communication and new applications under research, including autonomous vehicle systems (LiDAR in particular), gas detection, biomedical sensing, imaging, quantum computing, chip-scale atomic devices, etc., drive the significant development of VCSEL technology. Novel trends and concepts in the design, configuration and fabrication of VCSELs emerge to meet the specification requirements of the next generation of photonic systems.

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