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Vertical-Cavity Surface-Emitting Laser, 1977-1992

The Vertical-Cavity Surface-Emitting Laser (VCSEL) was conceived by Kenichi Iga at Tokyo Institute of Technology in 1977. The device was designed for single-mode operation, easy monolithic manufacturability, and frequency tunability. His team made breakthroughs with the first current-driven VCSEL in 1979, room temperature continuous operation in 1988, and mechanical continuous frequency tuning in 1992. VCSELs gained wide usage in everyday applications, including datacenters and optical sensing.

(66-words)