

The Semiconductor for Laser

The Next Phase

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The Semiconductor laser (SCL) is the lynchpin of optoelectronics/Photonics. The present design powers up the internet, dates back to the 1980. It is now combined monolithically with Si-based electronics to form Integrated Opto Electronics Circuits. A re-examination of the basic structure of the laser led recently to a new architecture which boasts coherence, as measured by the Schawlow-Townes linewidth on the frequency spectral density, some three orders of magnitude better than current commercial lasers. These laser also display essential insensitivity to the coherence destroying reflections, and thus may obviate the need for optical isolators at the output of the lasers.