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### State-of-the-art performance of widely tunable twin-guide laser diodes

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The sampled grating tunable twin-guide (SG-TTG) laser diode is a DFB-like tunable laser that employs Vernier-effect tuning to achieve wide wavelength tuning. In contrast to most other monolithic widely tunable lasers (which are usually DBR-type lasers), a phase tuning section is not needed and, hence, the SG-TTG laser requires at least one tuning current less than comparable devices.

Design aspects and tuning characteristics of the SG-TTG laser will be discussed. The devices provide full wavelength coverage over a 40nm-broad tuning range that is centered at 1.54 $\mu$ m. The tuning range consists of several up to 8.2nm large regions where mode-hop-free tuning is possible. Over the whole tuning range, the side-mode suppression ratio and the output power remains above 35dB and 10mW, respectively.