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【180】 Continuous-Wave Ring Interband Cascade Lasers for Spectroscopic Sensing

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Infrared spectroscopy is a reliable tool for chemical sensing in various fields from industry over environmental monitoring to medicine. Interband cascade lasers (ICLs) have proven to be important light sources for such applications. Utilization of ring-shaped laser geometries provides a collimated beam profile as well as vertical light emission. We combine the ring geometry with the ICL technology and present the first continuous-wave ring ICL. The laser provides single-mode emission at $4.4\mu\text{m}$, which makes it an ideal candidate for various spectroscopic applications. In addition, the relatively low power consumption of ICLs facilitates lightweight sensors for hand-held devices.

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