

Interband Cascade Technology for Long Wavelength GaSb based Lasers and LEDs

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Since the first demonstration of continuous wave operation [1] Interband Cascade Lasers (ICLs) have shown tremendous improvement in their performance. Not only cw operation up to a temperature of more than 100°C has been shown [2] but also the capability of the interband cascade concept to operate to wavelengths beyond 13μm [3]. Recently we demonstrated another design improvement which focusses on the mitigation of intervalence band absorption [4]. This in turn led to a significant improvement of laser performance in the wavelength region around 6 μm [5]. A spectrum and LIV characteristics of an epi down mounted laser are shown in Figure 1. Furthermore, the latest results on resonant cavity ICLEDs and long wavelength ICLEDs with emission um to 10.2μm will be shown.

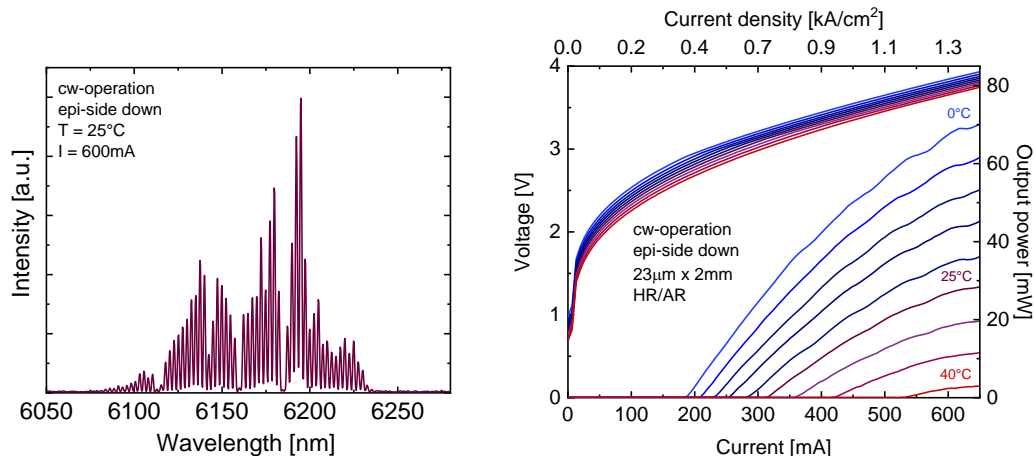


Figure1: Spectrum and LIV characteristics of an ICL operating beyond 6μm in cw.

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