

Figure 1: (a) Photoluminescence spectrum of the as-grown material showing O-band operation. (b) High-angle annular dark field scanning transmission electron microscope (HAADF STEM) cross-section image of the device. (c) Layer stack diagram of the devices.



Figure 2: (a) Photograph of the 300 mm silicon photonics wafer with diced coupons prior to growth. (b) Microscope image of the waveguide-coupled lasers during operation.



Figure 3: (a) LIV curves for the waveguide-coupled laser as measured in-fiber off-chip. (b) IV curve for the waveguide-coupled photodetectors measured with 1300 nm laser input.