

ABSTRACT

SEMICONDUCTOR OPTICAL AMPLIFIER LIGHT COMBINER

Disclosed is a coherent optical combining photonic integrated circuit that can detect and align light amplified by a scalable quantity of semiconductor optical amplifiers (SOAs). The light can be split into beams and amplified by individual SOAs in a PIC and combined via couplers in the PIC. The combined light can be measured using a photodetector and the light beams can be adjusted based the photodetector measurement to coherently combine the light to achieve high optical power from the photonic integrated circuit.

Figure 5.