Investigation of red-emitting distributed Bragg reflector lasers by means of numerical simulations

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Abstract

The authors report theoretical and experimental results on the properties of distributed Bragg reflector semiconductor lasers. Using the traveling wave equation model, they show that a proper choice of coupling coefficient and front facet reflectivity allows an optimisation of the laser operation, such that for wide range of injected current into the active region the laser emits a temporally stable output power. The numerical results are in a qualitative agreement with the measured characteristics.