

Title (en)

METHOD AND APPARATUS FOR SUPPRESSION OF SPATIAL-HOLE BURNING IN SECOND OR HIGHER ORDER DFB LASERS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR UNTERDRÜCKUNG VON RÄUMLICHEM LOCHBRENNEN IN DFB LASERN ZWEITER ODER HÖHERER ORDNUNG

Title (fr)

PROCEDE ET DISPOSITIF D'ELIMINATION DE LA DEPLETION AXIALE DES PORTEURS DANS DES LASERS A CONTRE-REACTION DISTRIBUEE (DFB) DE SECOND ORDRE OU D'ORDRE SUPERIEUR

Publication

EP 1636884 A1 20060322 (EN)

Application

EP 04737797 A 20040609

Priority

- CA 2004000855 W 20040609
- US 47726203 P 20030610
- CA 2431969 A 20030611

Abstract (en)

[origin: WO2004109873A1] A surface emitting semiconductor laser is shown having a semiconductor laser structure (10) defining an intrinsic cavity having an active layer (22), opposed cladding layers contiguous to said active layer (22), a substrate (17) and electrodes (12, 14) by which current can be injected into said semiconductor laser structure (10) to cause said laser structure to emit an output signal in the form of at least a surface emission. The intrinsic cavity is configured to have a dominant mode on a longer wavelength side of a stop band. A structure such as a buried heterostructure for laterally confining an optical mode is included. A second order distributed diffraction grating (24) is associated with the intrinsic cavity, the diffraction grating (24) having a plurality of grating elements (27, 28) having periodically alternating optical properties when said current is injected into said laser structure. The grating is sized and shaped to generate counter-running guided modes within the intrinsic cavity wherein the grating (24) has a duty cycle of greater than 50% and less than 90%. Also provided is a means for shifting a phase (26) of said counter-running guided modes within the cavity to alter a mode profile to increase a near field intensity of said output signal.

IPC 1-7

H01S 5/187; H01L 33/00

IPC 8 full level

H01S 5/065 (2006.01); **H01S 5/12** (2006.01); **H01S 5/187** (2006.01); **H01S 5/42** (2006.01)

CPC (source: EP KR)

H01S 5/065 (2013.01 - EP KR); **H01S 5/187** (2013.01 - KR); **H01S 5/1228** (2013.01 - EP KR); **H01S 5/187** (2013.01 - EP); **H01S 5/42** (2013.01 - EP KR)

Citation (search report)

See references of WO 2004109873A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

WO 2004109873 A1 20041216; AU 2004246310 A1 20041216; EP 1636884 A1 20060322; JP 2006527485 A 20061130; KR 20060025168 A 20060320

DOCDB simple family (application)

CA 2004000855 W 20040609; AU 2004246310 A 20040609; EP 04737797 A 20040609; JP 2006515587 A 20040609; KR 20057023742 A 20051209