

Title (en)

OPTO-ELECTRONIC COMPONENTS WITH METAL STRIP OPTICAL GUIDANCE

Title (de)

OPTOELEKTRONISCHES BAUTEIL MIT METALLBAND ZUR LICHTWELLENFÜHRUNG

Title (fr)

COMPOSANTS OPTOELECTRONIQUES A GUIDAGE DE L'ONDE OPTIQUE PAR RUBAN METALLIQUE

Publication

**EP 1576705 A2 20050921 (FR)**

Application

**EP 03778379 A 20030930**

Priority

- FR 0302867 W 20030930
- FR 0212133 A 20021001

Abstract (en)

[origin: WO2004032297A2] The invention concerns opto-electronic components with multilayer heterostructures, and in particular laser diodes emitting magnetic transverse polarization. One of the technical problems of this type of component is to ensure proper confinement of emission optical modes in the plane of the layers by modulating the effective index, so as to obtain good optical quality of the emission mode. The invention proposes to perform modulation of the effective index of the planar guide mode by coupling it with the surface plasmon obtained by deposition of a metal layer on the component heterostructure. Thus the planar structure of the component is maintained while the desired effective index modulation is obtained. This arrangement is applicable to different types of laser structures, such as, for example, Fabry-Pérot type quantum cascade laser, but also DFB or A-DFB, ARROW type lasers or still photonic crystals. The shape of the metal deposit is simply adapted to each type of structure.

IPC 1-7

**H01S 5/34**

IPC 8 full level

**H01S 5/34** (2006.01); **H01S 5/042** (2006.01); **H01S 5/10** (2006.01); **H01S 5/12** (2006.01); **H01S 5/183** (2006.01); **H01S 5/20** (2006.01); **H01S 5/343** (2006.01)

CPC (source: EP US)

**B82Y 20/00** (2013.01 - EP US); **H01S 5/04256** (2019.07 - EP US); **H01S 5/3401** (2013.01 - EP); **H01S 5/04254** (2019.07 - EP US); **H01S 5/1046** (2013.01 - EP); **H01S 5/1228** (2013.01 - EP); **H01S 5/20** (2013.01 - EP); **H01S 5/34306** (2013.01 - EP); **H01S 2301/145** (2013.01 - EP)

Citation (search report)

See references of WO 2004032297A2

Designated contracting state (EPC)

DE FR GB IT SE

DOCDB simple family (publication)

**FR 2845208 A1 20040402**; AU 2003285390 A1 20040423; AU 2003285390 A8 20040423; EP 1576705 A2 20050921; WO 2004032297 A2 20040415; WO 2004032297 A3 20041028

DOCDB simple family (application)

**FR 0212133 A 20021001**; AU 2003285390 A 20030930; EP 03778379 A 20030930; FR 0302867 W 20030930