

Title (en)

PHASE-LOCKED SEMICONDUCTOR LASER ARRAY AND A METHOD OF MAKING SAME.

Title (de)

PHASENGEKOPPELTE HALBLEITERLASERREIHENANORDNUNG UND VERFAHREN ZU IHRER HERSTELLUNG.

Title (fr)

RESEAU DE LASER A SEMI-CONDUCTEUR A ASSERVISSEMENT DE PHASE ET SON PROCEDE DE REALISATION.

Publication

EP 0147417 A4 19870729 (EN)

Application

EP 84901854 A 19840411

Priority

US 50548983 A 19830617

Abstract (en)

[origin: WO8500076A1] A phase-locked laser array (10) including a plurality of closely spaced channels (26) in the surface (20) of the substrate (18) with lands (24) therebetween with the laser oscillation occurring in a cavity region over each of the channels (26). A broad-area electrical contact (44) provides uniform electrical current flow to each of the lasing regions. The individual oscillators are coupled by the overlap of their evanescent optical fields. The invention also includes a method of fabricating this array (10) which includes the steps of forming a plurality of corrugations in the surface of a substrate (300), forming a solution having a super-saturated growth condition for planar and concave surfaces and an under-saturated growth condition for convex surfaces, contacting the corrugated surface to the solution thereby partially melting the convex portions of the surface and forming planar lands (502) between the concave portions of the corrugations. Growth over the lands is delayed thereby providing a planar surface of the first layer upon which the remaining layers are then sequentially deposited.

IPC 1-7

H01L 21/208

IPC 8 full level

H01L 33/00 (2010.01); **H01L 21/208** (2006.01); **H01L 33/08** (2010.01); **H01L 33/24** (2010.01); **H01S 5/00** (2006.01); **H01S 5/026** (2006.01); **H01S 5/40** (2006.01); **H01S 5/223** (2006.01); **H01S 5/24** (2006.01)

CPC (source: EP)

H01L 33/0062 (2013.01); **H01L 33/08** (2013.01); **H01L 33/24** (2013.01); **H01S 5/4031** (2013.01); **H01S 5/2234** (2013.01); **H01S 5/2237** (2013.01); **H01S 5/24** (2013.01)

Citation (search report)

- [A] R.C.A. REVIEW, vol. 44, no. 1, March 1983, pages 64-100, Princeton, New Jersey, US; D. BOTEZ et al.: "Crystal growth of mode-stabilized semiconductor diode lasers by liquid-phase epitaxy"
- [XP] APPLIED PHYSICS LETTERS, vol. 43, no. 12, December 1983, pages 1096-1098, American Institute of Physics, New York, US; D. BOTEZ et al.: "High-power phase-locked arrays of index-guided diode lasers"
- See also references of WO 8500076A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

WO 8500076 A1 19850103; CA 1253608 A 19890502; EP 0147417 A1 19850710; EP 0147417 A4 19870729; IT 1209541 B 19890830; IT 8421015 A0 19840521; JP H0573075 B2 19931013; JP S60501634 A 19850926

DOCDB simple family (application)

US 8400548 W 19840411; CA 456052 A 19840607; EP 84901854 A 19840411; IT 2101584 A 19840521; JP 50206584 A 19840411