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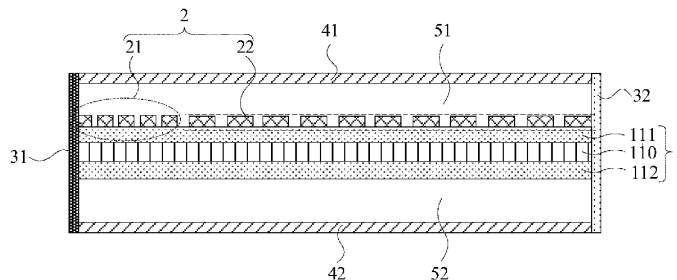
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(54) Title: SEMICONDUCTOR LASER DEVICE AND PREPARATION METHOD THEREFOR

(54) 发明名称: 半导体激光器及其制备方法



[图3]

(57) Abstract: A high-speed directly modulated semiconductor laser device and a preparation method therefor. The semiconductor laser device comprises an optical waveguide (1) and an optical grating (2), which is formed by means of a one-step etching process, wherein the optical grating (2) comprises a first optical grating portion (21) and a second optical grating portion (22), which are arranged side by side. The first optical grating portion (21) and the second optical grating portion (22) can effectively control a lasing wavelength and a photon-photon resonance frequency, and generate a load mismatch resonance effect, such that a relatively high yield can be realized while effectively improving the modulation bandwidth of the directly modulated semiconductor laser device, and an FP cavity is prevented from being formed from the reflection of front and rear end faces of the laser device, and thus multi-longitudinal-mode oscillation generated by the laser device at a high temperature or low temperature is prevented.

(57) 摘要: 一种高速直调的半导体激光器及其制备方法, 半导体激光器包括光波导(1)以及通过一次刻蚀工艺所形成的光栅(2); 光栅(2)包括并排设置的第一光栅部分(21)和第二光栅部分(22); 第一光栅部分(21)和第二光栅部分(22)可以有效控制激光波长和光子-光子共振频率, 并产生负载失谐共振效应, 可以在有效提升直调式半导体激光器调制带宽的同时实现较高的良品率, 以及避免因激光器前后端面的反射而形成FP腔, 导致激光器在高温或低温下产生多纵模振荡。

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NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚
(AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE,
BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR,
HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO,
PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN,
TD, TG)。

根据细则4.17的声明:

- 关于发明人身份(细则4.17(i))
- 关于申请人有权申请并被授予专利(细则4.17(ii))
- 发明人资格(细则4.17(iv))

本国际公布:

- 包括国际检索报告(条约第21条(3))。