

РСТ

ВСЕМИРНАЯ ОРГАНИЗАЦИЯ
ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ
Международное бюро



МЕЖДУНАРОДНАЯ ЗАЯВКА, ОПУБЛИКОВАННАЯ В СООТВЕТСТВИИ
С ДОГОВОРом О ПАТЕНТНОЙ КООПЕРАЦИИ (РСТ)

(51) Международная классификация изобретения ⁷ : H01S 5/32	A1	(11) Номер международной публикации: WO 00/10235 (43) Дата международной публикации: 24 февраля 2000 (24.02.00)
(21) Номер международной заявки: PCT/RU99/00275 (22) Дата международной подачи: 5 августа 1999 (05.08.99) (30) Данные о приоритете: 98114581 10 августа 1998 (10.08.98) RU (71)(72) Заявитель и изобретатель: ШВЕЙКИН Василий Иванович [RU/RU]; 117393 Москва, ул. Архитектора Власова, д. 33, корп. 1, кв. 11 (RU) [SHVEIKIN, Vasily Ivanovich, Moscow (RU)]. (74) Агент: КУРЕННАЯ Оксана Николаевна; 119121 Москва, 1-й Неопалимовский пер., д. 3/10, кв. 19 (RU) [KURENNAYA, Oksana Nikolaevna, Moscow (RU)].	(81) Указанные государства: AL, AM, AT, AU, BA, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, ID, IL, IS, JP, KG, KP, KR, KZ, LK, LT, LU, LV, MD, MK, MN, MX, NO, NZ, PL, PT, RO, SD, SE, SG, SI, SK, TJ, TM, TR, UA, US, UZ, VN, YU, евразийский патент (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), европейский патент (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), патент ARIPO (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), патент OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Опубликована С отчетом о международном поиске. С измененной формулой изобретения и объяснением.	



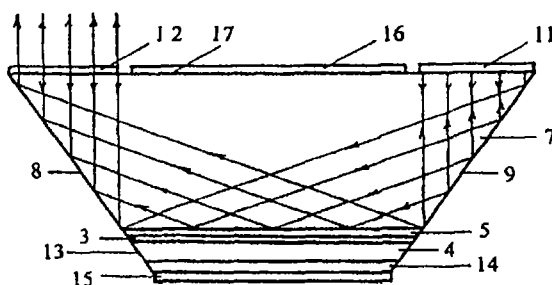
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(54) Title: INJECTION LASER

(54) Название изобретения: ИНЖЕКЦИОННЫЙ ЛАЗЕР



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(57) Abstract

The present invention relates to an injection laser in which the optical resonator has a particular structure. The volume of the optical resonator medium includes an amplification area active volume for an intensive outlet amplification as well as a passive volume for the radiation inlet area (7). The volumes include a number of layers that form a laser heterostructure (2) and have compositions and thicknesses determined correspondingly. The optical faces (8, 9) of the radiation inlet area (7) have different configurations, while said laser further uses ohmic contacts (15, 16). It is thus possible to essentially determine the formation area of the laser radiation modes as well as the injection area of non-equilibrium carriers and of their stimulated recombination. It is also possible to increase the power of the laser radiation, to reduce the current threshold density, to increase the laser efficiency and to obtain reduced divergence angles which are close to the diffraction angle for two mutually perpendicular outlet directions of the radiation. It is further possible to increase the regularity of the single-mode generation process, to improve the spatial-spectral characteristics, to substantially reduce the wavelength dependency of the laser radiation generated on the amplitude of the pumping current, and to increase the service duration as well as the operation reliability. This invention also relates to highly efficient lasers having a laser radiation outlet which is perpendicular to the plane of the active layer, as well as to lasers having powerful laser beams with the autonomous activation thereof.