Title (en)

SEMICONDUCTOR SOLID-STATE GYROLASER HAVING A VERTICAL STRUCTURE

Title (de)

HALBLEITER-FESTKÖRPER-GYROLASER MIT VERTIKALSTRUKTUR

Title (fr)

GYROLASER A MILIEU SOLIDE SEMI-CONDUCTEUR A STRUCTURE VERTICALE

Publication

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Application

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Priority

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- FR 0411816 A 20041105

Abstract (en)

[origin: WO2006048398A2] The field of the invention concerns that of solid-state gyrolasers used in inertial navigation systems. This type of equipment is particularly used for aeronautical applications. It is possible to realize a solid-state gyrolaser from optically or electrically pumped semiconductor media. Existing gyrolasers of this last type are monolithic and have reduced sizes. They do not make it possible, on the one hand, to achieve levels of precision comparable to those of gas gyrolasers and, on the other, to implement optical methods for suppressing the frequency coupling at low rotational speeds or the temperature drifts. The invention relates to a solid-state gyrolaser comprising a semiconductor medium and constituted of assembled discrete elements thus offering the possibility to realize large-size cavities making it possible to achieve the desired levels of precision. More precisely, the gyrolaser comprises a ring optical cavity and an external cavity semiconductor amplifying medium having a vertical structure comprising a stack of gain regions that are planar and parallel to one another, the dimensions of the cavity being noticeably greater than those of the amplifying medium, said amplifying medium being used in reflection.

IPC 8 full level

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CPC (source: EP US)

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