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**Ressel et al.**

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(54) **METHOD FOR THE PASSIVATION OF THE MIRROR-FACES SURFACES OF OPTICAL SEMI-CONDUCTOR ELEMENTS**

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See application file for complete search history.

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(57) **ABSTRACT**

The aim of the invention is to simplify known passivation methods. According to said method, the semi-conductor elements are heated and cleaned in a high vacuum with a gaseous, reactive low-energy medium. A closed, insulating or slightly conductive, transparent protective layer is applied in-situ, said layer being inert in relation to the material on the mirror-type surface and the remaining components of a natural oxide. In a preferred embodiment, the optical semi-conductor elements is a GaAs-based semi-conductor laser, the reactive and low-energy medium is an atomic hydrogen and the protective layer is made of ZnSe.

**10 Claims, 2 Drawing Sheets**

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