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**Shchegrov**

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(54) **FREQUENCY STABILIZED VERTICAL EXTENDED CAVITY SURFACE EMITTING LASERS**

(58) **Field of Classification Search** ..... 353/94, 353/122; 372/43.01, 97, 99, 22, 50.11  
See application file for complete search history.

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(57) **ABSTRACT**

A vertical extended cavity surface emitting laser (VECSEL) includes intra-cavity frequency doubling. Conventional frequency control elements, such as etalons, are replaced with thin film interference filters or volume Bragg gratings.

**22 Claims, 32 Drawing Sheets**

