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摘要：制备具有外部谐振腔的胆甾相液晶激光器件。采用镀有多层膜的ITO玻璃作为基板,取向后制备1D-PC/CLC/1D-PC 结构的胆甾相液晶激光器件。该激光器件在532 nm的Nd : YAG倍频脉冲激光器泵浦下能够出射双模激光。出射激光峰位分别位于600 nm 和650 nm 胆甾相液晶的短波边缘和长波边缘,并且激光的发射阈值明显低于普通的盒式胆甾相液晶激光器件。此激光器件可以通过电压控制在单模发射之间切换,电控的阈值电压仅为6 V。

关键词：激光器 胆甾向液晶 多层膜

## Cholesteric Liquid Crystals Laser With External Cavity

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Abstract: This work reports the CLC laser based on the combination of dye-doped CLC and a PC consisting of  $\text{TiO}_2$  multilayers, with the structure as 1D-PC/dye-doped CLC/1D-PC. The device exhibits two-mode laser action. The laser wavelengths are at 600 nm and 650 nm, corresponding to the short-and long-wavelength band edges respectively. In this system, the lasing threshold is much lower than that in simple CLC cell without the PC. Additionally, two-mode laser can be switched to single-mode laser by applying above 6 V voltage.

Keywords: laser cholesteric liquid crystals multilayer film

收稿日期 2013-06-25 修回日期 2013-08-01 网络版发布日期

基金项目:

国家自然科学基金(No.61107059); 黑龙江省博士后基金(No.LBH-Z09184)

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