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1.55 μm波长InGaAsP微盘半导体激光器的室温激射性质

伍冠洪1，J. G. McInerney2

(1. 长沙理工大学 物理与电子科学学院，长沙 410076；
2. 爱尔兰国立科克大学 物理系，科克，爱尔兰)

摘 要：经过外延生长和腐蚀分离后，直径为1~10 μm的独立微盘激光器件分别被粘附在多模光纤的端面上。在室温条件下采用光学泵浦，对该类器件均实现了脉冲和连续激射，输出波长在1.5~1.525 μm之间，在脉冲和连续输出下阈值泵浦能量分别为64和109 μW，激射波长随着热效应增加而呈现红移现象。该类器件在未来全光网络和集成光路中具有良好的应用前景。

关键字： InGaAsP；微盘激光器；多模光纤；光学泵浦；集成光路

Room temperature lasing properties of 1.55 μm InGaAsP microdisk semiconductor lasers

WU Guan-hong1， J. G. McInerney2

（1. School of Physics and Electronic Science, Changsha University of Science and Technology, Changsha 410076, China;
2. Department of Physics, National University of Ireland, Cork, Ireland）

Abstract: Separate microdisk laser with diameters of 1−10 μm were attached at the facet of multi-mode fiber after epitaxial growth and etching. They were all lasing under both pulsed and countinuous wave (CW) optical pumping. The lasing wavelengths were between 1.5 and 1.525 μm. The threshold pump powers were 64 μW in pulsed operation and 109 μW in CW operation separately. Lasing wavelength shows red shift with increasing thermal effect. This device has exciting applications in future all optical networks and integrated optical circuits.

Key words: InGaAsP; micordisk lasers; multi-mode fiber; optical pumping; integrated circuits

地 址：湖南省长沙市岳麓山中南大学内　　邮编： 410083

电 话： 0731-8876765，8877197, 8830410　　传真： 0731-8877197

电子邮箱： f-ysxb@mail.csu.edu.cn