

中国激光

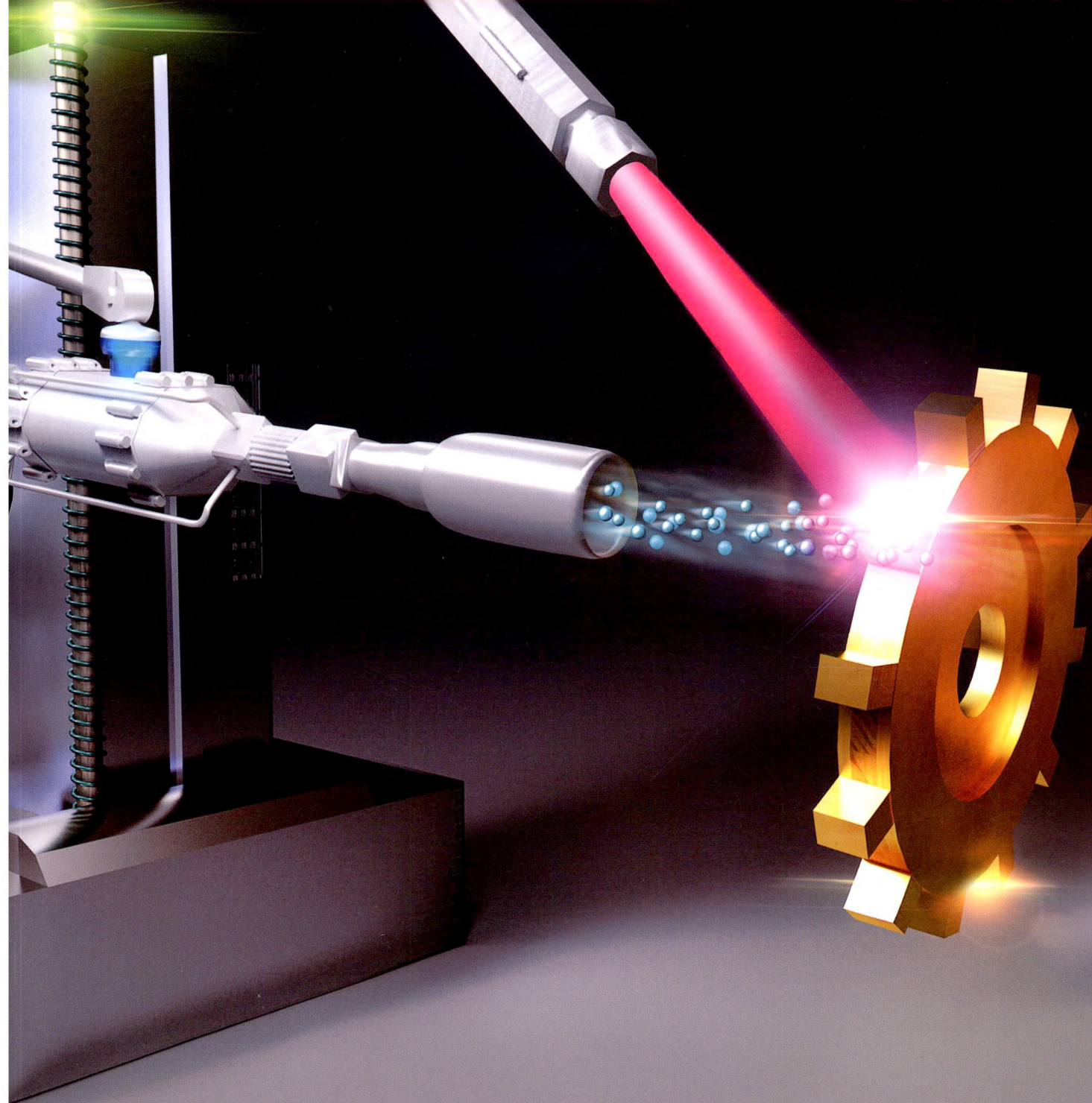
Chinese Journal of Lasers

[总第507期]

第46卷 | 第3期

Vol. 46 | No. 3

2019.3



ISSN 0258-7025



9 770258 702193

万方数据

中国科学院上海光学精密机械研究所 主办
中国光学学会

中国激光

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(总第 507 期)

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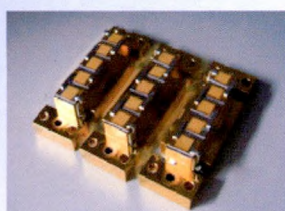
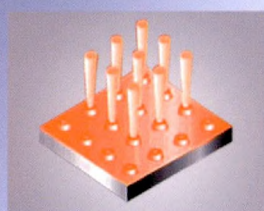
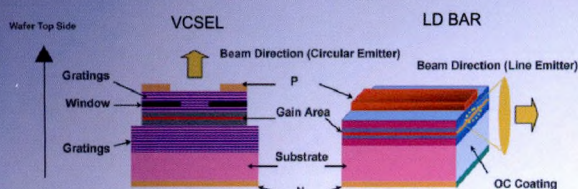
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VCSEL 芯片及抽运阵列

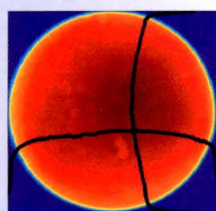


参数	VCSEL	LD BAR	VCSEL 优势
光谱宽度	~1 nm	~3 nm	窄线宽
波长温漂	0.07 nm/K	0.3 nm/K	温漂小
长期波长漂移	无漂移	漂移	长期稳定性高
工作温度	-45 — 85 °C	0 — 45 °C	耐高低温
准连续寿命	10 ¹⁰ — 2×10 ¹⁰ 次	10 ⁹ — 2×10 ⁹ 次	5 — 10 倍寿命
功率衰减	线性衰减	非线性衰减	寿命可预测

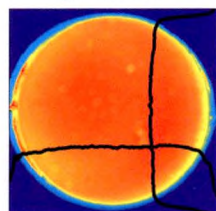
VCSEL 抽运的激光增益模块



@100 Hz, 150 A

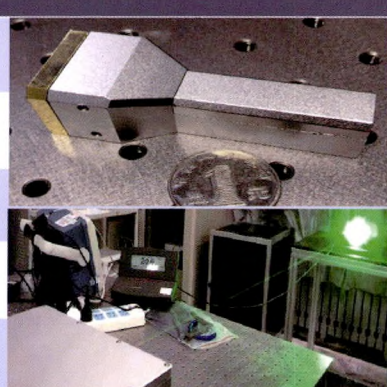


@20 Hz, 150 A



参数名称	水冷模块 (可定制)	风冷模块 (可定制)
重复频率	1 — 2000 Hz	1 — 100 Hz
抽运功率	1 — 27 kW	1.8 — 6 kW
储能范围	0.1 — 3 J @ 250 μs	0.1 — 0.6 J @ 250 μs
激光棒直径	2 — 15 mm	3 — 5 mm
抽运波长	800 — 810 nm	
适用晶体	Nd : YAG, Nd : YLF, Nd : Glass 等	
预期寿命	10 ¹⁰ — 2×10 ¹⁰ 次	
长寿命 • 均匀抽运 • 耐高温 • 高稳定性 • 高可靠性		

VCSEL 抽运的固体激光器应用 (VPSSL®)

应用方向	激光器类型	参数及特点	部分激光器图片
LIBS	端面抽运全固态风冷激光器 VPSSL®	20 Hz, 5 mJ, 5 ns 无主动温控	
激光测距	侧面抽运全固态激光器 VPSSL®	20 Hz, 100 mJ, 10 ns -45 — 85 °C	
钛宝石抽运	大能量固体激光器 VPSSL®	532 nm, 200 mJ 100 Hz, 15 ns	
医疗美容	皮秒 (亚纳秒) 种子源 VPSSL®	500 ps, 2.2 mJ, 100 Hz	
激光清洗	高重复频率大能量固体激光器 VPSSL®	100 — 1000 Hz, 100 — 500 mJ 长寿命	

