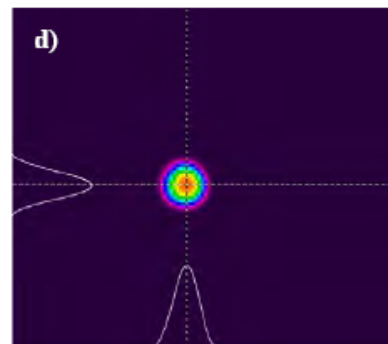
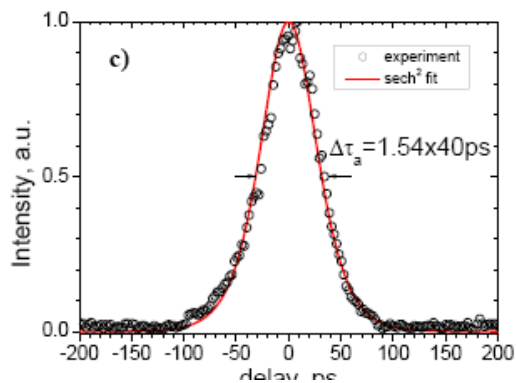
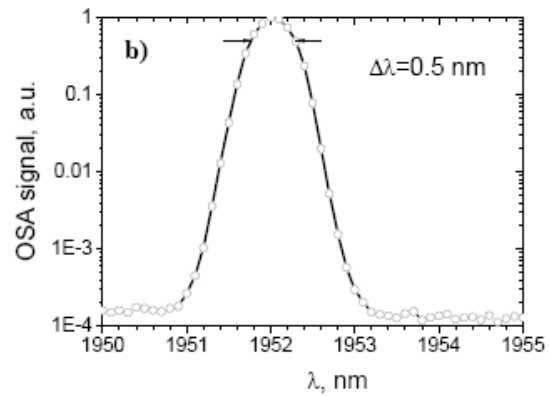
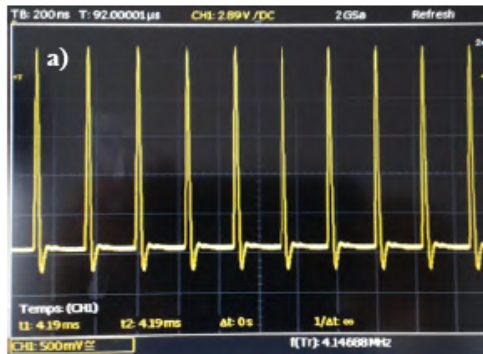


高功率 2um 皮秒激光器

Aunion HP 2.0 是一款 2um 皮秒光纤激光器，脉冲宽度为 40ps，输出功率大于 4.3 瓦，脉冲峰值功率为 25KW，单脉冲能量超过 1uJ。Aunion HP 2.0 是一款 2um 皮秒光纤激光器可被广泛用于激光切割或激光焊接等激光加工等领域，

Specification	
Operating wavelength	1952nm (-15dB)
Total output power,	> 4.3W
Repetition rate,	4.15MHz
Pulse width,	40ps
Pulse energy,	> 1μJ
Peak power,	> 25kW
M2	< 1.1
State of polarization	Not polarized
Power stability	2 % in 3 hours



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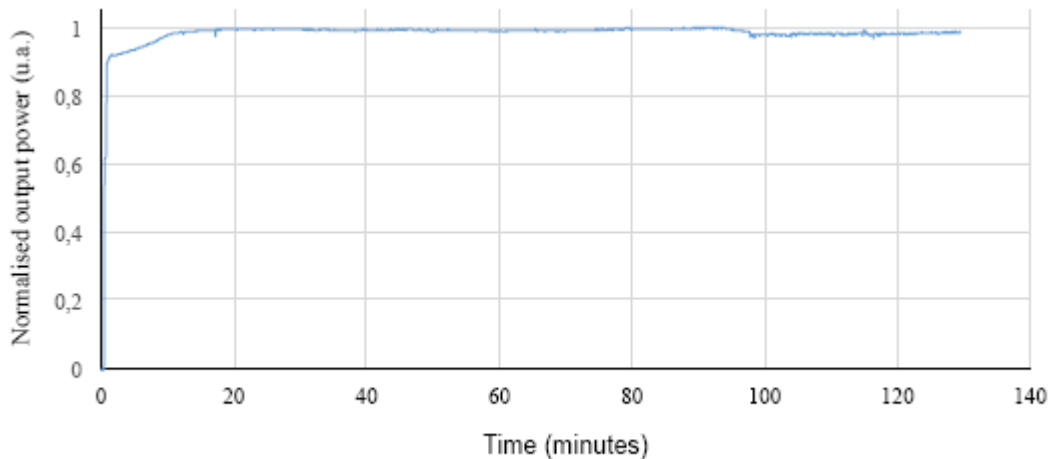
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Output power stability measured at 4W average power.

应用实例：

2um 激光辐射被一些聚合物强烈吸收。将平均功率为 3.45W 的激光器透过 30mm 的聚焦透镜，并且使得激光扫描速度在 5mm/s 以上时就可以观察到有机玻璃表面的凸起部分。当激光扫描速度在 4mm/s 以下时有机玻璃就会熔融。有机玻璃的凸起熔融是由于吸收了激光器功率的结果。因此，只有这样有机玻璃的电阻对焊实验和有机玻璃同其他聚合物的搭接焊才能实现。通过电阻对焊才能够实现两个 5mm 厚的有机玻璃模块的稳定结合。同前面相同的装置激光器被用来切纸上的聚酰亚胺薄膜膜载体。切割宽度取决于激光器的切割速度和光聚焦程度。比较完美的切割宽度 11 μm 是在移动平台移动速度为 60mm/s 时实现的。

应用一：PMMA剥除（ablation of PMMA）



Figure. 6 Optical microscope images of the lines of melted PMMA material made on surface of the sample with different scanning speeds. The laser power – 3.45 W.

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Figure. 7 The crosscut height measurements with DEKTAK 150+ stylus profiler. Scan speed from left to right: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 mm/s. Laser power – 3.45 W;

2, PMMA有机玻璃对焊 (Butt-welding of PMMA)



The top (left) and side (right) view of the joints after the butt welding process. Laser power – 3.45W.

3, 耐电晕聚酰亚胺薄膜切割 (Kapton cutting)

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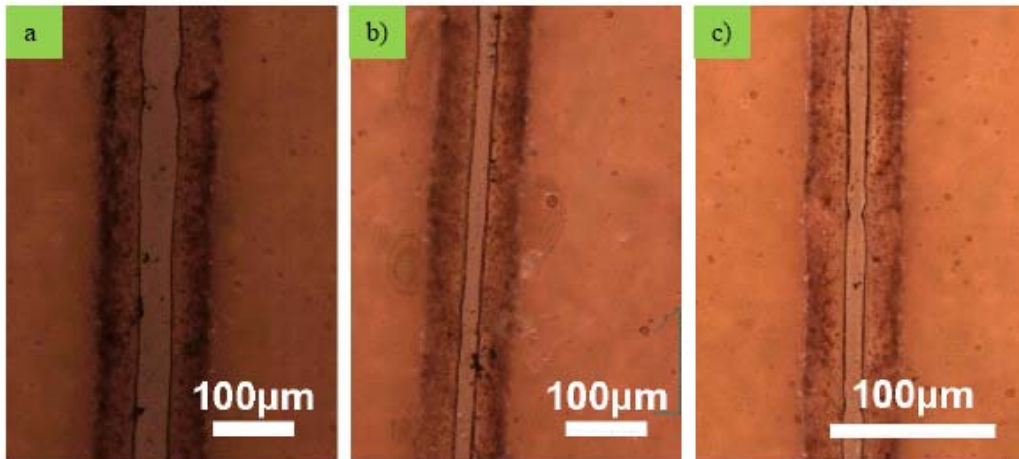


Figure 10. Optical microscope images of Kapton cuts made with the 60 mm/s scanning speed and using lenses with focal length of: 100 mm (a), 35 mm (b) and 18 mm (c).

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