

应用:

- 实验室测量
- 质量控制
- 材料特性分析
- 科学及工业领域应用



CALIBSO

All-in-one LIBS System

CALIBSO是一款基于激光诱导击穿光谱(LIBS)技术的实验室测量解决方案产品。激光诱导击穿光谱技术可用于多元素的定性和定量分析。通过高质量的样品成像和高光谱分辨率,可在无接触的情况下实现对预选择位置的测量分析。易用的Sophi nXt软件,确保了对所有组件控制的可靠性,同时也是操作人员与设备之间的中心交互界面。集成联锁电路的坚固外壳可确保操作安全和先进精密组件的长期保护。



具有微米级分辨率的高质量样品成像,可实现单点测量或区域扫描



对高空间光谱分辨优化的持久耐用型半导体泵浦激光器,可在样品表面聚焦的光斑尺寸为~70 μm



高分辨率中阶梯光栅光谱仪,具备皮米级光谱分辨能力和大的同时拍谱波长范围



用单变量或多变量数据分析对大体积材料或材料表面进行鉴定、分类和定量分析

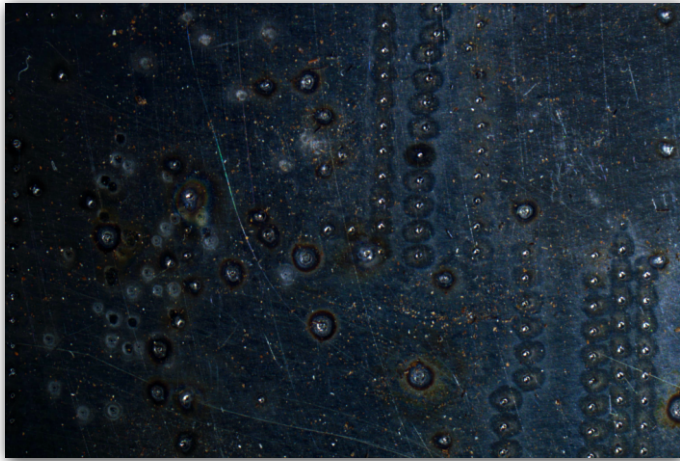


图 1: 样本图像 - 钢板

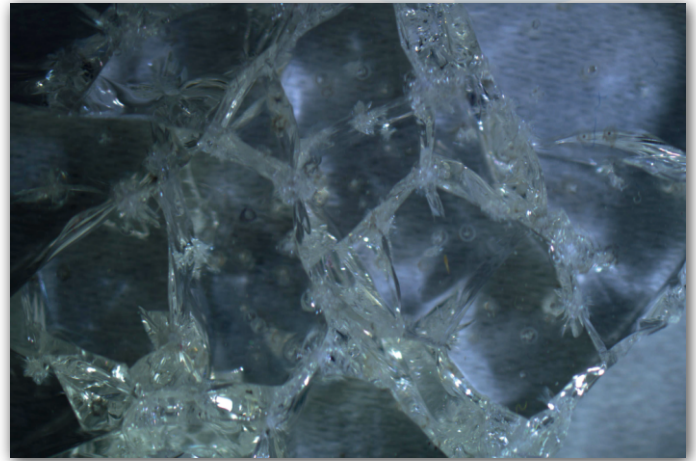


图 2: 样本图像 - 玻璃碎片

规格参数

Measuring technique	Laser-induced breakdown spectroscopy (LIBS) Imaging	Qualitative and quantitative multi-element analysis High quality imaging on a coaxial beam path with a high spatial resolution better than 50 μm
Samples formats	Solid	Bulk samples, any shape Sample size up to 50x50x50 mm^3
	Liquid	In sample vessel (cuvette, Petri dish, multiwell plate, etc.)
LIBS	Wavelength laser	1064 nm
	Excitation	Diode pumped
	Laser repetition rate	40 Hz
	Pulse energy on sample	1 - 26 mJ, stepless adjustable
	Wavelength range	210 nm - 850 nm
	Spectral resolution	28 pm - 113 pm
XYZ stage	Travel range	X = 145 mm , Y = 95 mm , Z = 50 mm
	Resolution	10 μm
	Repeatability	10 μm
Sample Imaging	CMOS camera	6 Mpixel
	Image field	$\sim 17 \times 25 \text{ mm}$
General properties	Dimensions	810 mm x 1100 mm x 590 mm
	Weight	< 200 kg
	Safety	Laser class 1
	Temperature range (in operation)	15 - 30 $^{\circ}\text{C}$
	Relative air humidity	15 - 80 %, non-condensing
Software	Measuring methods	Single measurement Continuous single measurement Multipoint measurement Mapping Depth profile combined with single, multi-point measurements, mapping Measurement "On the fly"
Analysis	LIBS	Elemental analysis (NIST database emission lines) Material classification (PCA or PLS-DA) Material quantification univariate Material quantification multivariate (PLS, Lasso)
Accessories	Standard samples	Reference materials for LIBS integrated in sample table