

Benchtop LIBS Analyzer

ATL3800

Features

Self-contained stratigraphic element change graph
 Small size: light weight and portable
 Self-contained standard curve
 Fast, with data available in 10 seconds
 Three-dimensional adjustable sample table with automatic rotation
 Technologically advanced, direct analysis of solid samples such as cores
 Simple operation and automatic data analysis and processing
 Direct characterisation of mudstone, shale, limestone, sandstone, dolomite gypsum, igneous rock, etc.
 Self-contained IPC, touch screen, no external laptop, no peripherals
 Simultaneous one-button analysis of multiple elements, Si, Al, Fe, Ca, Mg, K, Mn, Na, Ti, Ba, Sr, S, Cl, P, V, Ni, Zr, Th, U, etc.

Application

Ore Analysis
 Environmental Analysis
 Geological Exploration
 Metallurgy

Description

Laser Induced Breakdown Spectroscopy (LIBS) is an analytical technique that uses high-energy laser pulses focused directly on the surface of a sample to excite the outer electrons of atoms and generate atomic emissions spectra of the plasma.

The Benchtop LIBS Analyzer ATL3800 by Optosky enables simultaneous multi-element analysis with a single button press, detecting elements like Si, Al, Fe, and more. Its exceptional sample compatibility allows for direct analysis of solid samples and efficient processing of liquid samples, reducing handling time.

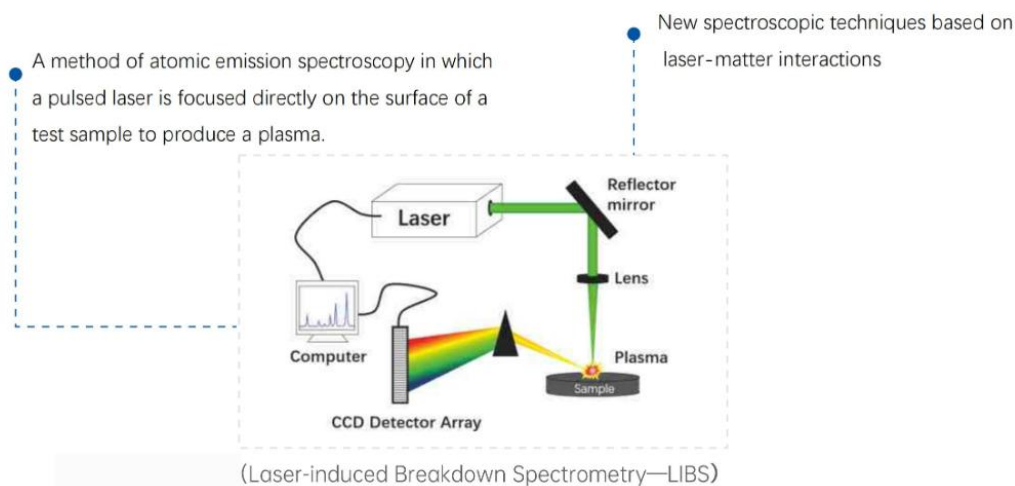
With a spatial resolution under 100 micrometers, the ATL3800 provides detailed micro-area analysis, making it ideal for industries like metallurgy, geology, and environmental monitoring. As demand for rapid, accurate analytical solutions grows, the ATL3800 stands out in battery manufacturing, semiconductors, and recycling, ensuring high-quality results quickly and effectively.



1. Parameter

Model	ATL3800
Dimensions And Weight	L (front) x WxH:425x610x660/39KG
Laser Cooling Form	Intelligent temperature control
Laser Parameter	Single pulse energy>10mJ,10Hz
Spectral Range	180-960nm
Spectral Resolution	0.10-0.22nm
Rock Characterisation	Ore, mudstone, shale, limestone, sandstone, dolomite, etc.
Sensitivity	(Li, Na, K, Be ppm) Other elements 0.05%-100%
Rock Composition Analysis	Quantitative analysis of Li, Be, Ca,Mg, Si, K, S and many other elements
Sample Analysis Time	1s-60s adjustable
Stability	RSD<5% (sample is uniform)
Automated Sample Stage	available
Optical Imaging Of Sample Surfaces	Available
Operating Voltage	AC 220V
Working Environment	Optimum working temperature 20°C, workable temperature (10-40C)Optimum working humidity <60%

2. LIBS Principle

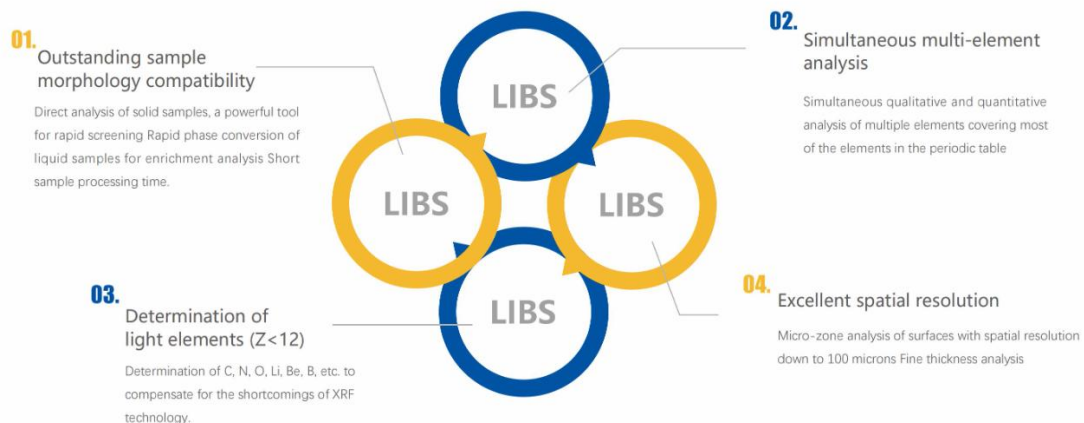


3. Fields Of Application

Suitable for use in many different fields such as ore analysis, environmental analysis, geological exploration, metallurgy, etc.



4. Technical Advantages

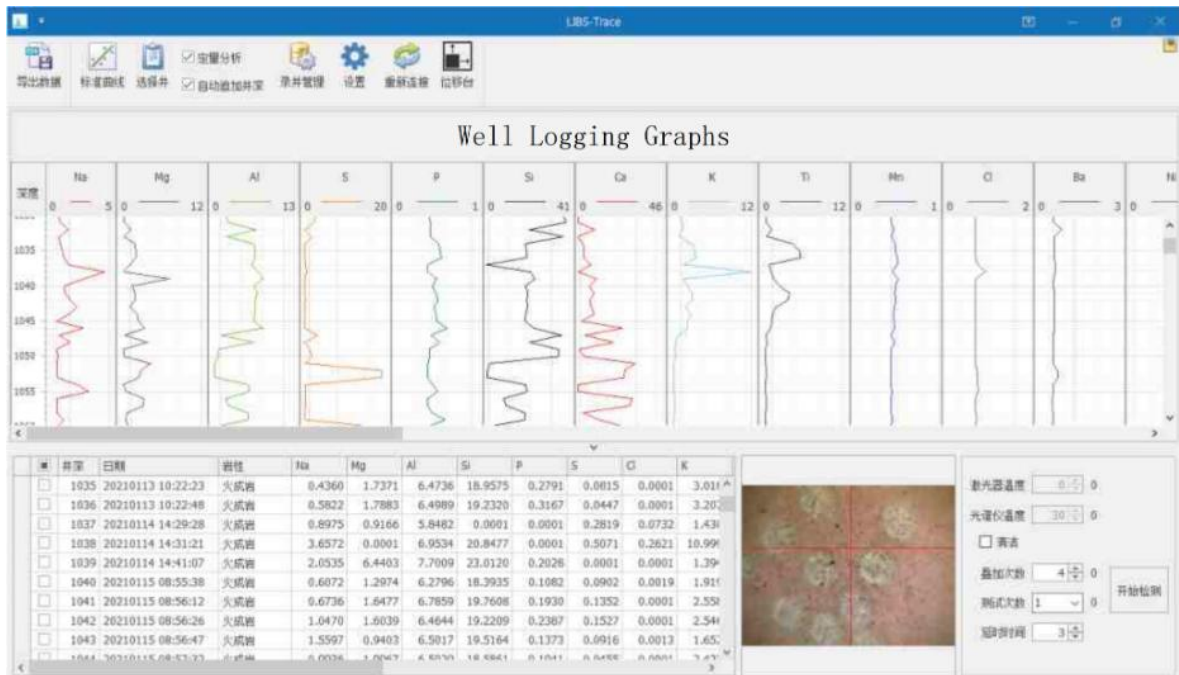


5. Operation

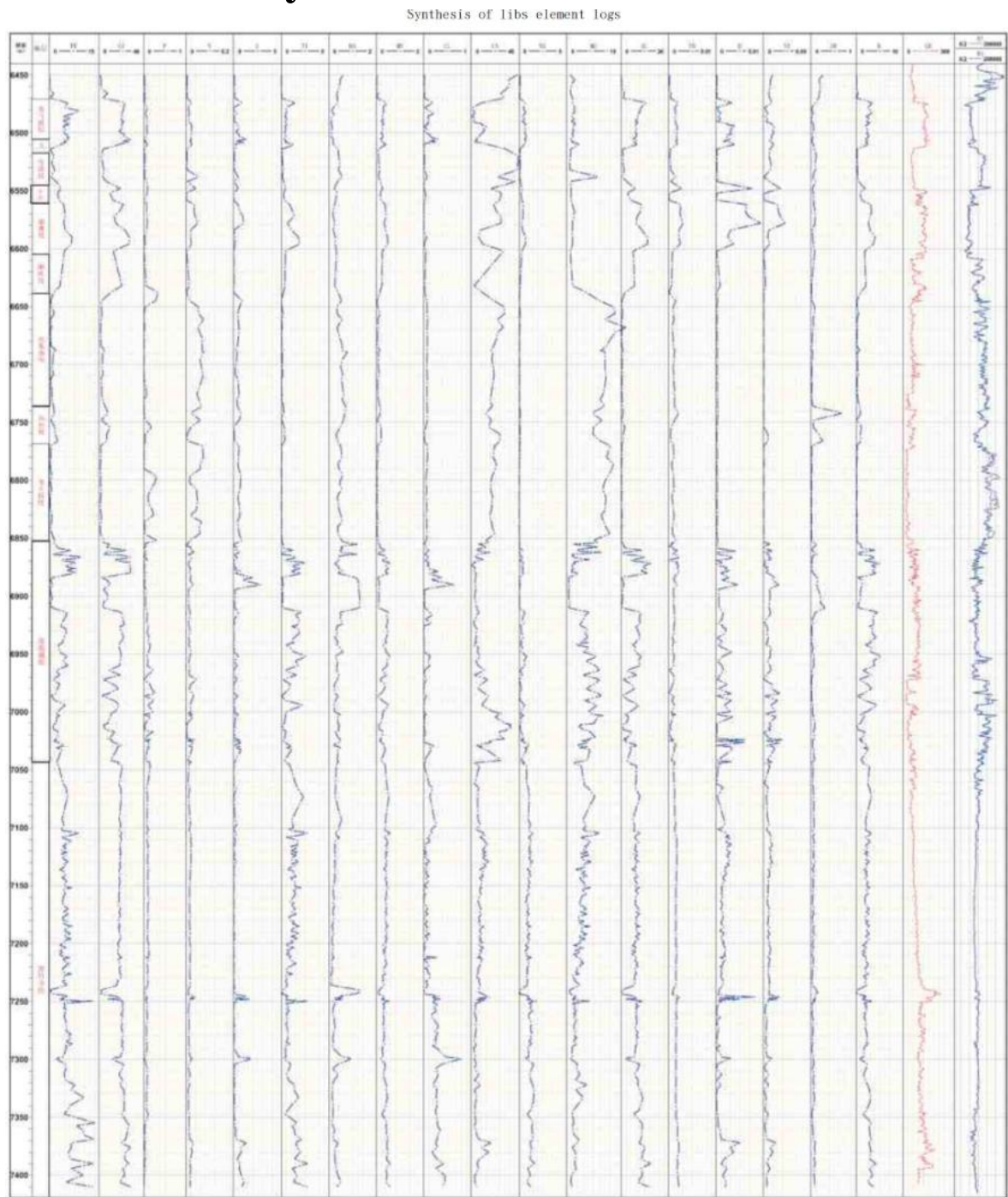
- A Sampling**
Sample preparation steps
Take a sample of about 2g of rock chip powder/core.
- Testing B**
A quick and easy test procedure
Place the prepared sample in the sample tray of the instrument, set the parameters and the data is available within 10 seconds.
- C Elemental quantification**
Automatic data processing and accurate quantitative analysis
The instrument software has a built-in quantitative elemental analysis module, which automatically provides quantitative results for the required elements (e.g. Si, A, Ca, M, Fe, K, Ti, Mn, etc.)



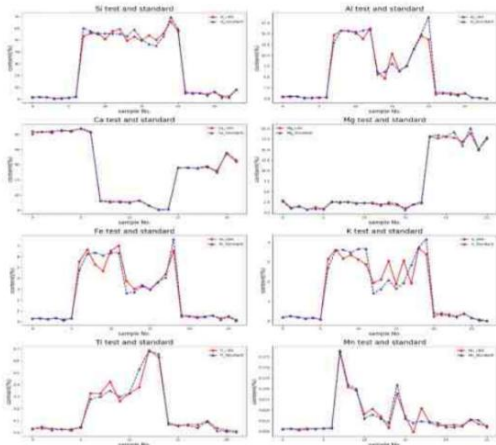
6. Interface



7. Case Study



Application 1. LIBS-TRACER sedimentary rock samples for rapid detection and analysis



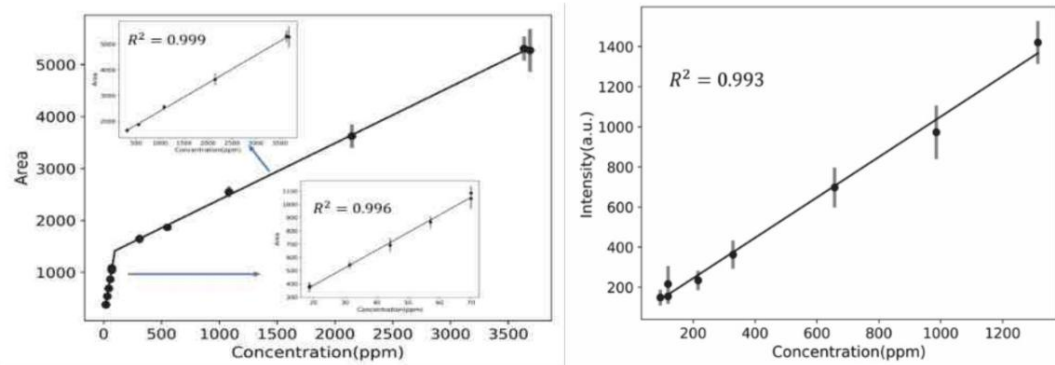
As shown on the left, the LIBS-TRACER test values are in good agreement with the standard values and, with the quantitative results of the LIBS-TRACER, it is clear that changes in the elements due to changes in lithology can be seen.

— LIBS test results
- - - Standard content

RSD values for each element detected by LIBS-TRACER(%)

Si	Al	Fe	Ca	Mg	K	Ti	Mn
7.3	6.9	6.7	2.2	6.7	7.3	7.5	5.8

Application 2: LIBS-TRACER for rapid analysis of ore samples



Application 3: LIBS-TRACER for target element analysis of non-ferrous ore samples

