

Liquid Metal Spectrometer



AI Overview

A metal liquid spectrometer is an analytical instrument used to determine the elemental composition of molten or liquid metals, typically using optical emission or X-ray fluorescence techniques.

Overview

Metal liquid spectrometers are specialized devices designed to analyze metals in their molten state or as liquid samples. They provide rapid, accurate, and often real-time elemental analysis, which is critical in metal production, processing, and quality control. These instruments are widely used in steel mills, foundries, and metal recycling facilities to ensure alloy composition meets specifications and to detect impurities.

Technologies Used

Optical Emission Spectrometry (OES):

- OES spectrometers, such as the SPECTROPORT and SPECTROTEST, use an arc or spark to excite atoms in the molten metal, causing them to emit light at characteristic wavelengths.
- The emitted light is analyzed to quantify elements like carbon, sulfur, phosphorus, boron, and trace metals with high precision .
- Portable OES units allow on-site analysis with minimal sample preparation, providing results in seconds and supporting high-throughput testing . X-Ray Fluorescence (XRF):...

Article Content

Jan 07, 2026

XRF Analyzers | XRF Spectrometers | Malvern Panalytical

The spectrometers range from energy-dispersive benchtop XRF systems to wavelength-dispersive high-performance

Jun 04, 2026

Development and optimization of experimental parameters for the ...

Detection of traces of impurities/elements present in liquid samples using laser-induced breakdown spectroscopy

Apr 17, 2026

Elemental Analysis | Spectrometer Manufacturers & Suppliers

Metal Power Analytical provides world-class spectrometers, metal analysis instruments, and OES technology for steel plants,

Oct 20, 2025

Metals Analysis by Atomic Spectroscopy

Q10. For the metals in Table 4, use the average final dry concentration to calculate the dissolved concentration (mg/L, ppm) of each

Jan 27, 2026

A toolbox for investigating liquid metal systems

The presence of metallic bonds has made it challenging to comprehend the chemistry within

Jan 26, 2026

Funkenspektrometer für Metallanalyse to go

Das mobile Funkenspektrometer ferro.lyte® erleichtert die mobile Analyse von Metallen. Jetzt mehr über das intuitive OES erfahren!

May 11, 2026

Elemental Analysis Solutions & Analytical Instruments | SPECTRO

SPECTRO is a global leading supplier of advanced analytical instruments like ICP, Arc Spark OES, and XRF spectrometers for

Sep 15, 2025

Sensitive Determination of Alkali Metals by Liquid Anode Glow

Abstract Liquid anode glow discharge-atomic emission spectrometry (LAGD-AES) was employed for the determination

Mar 30, 2026

Liquid chromatography-mass spectrometry

Liquid chromatography-mass spectrometry (LC-MS) is an analytical chemistry technique that combines the physical separation

Sep 04, 2025

Sensitive detection of trace precious metals in acidic solutions using ...

Rapid in situ analysis of precious metals in liquid has been highly desired for real-time monitoring of recovery

Oct 09, 2025

Analysis of Trace Heavy Metal in Solution Using Liquid Cathode

Heavy metal pollution, particularly from cadmium (Cd) and copper (Cu), poses significant environmental and health

Sep 09, 2025

Sensitive detection of trace precious metals in acidic solutions using ...

Sensitive analysis of precious metals in acidic solutions using laser-induced breakdown spectroscopy (LIBS)

Feb 04, 2026

Portable XRF Metal Analyzer

This rugged 245x250x90mm portable spectrometer delivers fast, precise elemental identification in the

Jun 02, 2026

4500 Portable FTIR Spectrometer, Rugged Non-Lab

The Agilent 4500 portable FTIR spectrometer is a rugged non-lab analyzer. The instrument can be set up

Apr 07, 2026

Current state and future prospects of liquid metal catalysis

Owing to their liquid state, liquid alloys are dynamic media, consisting of free-moving metal atoms and delocalized

Nov 15, 2025

LIBS, Laser Induced Breakdown Spectroscopy, Thermo Fisher

LIBS is an acronym for Laser Induced Breakdown Spectroscopy and is an analytical technique used to determine elemental

Jun 25, 2026

XRF Analyzers | XRF Spectrometers | Malvern Panalytical

Solids: Metals, alloys, polymers, ceramics, minerals, and geological samples. Liquids: Solutions, slurries, and even

Feb 05, 2026

Elemental analysis of liquid samples by laser induced breakdown ...

Despite the growing interest of research in the trace element detection in liquids via laser-induced breakdown

May 29, 2026

OMNIS NIR Analyzer

Near-infrared spectrometer for liquid samples. Developed and produced in accordance with Swiss quality standards, the OMNIS NIR

Dec 12, 2025

Portable Metal Analyzer

The SPECTROPORT portable arc spark spectrometer is ideal for many applications in the metal

Nov 15, 2025

A toolbox for investigating liquid metal systems

In this review, Krishnamurthi et al. assess the latest methods to comprehend the physical

Oct 10, 2025

LIBS Spectrometer | Portable Metal Spectrometer Without Argon Gas

LIBS Spectrometer LIS-02 The Portable Metal Spectrometer is intended for operational input inspection of rolled metal products,

Mar 26, 2026

Liquid-metal-jet anode electron-impact x-ray source

We demonstrate an anode concept, based on a liquid-metal jet, for improved brightness in compact electron-impact x

Apr 21, 2026

Laser-induced breakdown spectroscopy application for heavy metals ...

This review will help readers better understand the LIBS technique for detecting heavy metals in liquids and identify

Aug 17, 2025

Secondary-ion mass spectrometry

A third source type, the liquid metal ion gun (LMIG), operates with metals or metallic alloys, which are liquid at room temperature or

Jan 08, 2026

X-Ray Fluorescence Analyzers

Featuring a vivid display, advanced electronics, and robust performance, these analyzers improve quality assurance--whether it's

Jun 02, 2026

Liquid Composition Analysis of Wrought Aluminum Alloys Using Laser ...

Laser-Induced Breakdown Spectroscopy (LIBS) has recently emerged as a new method for online composition

Aug 31, 2025

Atomic Absorption Spectroscopy

Atomic absorption spectroscopy (AAS) is a high-precision elemental analysis technique for the quantitative determination of metals in

Feb 18, 2026

Handheld LIBS Spectrometer | Laser Induced

Vulcan is a handheld LIBS (laser induced breakdown spectroscopy) analyzer, which allows users to

Mar 10, 2026

Direct analysis of heavy metal elements in liquid water using ...

This demonstrates the reliability of the femtosecond LIBS quantitative analysis technique, especially in applications

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