

# *Solutions for Metals Analysis*



# **LECO**

**EMPOWERING RESULTS**

Elemental Analysis | GC Mass Spectrometry | Metallography

# Mined Materials & Metals

## Measuring Quality and Strength



Maintaining the quality, strength, and performance of raw materials or finished metals has been the legacy of LECO products. With a global reputation for rapid, accurate analysis in iron, steel, alloys, refractory metals, and ores, LECO instruments have become the brand leader for these markets. LECO builds its instruments with an eye towards maximizing throughput and productivity. Integrated sample preparation and handling, advanced software, automated cleaning, and more—our instrumentation allows you to maximize your investment.



### Carbon/Sulfur Elemental Analysis

Our instruments for CS analysis combine a proven combustion technique with state-of-the-art technology for wide-range measurement of carbon and sulfur in metals, ores, ceramics, and other inorganic materials. This latest generation of carbon/sulfur instrumentation features an on-board software platform powered by a touch-screen interface to increase usability and lower cost-per-analysis.

- Quick, accurate, and affordable determination for both production control and research
- Calibration, analysis, evaluation, and diagnostic functions accessible via user-friendly software
- Rapid sample combustion with high-efficiency induction furnace improves cycle time
- Available 10- and 60-position sample autoloaders



### Oxygen/Nitrogen/Hydrogen Elemental Analysis

The ONH family of analyzers is designed for wide-range measurement of oxygen, nitrogen, and hydrogen content of inorganic materials, ferrous and nonferrous alloys, and refractory materials using an inert gas fusion method. A custom software interface developed for touch-screen operation provides complete access to instrument control, analysis settings, diagnostics, reporting, and more.

- Ideal for production, research, and quality control environments
- State-of-the-art infrared and thermal conductivity detectors with no moving parts and no manual adjustments
- High-efficiency cooling system reduces need for external cooling
- Optional autocleaner and 20-position sample autoloader





### *Glow Discharge Spectrometers*

Performing bulk and/or compositional depth profile analysis on solid, conductive, and non-conductive samples, LECO puts reliable analysis of bulk material and surface treatments in the hands of production personnel. Benefits of our spectrometers include freedom from metallurgical history and matrix effects, low gas consumption and fewer calibration standards, linear curves, narrow emission lines, wide dynamic range, and SmartLine® Remote Diagnostics.

- Bulk elemental analysis only, or bulk analysis and compositional depth profiling (CDP) models available
- Spectral range from 120 to 850 nm (configuration dependent)
- Continuous profile of concentration/thickness
- Wide dynamic range with concentrations from ppm to 100% by weight
- Short analysis time (within minutes)
- Choice of RF or DC lamps for both conductive and non-conductive samples
- Easy-to-use software



### *Carbon and Water Analysis*

The RC612 provides fast, reliable carbon and water determination. This state-of-the-art instrument determines various forms of carbon while accurately determining hydrogen/moisture content in a wide variety of organic and inorganic materials. A small footprint, external PC with easy-to-use operating software, and increased instrument robustness are all a part of the advanced instrument design.

- Streamlined and efficient plumbing for faster maintenance and improved flow path
- Components easily accessible to the operator thanks to ergonomic shells
- State-of-the-art furnace control system allows temperature ramping from ambient to 1100 °C
- A compact and enclosed furnace system with easily accessible combustion tube increases instrument safety and reduces maintenance time

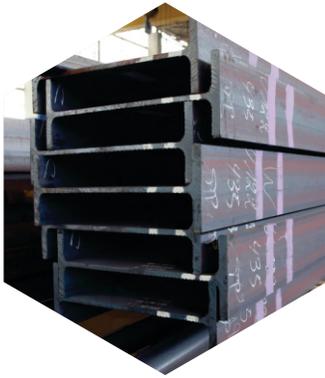


### *Hydrogen Elemental Analysis by Hot Extraction*

The DH603 gives you fast, high-precision residual, diffusible, and total hydrogen determination. This state-of-the-art instrument determines the amount of residual hydrogen (or diffusible and residual hydrogen when equipped with the optional integrated sample piercer) present in ferrous alloys. A small footprint, external PC with user-friendly operating software, and increased instrument safety and robustness are all a part of the advanced DH603 design.

- Newly designed furnace system is more robust, stationary, and housed within the ergonomic shell for decreased maintenance and improved reliability and safety
- Streamlined and efficient plumbing for faster maintenance and improved flow path
- State-of-the-art furnace control system allows temperature ramping from ambient to 1100 °C
- Components easily accessible to the operator thanks to ergonomic shells
- A variety of evacuated pin tubes and diffusible samplers are available for quick and easy hydrogen determination of molten metals
- Optional integrated diffusible piercer features long-life needles and seals for improved reliability and precision



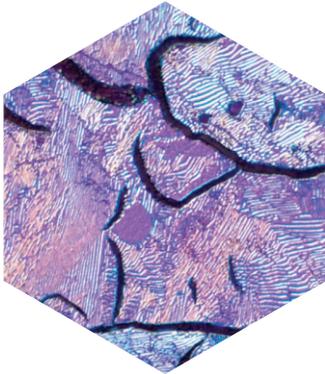


## Metallographic Sample Preparation

Excellent sample preparation is the cornerstone of proficient materials inspection. LECO provides you with a solid line of metallographic sample preparation products to ensure better quality samples right from the start.

### Equipment for Sample Preparation

- CX300/MSX/SX-Series Sectioning Machines
- MX-Series Mounting Presses
- PX-Series Grinder/Polishers
- SS1000 Grinder/Polisher
- BG-Series Belt Grinders



## Microstructural Analysis

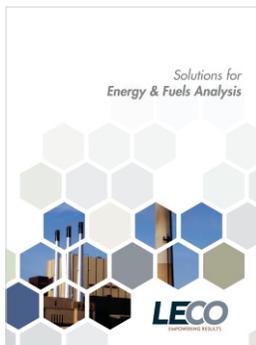
LECO offers complete solutions for metallurgical examination, from research and development to quality control. Our in-house metallographic laboratory is staffed with experienced professionals ready to provide support long after the sale is complete.

### Equipment for Microstructural Analysis

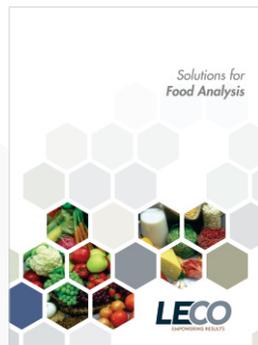
- Stereoscope and Microscopes
- IA44 PAX-it Image Analysis/Management System
- AMH-Series Automated Hardness Testing Systems
- LM & LV -Series Knoop & Vickers Testing Machines
- LCR & LR-Series Rockwell Type Testers
- LCB3100 Brinell Load Cell Tester



*Additional LECO solutions are also featured in the following market-centered brochures.*



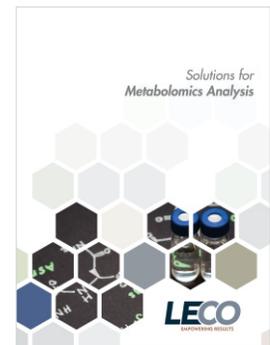
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Food  
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Environment & Agriculture  
209-205-005



Metabolomics  
209-240

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