



ONH (Oxygen, Nitrogen, Hydrogen)Analyzer

ONH5500 Series

>>>>>>>



NCS Testing Technology (Germany) GmbH



Company Overview

NCS Testing Technology Co., Ltd. (hereinafter referred to as NCS) (Stock Code: 300797) is a wholly owned subsidiary of China Iron & Steel Research Institute Group (CISRI). It is a New and High-tech Enterprise and found by the business integration of National Analysis Center for Iron and Steel, China National Center for Quality Supervision and Testing of Iron and Steel, Analysis and Testing Institute of Central Iron & Steel Research Institute, National Nondestructive Testing Center for Steel Products, Analysis and Testing Training Center of Central Iron & Steel Research Institute, Qingdao Marine Corrosion Institute of Central Iron & Steel Research Institute and Beijing NCS Analytical Instruments Co., Ltd.

The main business of NCS involves third-party testing services (including the chemical composition testing, mechanical property testing, material failure analysis, nondestructive testing and measurement calibration), development and sales of analysis and testing instruments, nondestructive testing equipments, anti-corrosion products and related engineering, certified reference materials, proficiency testing and other fields. It possesses many qualifications such as ISO9001, NADCAP, Rolls-Royce, RMP, ISO/IEC 17025 accreditation, CMA, CAL, CMC and PTP. Meanwhile, it is also the “State-Level Testing Organization for Appraisal of Science and Technology Achievements of the People’s Republic of China” and “Personnel Training Centre for Analysis Technology Research and Arbitration Analysis ” authorized by Ministry of Science and Technology; the Testing Laboratory accredited by China Quality Certification Mark; the location of production license examination department of bearing steel products of the National Industrial Product Production License Office of State General Administration of the People’s Republic of China for Quality Supervision and Inspection

and Quarantine (AQSIQ); the open laboratory authorized by Zhongguancun High-Tech Park. NCS also provides technical support for commercial aircraft, China emergency analysis and production safety accident investigation in Beijing.

NCS owns two wholly owned subsidiaries including Beijing China NIL Research Co., Ltd. for Proficiency Testing and Qingdao NCS Testing and Protection Technology Co., Ltd. It also has two solely-owned companies in Beijing and Shanghai.

NCS is the pioneer and the leader of metallurgical analysis, material testing and related product development in China. It is also the location of secretariat of International Committee of Analysis for Steel and Iron Industry, and the secretariat of Chemical Composition Testing Technical Committee Member for Steel and Alloy of National Steel Standardization Committee. NCS has undertaken many projects of National Development and Reform Committee and The Ministry of Science and Technology of the People’s Republic of China. There are more than 300 people, led by Wang Haizhou, an academician of the Chinese Academy of Engineering (CAE), in scientific research team, including 18 professors, 101 senior engineers and 36 doctors. They wholeheartedly engage in the exploration and development of industry leading technologies and products. In addition, NCS has undertaken some key projects in rapid transit railway, commercial aircraft and Beijing Olympic Games. The headquarters of NCS is located in Haidian District, Beijing. There are several R&D and production bases in Beijing, Shanghai, Hebei and Shandong. Moreover, it owns 23 directly subordinated marketing and after-sales service sites covering the whole country to supply most perfect and convenient service for users.

“ NCS is constantly aiming to completely and constantly promote products and services quality, realize the maximization of all-round values, and become a guildler and impeller in metal material testing fields. Looking ahead, NCS will build on current success to make further progress and work with all the stakeholders for a more splendid future! ”



As a leader in China's ONH analyzer industry, "NCS" developed China's first vacuum molten gas analyzer in 1977, launched a pulsed infrared oxygen determination analyzer in 1991, and realized industrialization, taking the lead in breaking the foreign monopoly. After more than 40 years of technical accumulation and development, NCS's series products of ONH analyzers have reached the international leading level.

ONH-5500 Series

ONH (Oxygen, Nitrogen, Hydrogen) Analyzer

>>>>>>>>

Summary of Instruments

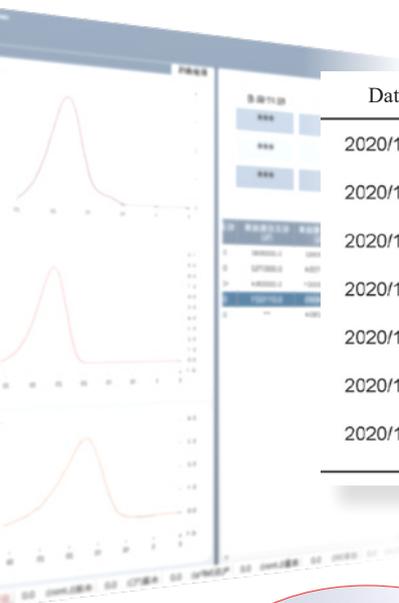
As a brand new ONH analyzer launched by NCS in 2020, ONH-5500 series ONH analyzer possess combined determination of three elements, highly-efficient small flow gas path, smart software system and other prominent characteristics. ONH-5500 series analyzer can quickly and accurately achieve the full measuring range determination of oxygen, nitrogen and hydrogen elements in iron and steel, metal powder, non-ferrous metals, ceramics, minerals and other solid inorganic materials, which can be rated as another masterpiece of NCS's gas analysis instrument brand.

Instrument Characteristics

- Oxygen and hydrogen are measured by Non-dispersive infrared technology (NDIR), highly sensitive thermal conductivity technology is used to measure nitrogen, and three elements of O/N/H are measured simultaneously in a single analysis
- Highly-efficient new pulse heating furnace design can realize high temperature above 3500°C and melt all kinds of solid and inorganic samples
- Highly-efficient and concise analytical gas path, saving expensive He carrier gas and reducing analysis costs
- User-friendly software operation mode, real-time monitoring of key parameters of the instrument, and achievable rich self-diagnosis functions such as software-controlled automatic leak detection, etc.
- Flexible software method setting and first-class linearized algorithm
- During the analysis process, the channel can be automatically switched between the high and low ranges.
- High stability flow control system, ensuring the accuracy of analysis results
- The modular detection unit design can freely select and match O/N/H elements, which has been proved to be highly-efficient and reasonable
- Imported devices are used in key parts, with superior performance and long service life

Three-element joint-measurement technology

NDIR technology is used to accurate determination of the content of hydrogen in the material. Through the analysis of Only one sample, the results of the three elements of O, N, and H can be obtained simultaneously .



Date/Time	Sample Mass (g)	Oxygen (%)	Nitrogen (%)	Hydrogen (%)
2020/10/10 13:46	1.0703	0.012342	0.001900	0.000236
2020/10/10 13:49	1.0700	0.012253	0.001830	0.000194
2020/10/10 13:52	1.0700	0.012384	0.001887	0.000214
2020/10/10 13:56	1.0700	0.012654	0.001833	0.000216
2020/10/10 13:59	1.0700	0.012504	0.001853	0.000235
2020/10/10 14:02	1.0700	0.012601	0.001897	0.000211
2020/10/10 14:06	1.0700	0.012661	0.001881	0.000201



Powder



Ceramics



Alloy



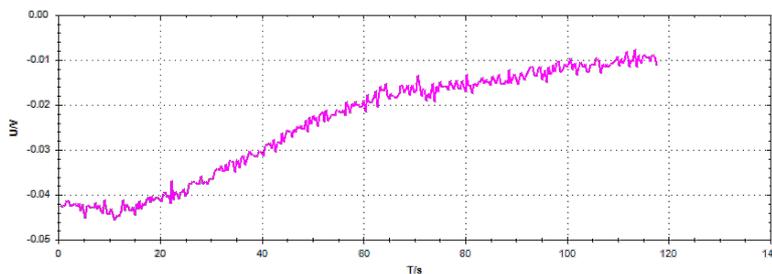
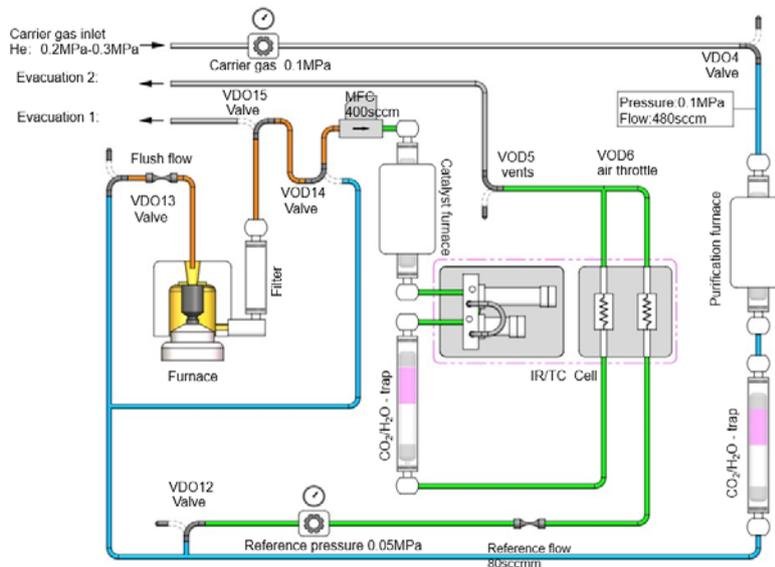
Highly-efficient gas path

Shorter analysis time, lower analysis cost,
Higher analysis efficiency, stronger acquisition signal

Highly-efficient and concise analytical gas path, saving expensive He carrier gas

Mature and stable flow control system

All-metal pipeline, good air tightness and more elegant



Fast and stable, typical thermal conductivity baseline within the first 3~5 minutes after ventilation under the condition of sufficient warm-up of the instrument

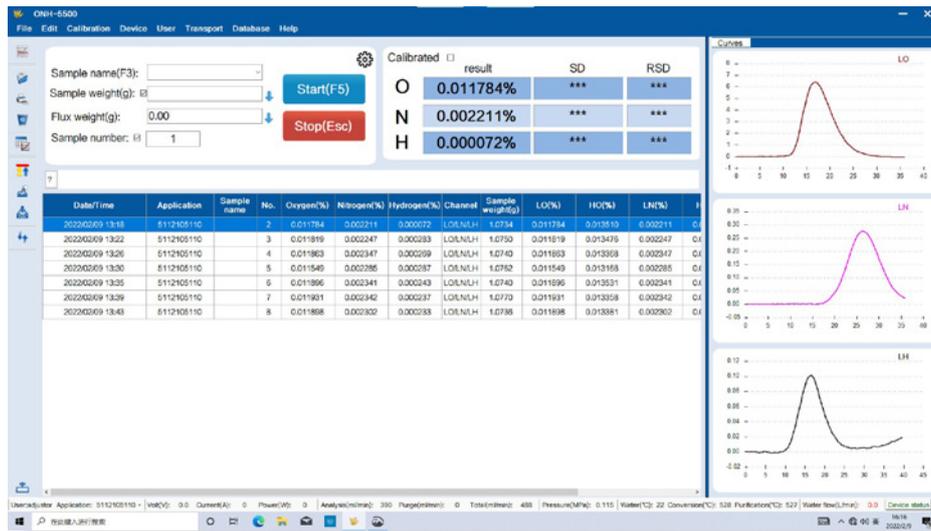


Physical buttons
Direct-type
operation



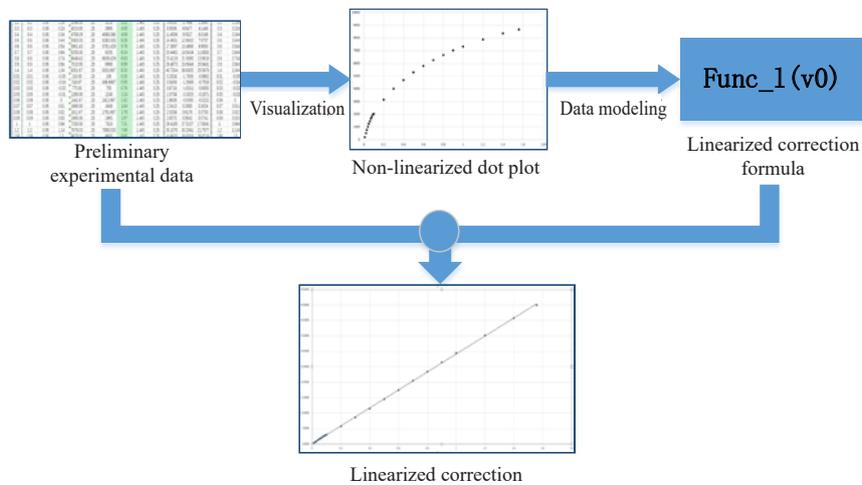
Analysis software with powerful functions

Possess brand new analysis software with concise interface and powerful functions. Provide a variety of operation modes, which can present the analysis results more intuitively, and have powerful monitoring functions, showing the real time parameters such as power /voltage /current of the impulse furnace; temperature of water and catalyst furnaces; carrier gas pressure and flow, baseline signal of O/N/H, etc.



Linearized algorithm

Algorithm serves as the core of software. "NCS" has been deeply involved in the field of gas analysis for many years. Combined with the underlying principles of the detection system and extensive basic experiments, NCS summarized a set of scientific and effective linearized algorithm, especially solving the problem of linearized detection for nonlinear systems.



Main parameters and configuration of the instrument

	O-5500	ON-5500	ONH-5500	N-5500	H-5500	OH-5500
Measurement range	Low oxygen: 0.1ppm ~ 0.5% High oxygen: 0.5% ~ 20% Low nitrogen: 0.1ppm~ 0.5% High nitrogen: 0.5%~50% Hydrogen: Nitrogen: 0.1ppm to 2000ppm Note: The measurement range can be changed by changing the sample weight.				Low oxygen: 0.1ppm to 0.5% Low hydrogen: 0.1ppm to 200ppm High hydrogen: 200ppm to 5000ppm Note: The measurement range can be changed by changing the sample weight.	
Measurement precision	Oxygen: 1ppm or RSD≤1.0% Nitrogen: 1ppm or RSD≤1.0% Hydrogen: 0.2ppm or RSD≤2.0% (Note: Subject to the standard deviation or uncertainty not greater than the reference material)					
Sensitivity	0.01ppm					
Infrared detection cell	1-2 oxygen optional channels (low oxygen, high oxygen)		1-2 oxygen optional channels (low oxygen, high oxygen), 1 hydrogen channel	None		1 low oxygen channel
Thermal conductivity detection cell	None	One				
Pulse furnace	Current 0-1500A, power 8.5KVA, maximum temperature up to 3500°C					
Analysis time	Typically, 3 minutes					
Sample weight	Typically, 1g. The sample weight can be changed according to the sample content					
Carrier gas	High purity argon	High purity helium			High purity nitrogen	
Overall size and weight	63cm (W) * 76cm (d) * 76cm (H); About 180kg					

High-quality Creates Better Life

Commercial & Sales:

NCS Testing Technology (Germany) GmbH
Adress: Blindeisenweg 39, 41468 Neuss – Germany
Website: <http://www.ncs-germany.com>
E-Mail: info@ncs-germany.com

Manufactured:

NCS Jiangsu Testing Technology Co., Ltd
Adress: No. 158, Qianjin East Road, Kunshan Economic & Technological Development Zone,
Jiansu Province, China