Automic Emission Spectrometer
AES-3700

AC/DC ARC Speical Emission Spectrometer

We in domestic take the lead to promote a new combined mode.
Change the photo plate recording model by replacing the photo plate recorder with photo multiplier tube.
Possessing three invention patents, six utility model patents and one analytical software copyright.
2013 BCEIA gold award.

Features

▶▶▶ Combination of AC/DC excitation source, concave grating, PMT detector, make a new combined mode, with an all new optical path, configuration and outlook.

▶▶▶ The new light path not only more simple components, but also shorten the optical leagth.

▶▶▶ The compact structure arc generation is using a inegraec design, very eary to use.

▶▶▶ Can be used to measure geochemical powder samples and non ferrous metallurgy rapidly, accurately and sensivity spccialized analytical methed is also afforded.

▶▶▶ Automatical setting the exposure time of different element according to the corre-sponding evaporation curve. The spectral line with different intensity can be measured synchronous.

▶▶▶ Specially designed the channel for analyti-cal line,background line internal standard line. Realizing the background.
calibration and intemal standard calibration are controlled by program.

▶▶▶ The electrode on the excitation device can be imaged on the inspection window which is total-ly closed, and the electrode position can be adjusted conveniently.

▶▶▶ The electrode holders are automatic temperature controlled by water recirculator, only need to adjust up and down, it features a casy of use and long-life.

▶▶▶ High integration measure and control system, all the signals can be uniformly controlled. To ensure the real time, efficient and reliable date collection.

▶▶▶ The Self-designed analysis software featured with easy-to-use and some special functions, such as subsection integral, backgraund calibration, intemal standard calibration after trea-ment of analytical data. It also contain powerful database, easy to realizing the data saving, data retrieval and data processing.

AC/DC ARC Speical Emission Spectrometer
Applications

Applications of DC are special emission spectrometer

▶▶▶ Measurement of 19 kinds of impurity elements in high purity tungsten oxide.

▶▶▶ Measurement of 17 kinds of impurity elements in high purity molybdenum oxide.

▶▶▶ Measurement of trace tungsten element in high purity molybdenum oxide.

▶▶▶ Measurement of high purity metal powder and metallic oxide, such as copper, aluminium, nickel et al.

Applications of AC are special emission spectrometer

▶▶▶ International Geochemical Mapping according to IGCP259, IGCP360.

▶▶▶ Geochemical Indication for Prospecting.

▶▶▶ Stream Sediment and Soil

Specifications

Excitation Light Source

▶▶▶ AC/DC are generation

▶▶▶ Current 2A~20A

▶▶▶ Ignition way: high voltage pulse

Excitation Light Source

▶▶▶ Monochromator: Paschen-Range Type

▶▶▶ Concave grating: radius of curvature 750mm

▶▶▶ The reciprocal of inspersion rate:0.55nm/mm (first order)

▶▶▶ Grating: 24001/mm

▶▶▶ Wavelength range:200~500mm

▶▶▶ Water-cooling electrode holder (water chiller):
Temperature:$20^{o}C\pm2^{o}C$

▶▶▶ Constant temperature system of monochromator:
Temperature:$35^{o}C\pm0.1^{o}C$

Measure and Control System

▶▶▶ The smart measure and control system have multi model designing and multi data collecting function. All the signals can be uniformly controlled.

▶▶▶ Measuring style: subsection integral

▶▶▶ Reproducibility: RSD$\leq$0.2%

▶▶▶ Photomultiplier:
Voltage: -1000V
Stability: Better than 0.5% within 8 hourse

Data controlling System

▶▶▶ The Self-designed analysis software featured with easy-to-use and some special functions, auch as subsection integral, backgraund calibration intemal standrad calibration, after treatment of analytical data. It also contain powerful database, easy to realizing the data saving data retrieval and data processing.

Dimensions

▶▶▶ 1420mm(L)x880mm(W)x1160mm(H)

Weight

▶▶▶ 300Kg

Environment Requirement

▶▶▶ Environment: temperature:15-25°C
Relative humidity: ≤75%

DETERMINED ELEMENTS AND MEASUREMENT RANGE

Determined elements and measurement range of AC are

▶▶▶ Mainly measured elements

▶▶▶ Determination of trace elements, such as Ag, Sn, Mo, B, Pb, in gcochomical samples simultancously. All the working curve of elements have good linearity respectively, the correlation coefficient of all measured elements are within the scope of 0.9946~0.9999, it also have the function of automatic calculate and display the result and deviation of measurements.

▶▶▶ Measurement of 19 kinds of impurity elements in high purity tungstcn oxide
All the working curve of 19 kinds of impurity elements in high purity tungsten oxide have good linearity respectively, the correlation coefficient of all measured elements are within the scope of 0.9960~0.9998.

Standard Content and Detection Limit of some element (μg-g^{-1})

Element	Standard Content GBW07701-GBW07709	Detection Limit (DL)
Ag	0.034~10	0.012
Sn	0.28~100	0.24
Mo	0.21~100	0.15
B	2.1~1000	1.65
Ph	2.5~1000	1.30

▶▶▶ Determination of elements, such as Ni, Cr, Co, Be, Cu, Zn, in geochemical sample simultaneously. All the working curve of elements have good linearity respectively, the correlation coefficient of all measured elements are within the scope of 0.9928~0.9992.

Detection Limit of some other elements (μg-g^{-1})

Element	Detection Limit (DL)	Element	Detection Limit (DL)
Ni	1.5	Re	0.2
Co	0.6	Cu	1.0
Cr	5.0	Zn	10
V	15	Ti	50

Measurement range of 19 kinds of impurity elements in high purity tungstan oxide

Element	Measurement range%	Element	Measurement range%
Ai	0.000~0.01	Mn	0.0002~0.01
As	0.0005~0.02	Mo	0.001~0.05
Bi	0.00005~0.0024	Ni	0.00015~0.01
Ca	0.00004~0.015	Pb	0.00005~0.0024
Cd	0.00005~0.007	Sb	0.00025~0.01
Co	0.00025~0.015	Si	0.0004~0.02
Cr	0.00025~0.015	Sn	0.00005~0.0024
Cu	0.00003~0.007	Ti	0.00025~0.015
Fe	0.0003~0.02	V	0.00025~0.015
Mg	0.00015~0.01		

▶▶▶ Measurement of 17 kinds of impurity elements in high purity molybdenum oxide
All the working curve of 17 kinds of impurity elements in high purity molybdenum oxide have linearity respectively, the correlation coefficient of all measured elements are within the scope of 0.9910~0.9999.

Measurement range of 17 kinds of impurity elements in high purity molybdenum oxide

Determined gold element

▶▶▶ The chemical spectrometry method, which is frequently used is frequently used to measure the trace gold in geochemical sample, features more sensitivity and time saving.

▶▶▶ Using AES-2700 to measure Au, the detection limit can be 0.3ng.g-1 the working curve have a good linearity, and the correlation coefficient is equal to 0.9955.

Element	Measurement range%	Element	Measurement range%
Ai	0.0002~0.01	Mn	0.0001~0.008
Bi	0.00005~0.0024	Ni	0.0001~0.008
Ca	0.0004~0.12	Pd	0.00005~0.0024
Cd	0.00005~0.004	Sb	0.0002~0.01
Cr	0.00025~0.012	Si	0.0005~0.012
Co	0.00015~0.012	Sn	0.00005~0.0024
Cu	0.00005~0.007	Ti	0.0003~0.012
Fe	0.0003~0.012	V	0.0003~0.012
Mg	0.0002~0.01	W	0.0053~0.196

Determined elements and measurement range of DC are

▶▶▶ Measurement of trace tungsten element in high purity molybdenum oxide.
The measurement of trace tungsten element in high purity molybdenum oxide is concerned as an acknowledged difficulty in analytical chemistry filed, generally the detection limit only can reach 0.05%. So we innovated "The analytical method of trace tungsten element in molybdenum oxide" if the tungstan element is measured among the content of 0.0053%~0.196%, which featured with a good linearity of requal to 0.9963, the detection limit can reach 0.0027%,which is order of magnitude prompt than usual.

The working curve of elements of AC/DC are

The working curve of Sn in geochemical sample using AC are
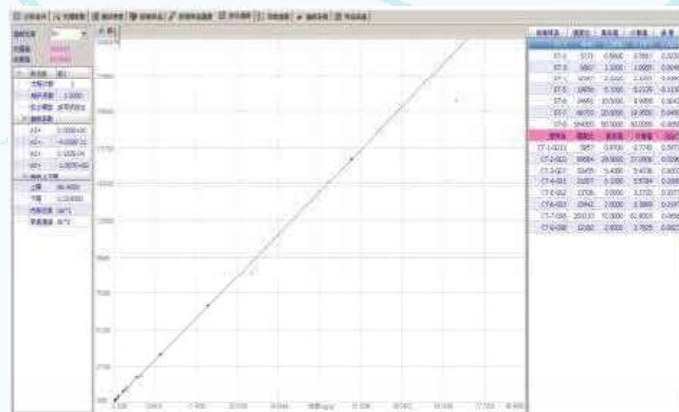
The working curve of Co high purity tungsten oxide using DC are

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HPLC Servicing :We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

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AMC's/CMC   :We offer user training both in-House and at customer sites on HPLC principles, operations, troubleshooting.

Validations   :We have protocols for carrying out periodic Validations as per GLP/GMP/U SFDA norms

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About Analytical Technologies

UV/VIS Spectro 2060+ Double Beam	PTIR	Gas Chromatograph 3000	Gas Chromatograph 2979 Plus	Flash Chromatograph	Atomic Absorption Spectrophotometer	Liquid Partical Counter

Optical Emission Spectrophotometer	DSC/TGA	NOVA 2020 plus Automated Bio Chemistry Analyzer	HEMA 2020 Hematology Analyzer	Micro Plate Reader/Washer	Water purification system	Total Organic Carbon

Fully Automated CLIA	NOVA Basic Semi -Auto Chemistry Analyzer	PCR/Gradient PCR/ RTPCR	Blood Gas Analyzer	Random access Analyzer for immunoassay Proteins & clinical chemistry	Semen Analyzer	Water purification carbon

Regulatory compliances

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2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXIFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

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