



### PAC - Petroleum (Oil & Gas) Analyzers - International

#### ASTM Compliance Products include:

- SIMDIS Analyzer (determination of true boiling point data from naphtha up to crude oil samples)
- Reformulyzer® M4 (multi-dimensional separation)
- Viscometer & Density (Fastest and Most Versatile Viscometer and Density Meter)
- Freeze, Viscosity & Density (measures freeze point, viscosity and density)
- Cloud & Pour Point (with ultra-low temperature capabilities)
- Atmospheric Distillation & Heater Tube Tester (SAF Analysis)
- Viscometer (patented sensor technology)
- Flash Point (Pensky Martens method)
- Vapor Pressure of organic solvents
- Elemental Analyzer for N and S
- **Many more.....**



SIMDIS Analyzer



Reformulyzer® M4



Customized GC



Viscometer & Density



Freeze, Viscosity & Density



Cloud & Pour Point



Elemental N & S Analyzer



Flash Point



Vapor Pressure



Distillation



Viscometer

# Petrochemical Science & Technology

## Compact Science Systems - On-site GC-IRMS - UK

### Real-Time, On-Site Isotope Analysis

This Gas Chromatograph Combustion Isotope Ratio Mass Spectrometer IsoLogger offers advanced real-time capability provides **accurate, immediate isotope analysis** for mud gas logging projects. With instant data interpretation, it supports **drill testing and well completion**, helping field teams make informed decisions without delays.

### A Reliable, Field-Ready Portable IRMS

Designed for **on-site use**, the IsoLogger is a **robust and dependable Portable IRMS** built for demanding environments. It enables rapid H<sub>2</sub>S concentration checks, precise thermogenic and biogenic gas classification, and CO<sub>2</sub> flood breakthrough detection - delivering accurate insights in minutes.

### Portable IRMS – Fast, and Reliable Isotope Analysis

- Powerful and compact GC Combustion IRMS for field and lab use
- Robust construction ensures durability in demanding environments
- Real-time isotope analysis for fast decision-making
- Accurate results every 5–6 minutes, compared to weeks with in-lab testing
- Investigates propane, methane, and ethane concentrations
- Provides precise mud gas isotope measurements on-site
- Advanced interpretation tools for mud gas analysis

### Dedicated Oil/Gas, Geological, and Geochemical Applications:

- Characterization of petroleum fluids
- Predict inert gas content (e.g. CO<sub>2</sub>)
- Predict deep thermogenic petroleum systems in biogenic gas plays
- Reservoir seal identification
- Predict shallow over-pressure gas

### Intelligent Software for Precision Control

- Complete control of IsoLogger with the IsoDelta software suite
- Flexible operation—adjust settings to suit both new users and isotope specialists
- Dual functionality: automated control for beginners, advanced options for experts
- Custom method creation and instrument tuning for precise adjustments
- Supports VB.Net scripting for further customisation
- Export analytical results to Microsoft Excel or LIMS-compatible systems



IsoLogger IRMS

## ppq sense - <sup>14</sup>C Analyzer - Italy

Carbon isotopes are present in every living thing. <sup>12</sup>C is stable and present around ~99%, <sup>13</sup>C is about 1%. <sup>14</sup>C (radiocarbon) is present in very small amounts of ~1 ppt and has a half-life of 5,700 years. **Radiocarbon is a label provided by nature for the biogenic origin of all carbon-containing materials.**

Radiocarbon does not exist in fossil origin because it has been long completely decayed. **Therefore, radiocarbon can be used to discriminate the fossil fraction in materials.**

<sup>14</sup>C SCAR is able to perform radiocarbon (<sup>14</sup>C) analysis on various materials (fabrics, plastics, fuels, solvents and even CO<sub>2</sub>) with far greater precision and versatility.

**Finally, being naturally present in physiological systems, it could be used in researches in pharmacology and metabolic process.**



<sup>14</sup>C Analyzer

# Petrochemical Science & Technology

## Quizix - High Pressure Precision Pump - USA

Three different lines of continuous pulse-free flow systems: 5000 Series, 6000 Series, and the QX Series. Each product line includes several different models with various pressure and flow rate ranges.

**Q5000/Q6000:** These are precision high pressure syringe pump that provides truly pulse-free pumping with unmatched precision and accuracy. These positive displacement metering pumps are ideal for handling aqueous solutions, brines, hydrocarbons, refined oils and gases such as CO<sub>2</sub>.

**Q5000/6000:** A pair of Q5000 or Q6000 cylinders can work together to pump continuously for any length of time, from seconds to months. You can pump fluid at either a constant flow rate or a constant pressure, specifying the precise flow rate or pressure to be maintained. Q6000 Series pumps can also operate in either direction, letting you easily deliver or withdraw fluid to or from an application. It can also be configured for single cylinder, batch flow operations as well.

High temperature (HT) version allows the entire syringe pump body to be placed in an oven, with the motor extending outside the oven wall. By keeping the fluid, piston and cylinder barrel at a uniform temperature, volumetric errors due to thermal expansion and contraction are eliminated. Optional temperature control jackets provide heating or cooling the cylinder barrels when oven placement is unnecessary.

**QX:** 6 models of 500 psi (500mL/min), 1500 psi (200 mL/min), 3000 psi (100 mL/min), 6000 psi (50 mL/min), 10,000 psi (30mL/min), 20,000 psi (7.5 mL/min) are available.



Flow: 0.000018-0.000125 (min);  
7.5-60 mL/min (max)  
Pressure: 2,500-20,000 psi



Flow: 0.002-0.0004 (min); 50-400  
mL/min (max)  
Pressure: 5,000-30,000 psi



Flow: 0.002-0.1 (min); 7.5-500  
mL/min (max)  
Pressure: 500-20,000 psi

## Misc - Chemical Feeding Pump - Misc

We offer various metering pumps of wide flow and pressure range. These are constructed with materials that suits your application.



Flow rate: 0.001-9.999 mL/min  
Pressure: ~40MPa



Flow rate: 0.01-50.00 mL/min  
Pressure: ~30MPa



Flow rate: 0.01-100.00 mL/min  
Pressure: ~20 MPa

## Misc - Peristaltic Pump - Misc

We offer a wide range of peristaltic pumps (about 3 models of more than 60 different configurations). Just let us know the flow rate of the pump you are interested in, we would then provide you a few models for your consideration.



Flow rate: up to 1100 mL/min



Flow rate: up to 2200 mL/min



Flow rate: Up to 3300 mL/min

# Petrochemical Science & Technology

## Aero Laser - THC in H<sub>2</sub> - Germany

In the rapidly advancing world of hydrogen energy, the quest for its purity is an imperative issue. As the industry strides towards a cleaner, more sustainable future, the HydroPRO THC in H<sub>2</sub> analyzer emerges as a vital analytical tool to ensure the highest purity levels in hydrogen.



HydroPro Total Hydrocarbon (THC) in H<sub>2</sub>

## Z-Spec - HDXRF (S in Marine Fuel Measurement) - USA

Sulphur in Marine Fuel driven by HD XRF® platform ensure sulphur compliance for IMO 2020 & ECAs. Since 2015, SECA restricted emissions to 0.1% of sulphur content within 24 nautical miles from shores. On January 1, 2020, the International Maritime Organization's (IMO) revised MARPOL Annex VI rule went into effect, which further lowered the maximum global sulphur cap for emissions from 3.50% to 0.50%. The Emission Control Areas (ECAs) remains at the 2015 level of 0.10% sulphur content. To ensure compliance with both regulations, merchant ships need to strictly monitor sulphur content in fuel. Z-SPEC's Sea16 was designed to meet these needs with easy, rapid, and precise sulphur analysis.



HDXRF For S in Marine Fuel

## PAC - Fuel Analyzers - USA/Europe

**MFA-70Xi** marine fuel analyzer measures cloud point, pour point, viscosity and density of light marine distillate fuels like DMX, DMA, DMZ, and DMB. It is completely self-cleaning, and completes all the tests in less than 25 minutes. Instrument is compliant with ASTM D7945, D5773, D5949, and D7770

**OptiFuel FT-IR** is compliant to ASTM D8340's standard practice for spectroscopic analyzer. It tests gasoline fuel parameters at a confidence level similar to primary test methods. Therefore, the OptiFuel can now be employed in laboratory settings to determine gasoline properties effectively and efficiently.



Marine Fuel



Optifuel FT-IR Analyzer

## NightLight - NIR (On-Line Process) - China

Near InfraRed (NIR) Spectrometer is the first scientific instrument ever used AI to conduct data analysis. At that time, no one called it as AI. Hundreds of samples are used to build a statistical model to reflect the quality of petrochemical processes (such as **Resin Synthesis, Plasticizer & Plastic Pellet production, Methanol Recovery, Moisture Detection, Oxidation, Hydrolysis, Chlorination, Esterification, Acrylic Acid production**, etc).



On-Line Process NIR

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