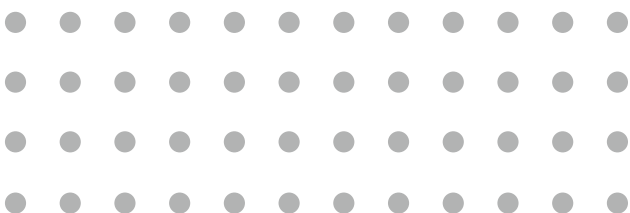




SWAN ENVIRONMENTAL
MONITORING SOLUTIONS



Advanced Research Instruments



OUR GLOBAL PARTNERS



Ozone Precursors (PAMS 56) and Odor Monitoring System

- All-in-one solution for ozone precursors monitoring in ambient air. airmozone is the solution for in-situ VOC analysis.
- AirmOzone utilizes the airmoVOC C₂-C₆ and an airmoVOC C₆-C₁₂ with FID technology. Analyze light & heavy VOCs.
- Monitors 56 compounds of the USEPA list, 88 compounds when TO 14 molecules are added.
- No interferences on 10 compounds which can potentially interfere with benzene (EN 14 662-3).
- Fully automated with internal calibration by airmoCAL.
- VISTACHROM software controls analyzers & enables storage / display of chromatograms.
- **This solution comes top in US Environmental Protection Agency (US EPA) field trials and is considered as unique autonomous and integrated solution for on field application.**
- **For Urban / Non urban area pollution control, Indoor measurements, BTEX/PAMS/CE analysis, Plant/process emissions studies etc.**



Portable VOC Analyzer

- microVOC is a compact VOC analyzer which allows continuous and realtime qualification and quantification of benzene, toluene, ethylbenzene, xylenes in standards and other VOCs in options.
- Field-portable design. Compact size and low weight. Powered by mains or battery.
- Deployment in less than 5 minutes. Analysis in just 10 minutes.
- Color touch screen, Sequence programming
- Detection limit lower than 1 ppb for benzene. Highly sensitive. Exceptional Accuracy.
- Results in near real-time. Data logging for quality control. Smart, embedded software
- **Innovation from CNRS & Strasbourg University. Supported by EU and innovation programs.**
- **For Public building occupational exposure verification, Industrial hygiene measurement, Chamber test studies, Material emissions quantification, Building management, Concentration level continuous monitoring, Field Campaign etc.**



Micro GC Fusion® Gas Analyzer

- Simplify and Accelerate Gas Analysis.
- Rapid analysis, 1–3 minutes.
- Multiple module parallel analysis with fast temperature ramping.
- Fusion Auto-Sensing Technology (FAST) coupled with MEMS TCD provides 1 ppm sensitivity.
- Front panel display provides instrument control, analysis result and status update.
- License-free web-based user interface accessible from any web browser.
- Embedded Wi-Fi enables instrument control from computer, tablet and smart phone.
- Optional integrated sample conditioner provides programmable purging, sample pressure and temperature regulation.
- **For Natural gas and extended natural gas analysis, H₂S and odorant in natural gas, SO₂ and H₂S gas monitoring, Permanent gases and olefins in refinery gas, Syngas, fuel cell, landfill gas and biogas, Impurities in petrochemical products and specialty gases, Solvent/VOC gas monitoring, Catalyst research for alternative energy, Mud logging in oil and gas exploration, Mine gas, Carbon monoxide diffusing capacity in the mouse lung.**



Splashproof Multigas Ambient FTIR Analyzer

- Extremely high accurate & portable package. Battery operation. Wireless communication. IP54 rated.
- Operated by a tablet running a user-friendly software with a clear, visually-pleasing and intuitive design.
- With GT5000 Terra detect hundreds of compounds at once - even the ones not expecting to bump into.
- **GT5000 Terra has various application areas, such as: Industrial hygiene & exposure monitoring, Confined space monitoring, Shipping container monitoring, Anesthetic waste gas monitoring, HAZMAT & first response monitoring, Greenhouse gas flux measurements in various ecosystems**
- DX4015 – Portable analyzer with heated sample cell for humid conditions.
- With exceptionally low detection limits. Built in pump - no need for a separate sampling system.
- Simultaneous measurements of all gases (even the ones not expecting to bump into).
- **Measures gases in wet conditions, such as in swamps or in humid industrial settings.**



Portable FTIR Emission & Combustion Analyzer

- With GT6000 Mobilis, setup, measurements, and analysis happen easily, smoothly and rapidly.
- With integrated sampling line fewer parts to carry around.
- Corrosion-resistant sample cell is heated to 180°C
- Portable Sampling System, PSS utilizes hot-and-wet measurement principle (no drying/dilution)
- Typically set up to measure H₂O, CO₂, CO, NO, NO₂, N₂O, SO₂, NH₃, CH₄, HCl, HF and different VOCs and can measure up to 50 gases simultaneously.
- Measure all key compounds at once, including oxygen with PSS Plus - Sampling System.
- Even the smallest concentrations are measured with high accuracy.
- Measurements can be monitored on-site or even remotely. Results can be accessed via PC or tablet with Calcmeter software.
- With Calcmeter-software you can re-analyze measurement data afterward to identify unknown gases.
- **For stack testing and Combustion Research**



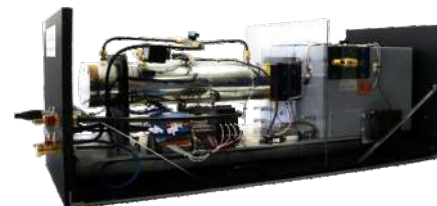
Green House Gas (GHG) Analyzer

- Reliable and simultaneous analysis of CH₄ and N₂O in ambient air. H₂O optional.
- Based on combining ultra sensitive cantilever enhanced photoacoustic detection technology with quantum cascade laser source operating at a Mid-IR fundamental spectral absorption line of greenhouse gases methane (CH₄) and nitrous oxide (N₂O).
- Low ppb detection limit. High dynamic range and stable operation.
- Response time: user configurable from 30 seconds.
- Low cost of ownership, no consumables or wet chemistry, intuitive user interface.
- Low sample volume (few ml). Built-in gas exchange system.
- **Monitoring GHG emissions from livestock, individual animals, animal shelters, farm animals ; Evaluating need for fertilization by measuring N₂O in soil ; Identifying GHG emissions of soil in-situ in order to evaluate the climatic effects.**



Trace Greenhouse Gas & Isotope Analyzer

- High accuracy, simultaneous and real time multi-species trace greenhouse gas and isotope analyser based on Fourier Transform Infrared (FTIR) spectroscopy
- Simultaneous measurements of multiple greenhouse gas species with high repeatability and excellent precision without the need for frequent gas calibrations.
- Single instrument to measure the major greenhouse gases - Methane (CH₄) - Nitrous oxide (N₂O) - Carbon monoxide (CO) - Carbon dioxide (CO₂) including δ¹³C and δ¹⁸O
- Measurement data is reliable and precise. Spectra saved for re-analysis as required
- ICOS compliant for GHG, GAW compliant for trace gases.
- **Garnered reputation as only one capable of meeting World Meteorological Organisation (WMO) standard for measured species**
- **For forest studies, shipboard atmospheric studies, climate change research etc.**



Trace Gas (SF₆ / CFC / PFC / ETO) Analyzer

- Based on patented photoacoustic spectroscopy with cantilever enhanced optical microphone
- Simultaneous analysis of up to 50 gases depending on configuration
- Typically Low or sub-ppb detection limits. High selectivity
- Low sample volume and wide dynamic range
- Automatic compensation for temperature and pressure fluctuations
- **For Dissolved Gas Analysis (DGA), Animal husbandry, Border security, Fenceline monitoring, Indoor air quality and occupational safety, Ship emissions monitoring, Soil analysis, Waste anesthetic gases, Photocatalysis research, , Clean room monitoring,**



Single / Three Wavelength Nephelometers

- World-class aerosol monitoring & measurement: Around the world, atmospheric scientists and environmental agencies, rely on Acoem's range of Aurora™ integrating nephelometers every day.
- Accurate, flexible, easy to operate, transportable, rugged, reliable, remote control (incl. calibration).
- Integrated with internal sample pump, sample heater, internal calibration valves, zero air pump & data logger
- Internal sample heater with temperature or RH control
- Proven capability for long-term monitoring in remote, unattended locations
- With Acoem's Airodis™— data collection, validation and reporting software
- Options: single / three wavelength integrating nephelometers, polar three wavelength integrating nephelometer
- **For atmospheric visibility deterioration studies, automotive engine exhaust emission studies, aircraft measurements, aerosol light scattering studies etc.**



Holistic 3D Dust Monitoring System

- Integro™ LIDAR Network is a turnkey solution that effectively and efficiently monitors on-site dust levels and displays data in near-real time, providing accurate feedback to enable dust mitigation strategies including suppression systems.
- A Light Detection and Ranging (LIDAR) Leosphere Windcube® continuously scans the required area & measures dust concentration & radial wind speed/wind direction. Windcube® can be configured for radial scan or vertical scan
- Captures 10,000-50,000 individual data points of dust dispersion per scan every 5-10 mins.
- Three or more fixed, reference-quality dust & meteorological stations. LIDAR technology works in harmony with the fixed stations, using their regulatory dust concentration measurements to correlate its scanned data.
- Acoem Airodis™ software can capture, analyse & correlate data every 5-10 mins.
- Acoem Cloud, a web browser-based, fully-interactive interface gives users a high-resolution Google Earth-like 3D viewing experience for live and historical site data.
- LIDAR measures dust emission sources, movement, and trajectories over an entire scanned area ranging from a few hundred metres up to 12 km (24 km scan diameter).
- **For: Stockpiles studies, Train / ship loading activity studies, Conveyor stations, Municipal waste facilities, Remediation sites, Dust source studies, Mining area studies, Settling & evaporation ponds studies.**





Speciation Samplers

- Designed to comply with and exceed EPA Speciation requirements.
- Two models provide a choice for compliance monitoring: SASS is a 5 channel sampling system and SUPER SASS is 8 channel, multiple event sampling system.
- Contamination free Canister, Solar Radiation shield, and Modular design.
- New multi-cell denuder and multiple filter medias.
- Automatic Volumetric Flow Controllers
- Each Channel may be operated independently
- Advanced Field Audit Screens
- For Source Apportionment studies, Ambient Monitoring, Environmental Monitoring, Climate Research**



Multi Spectrum Black Carbon Analyzer

- Calculates black-carbon "BC" concentrations at 10 different wavelengths ranging from the near-UV to the near-IR with 1-minute time resolution.
- Inexpensive filter media. Inlet heater for sample conditioning. Sample at either 2 or 5 LPM.
- Inlets are available for TSP, PM₁₀, PM_{2.5} or PM₁ sampling at either flow rate.
- Simple sensor design requires no flow splitting, employs a single mass flow controller and is well matched for use with filter media
- Flow checks, audits and trouble-shooting are simple to perform.
- Built in data logger. Optional cloud-based modem & data service.
- For Environmental Monitoring & Climate Research, Air Quality Surveillance, Global Warming Studies, Particulate Emissions Studies, Near-Roadside Monitoring, Visibility Studies, Source Apportionment Determination, Angstrom Absorption Exponent Determination etc.**



Handheld Condensation Particle Counter (CPC)

- Stores up to 10,000 measurements
- PC Interface with USB & Software for real-time measurements while displaying time fluctuation graph
- 15 nm sensitivity
- Concentration range of 0 to 100,000 particles/cm³
- Programmable data-logging capabilities
- Power Supply can be selected from alkaline/Ni-MH battery or AC adapter
- Simple to download the data to your computer via USB
- For Indoor Air Quality Investigation, Aerosol Research, Filter Test, Environmental Monitoring for Electronics, Food Processing, Pharmaceutical etc.**



Hot-Wire Anemometer

- For measurements of turbulence intensity of air flow and for its frequency analyses.
- 2 channels of CTA integrated in one unit, extended up to 16 channels
- Frequency response up to 20 kHz
- Compact and easy to use
- Exclusive software support from probe calibration to measurement
- For Investigation on air flow turbulence of rotating parts like fans, turbines, unmanned aircraft blades, etc. ; Measurement of air flow turbulence of buildings or nearby overhead electric wire ; Measurement of air flow fluctuation and frequency analysis of turbulence ; Measurement of pulsating flow ; Investigation on noise generated by air flow ; Air flow investigations in wind tunnels**



Bubble Master

- To measure gas-liquid two-phase flows with optical fiber sensors.
- It measures not only time-averaged void fraction, but also detects individual bubble size and velocity Measurable even at a higher void fraction of over 1 %
- Simultaneous measurement of bubble velocity and diameter
- Applicable to nonconductive fluid as well
- Option of plastic fibers or heat and pressure resistant types available (S-TOP / T-TOP)
- For Fundamental researches of nuclear reactors ; Cavitation research, f. e., bubble sizes, velocity ; Void fraction control in bubble columns ; Efficiency validation of chemical process ; Gaseous diffusion in a solution, f.e., of bio reactors ;**



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