



GAS SORPTION

BACKGROUND & MARKETS

KEP Technologies is not simply an instrument company, but a full solution provider.

We do not claim that a single product is suited for all applications and have with our Setaram brand developed a range of products with different characteristics to more closely meet your demands.

Our gas sorption applications include topics as different as hydrogen storage, carbon capture and sequestration, or catalyst characterization. More generally, we are confident that with KEP Technologies you will find a dedicated solution with the performance you need to get the best understanding of your materials. This being the case no matter which of our below market segments you may work in.

« For over 70 years, through it's Setaram brand KEP Technologies Group has been delivering innovation and excellence in the field of scientific measurement instrumentation.

Our product line is designed to inspire scientists with unique levels of precision and the ability to examine materials even under near impossible conditions. Addressing a wide range of applications in industry and leading scientific establishments, KEP Technologies puts customer needs, service and support at the center of all we do.

With our new Innovation Center in Geneva more than ever our focus is to identify and meet even the most discerning needs with solutions designed by the brightest engineers and scientists. The superiority of our Calvet sensor technology in measuring up to 95% of heat is testament to this.

You can be assured that whether you work in Life Sciences, Process Safety and Energetics, Energy and Environment, Inorganic or Organic Materials Science our skilled managers will ensure the most relevant solution for your projects and applications.

With a direct presence in four continents and an excellent global distributor network we are here to listen to your needs and provide you with the information, tools and skills to address them.

We firmly believe that only through Innovation and Customer Excellence can we truly deliver our vision to Reimagine Material Characterization. »

Sylvain Calzaroni
Managing Director



LIFE SCIENCES

API, Excipients, Drug delivery systems, Proteins, Enzymes, Food, Carbohydrates, Fats. Stability, Polymorphism, Unfolding, Denaturation, Aggregation, Melting, Gel formation, Gelatinization



PROCESS SAFETY

Energetic materials, Propellants, Explosives, Reactants and products of chemical reactions at large scale. Heat capacity, Synthesis reaction, Decomposition, Runaway reaction, Temperature and Pressure rise.



ENERGY & ENVIRONMENT

Oil & Gas, Gas hydrates Stability, Wax crystallization, Biomass, Hydrogen storage materials, Nuclear fuel and wastes, Catalysts & adsorbents, Thermal energy storage materials, Batteries, Gas & vapour sorption, Heat capacity, Thermal stability, Transitions



INORGANIC MATERIALS SCIENCE

Nanomaterials, Metals, Alloys, Ceramics, Glass, Cement, Plaster, Minerals. Sintering, Thermal expansion, Corrosion, Hydration, Transitions, Heat capacity, Thermal stability



ORGANIC MATERIALS SCIENCE

Polymers, Thermoplastics, Thermosets. Glass transition, Oxidation resistance, Heat capacity, Thermal stability, Curing ratio, Transitions

GAS SORPTION

Our range of gas sorption instruments for the characterization of materials across wide temperature ranges and using all common gas sorption techniques.

COUPLING



CALVET
Calorimetry

Measurement of heat of sorption



MICROCALVET
Microcalorimetry

Heat of sorption on small samples



Sub-ambient to 500 °C



GASPRO

- GAS SORPTION ANALYSIS**
Characterizes material sorption capacities and rates
- PRESSURE VACUUM**
Operates under high pressure and vacuum
- CORROSIVE AND REACTIVE GASES**
Able to run in various aggressive atmospheres
- COUPLING**
Couples with CALVET or MICROCALVET instruments

GAS SORPTION SOFTWARE

The powerful software suite provided for all SETARAM gas sorption analyzers is composed of HY-DATA and HY-ANALYSIS.

- HY-DATA is dedicated to the programming of the testing processes. Fifteen different processes are available for measurements like PCT, Kinetics and Cycle-life, and for operations like calibration or sample preparation. The test parameters are set through a user-friendly interface. HY-DATA also displays live data and generates the PCT and kinetics data files.
- HY-ANALYSIS is the data analysis software solution for plotting and analyzing the experimental data files.

The equations of state used for the different test gases are based on the industry standard NIST Refprop database.



CRYOPRO
Down to -260 °C



MICRODOSER
For small amount of sample

EXPERIMENTAL OPTIONS & VERSATILITY

PLUG-IN ACCESSORIES



FLEXI HP MS
Evolved gas

High pressure mass spectrometer



FLEXI HYCO
Hydrogen

High-pressure Hydrogen Delivery System

CUSTOMIZED SOLUTIONS

Setaram's standard product line provides a variety of options for ultimate instrument versatility.

There may be times though when you require more, or new options to expand your research. We will work with you to find the right solution for your specific application whether that be:

- Expanded options for our current product line
- Customized laboratory, sample or process conditions
- New instrument development
- Specialized contract testing

Your research may require more specialized analytical equipment. Data acquired under your experimental conditions may be far from the true conditions of the materials used, and so unreliable. Perhaps you continue to want maximum information from a single experiment. With these realities in mind KEP Technologies offers customization of your instrument to best address your needs.

Led from our new Innovation Center in Geneva, our R&D service routinely develops robust and reliable customized instruments compliant with very specific customer needs. We can modify any aspect from the instrument's design to address ergonomics, sensors, operation range, electronics and software.

APPLICATION SUPPORT

Our global applications expertise, acquired over 70 years, combines our goal to help push research boundaries with our practical, hands-on approach to application support, demonstrations and contract testing.

On a daily basis we help solve client's problems from standardized testing on single or multiple samples, method development, complex data interpretation support and detailed instrument or application-oriented training across a wide range of techniques. An extensive database of thermal data across a broad range of applications can also be found in our Application Library on the Setaram website.



With Setaram application laboratories in 4 of our global sites, and a global network of Setaram partner laboratories, we can help you develop your application to advance your research goals.

TRAINING AND CONSULTING

Programs for Newcomers and Advanced Users

We have general sessions for individuals or groups that teach everything from instrument functionality to advanced techniques to ensure optimal use of your instrument.

TECHNIQUES & METHODOLOGIES

Focused on a particular instrument or application

we help more experienced users optimize and design experimental conditions to enhance and improve data quality.

EXPERIMENTAL DESIGN

TRAINING & CONSULTING

CUSTOMIZED SESSIONS

Customized sessions are individual training in your laboratory or at our local headquarters. We design these with you to help you acquire specific experience in instrumentation, software or applications.

CUSTOMER SUPPORT

We're fully committed to ensuring our customers get the best from their purchase and to providing complete solutions to specific analytical challenges.

Technical Assistance

Our highly qualified technical support team is available to help you with your specific needs. Please visit setaramsolutions.com/technical-support to connect with your local technician.

Routine Maintenance, Support Training, & Post Warranty Service Contracts

All our instruments offer years of uninterrupted service and to complement this we offer a range of verification and support contracts tailored to your individual system and requirements. In addition to running experimentation specifically designed to «prove» the instrumentation, technicians can train customers on routine maintenance and calibration procedures. Prices of these contracts depend on the system, the level of support required and the location of the installation. As such prices are available upon request.

Product Upgrades

As your needs grow, so can your instrument capability. Whether you need new accessories and adaptations or are interested in trading-in your instrument for the latest model, we can help you.

3Q

3Q is a full IQ/OQ/PQ process and verification of your system and data quality provided for customers requiring a high degree of confidence in the data provided. Discuss with your local sales representative or request a quotation at setaramsolutions.com/contact



Switzerland – France – China – United States – India – Hong Kong
For contact details: www.setaramsolutions.com or setaram@kep-technologies.com

