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- Milano, Italy - Telephone: 39-02-27421-283
- Tokyo, Japan - Telephone: 81-3-5479-8418
- Barcelona, Spain - Telephone: 34-93-600-9300
- Melbourne, Australia - Telephone: 61-3-9553-0813
- Stockholm, Sweden - Telephone: 46-8-59-46-92-00
TA Instruments' history of meeting customer needs for high technology products, quality manufacturing and strong after-sales support has earned us worldwide recognition as the leader in thermal analysis and rheology instrumentation.

Based in New Castle, DE (USA), we have offices throughout the USA, Europe, Japan and Australia and employ a network of quality agents in other countries.

The TA Instruments history of innovation is long and impressive. The Q Series™ thermal analysis modules are the most recent innovations resulting from our continuous investment in Research and Development.

Our goal is to provide you with reliable, high performance products and support that maximize your benefit from them. This includes multiple levels of training and service that have been consistently ranked #1 in independent surveys.

We look forward to the opportunity to earn your business, make your work more productive and become your preferred partner in materials characterization.

Sincerely

Patrick Y. Howard, Ph. D.
President

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1962</td>
<td>900 Thermal Analyzer</td>
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<tr>
<td>1968</td>
<td>Pressure DSC</td>
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<td>1976</td>
<td>First Commercial DMA</td>
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<td>1978</td>
<td>1090 Thermal Analyzer introduced computer technology into system control and data analysis</td>
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<td>1982</td>
<td>Dual Sample DSC</td>
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<td>1986</td>
<td>Photocalorimetry</td>
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<td>1988</td>
<td>Dielectric Analyzer</td>
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<td>1991</td>
<td>Hi-Res™ TGA</td>
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<td>1992</td>
<td>Simultaneous TGA-DTA</td>
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<td>1992</td>
<td>Modulated DSC®</td>
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<td>1994</td>
<td>Acquired Carri-Med</td>
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<td>1996</td>
<td>AR 1000 Rheometer</td>
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<td>1996</td>
<td>DMA 2980</td>
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<td>1998</td>
<td>Micro TA</td>
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<td>2000</td>
<td>AR 2000 Rheometer with Smart Swap™</td>
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<td>2001</td>
<td>Q Series™ DSC &amp; TGA Tzero™ DSC Technology</td>
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<tr>
<td>2002</td>
<td>Q Series DMA &amp; SDT</td>
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Why TA Instruments

More worldwide customers choose TA Instruments than any competitor as their preferred thermal analysis and rheology supplier. We earn this distinction each sale by best meeting customer needs and expectations for high technology products, quality manufacturing, timely deliveries, excellent training, and superior after-sales support.

Sales and Service
We pride ourselves in the technical competence and professionalism of our sales force, whose only business is thermal analysis and rheology. TA Instruments is recognized worldwide for its prompt, courteous and knowledgeable service staff. Their specialized knowledge and experience are major reasons why current customers increasingly endorse our company and products to their worldwide colleagues.

Innovative Engineering
Our company is the recognized leader for innovation and cutting-edge technology. Representative examples include the Q Series™ Modules, the revolutionary Tzero™ DSC technology, Modulated DSC®, and the AR 2000 Rheometer with Mobius Drive™ and Smart Swap™ technology. We invest twice the industry average in research and development and consistently outpace our competitors in introducing new products.

Quality Products
All thermal analyzers are manufactured to ISO 9002 procedures in our expanded plant in New Castle, DE, USA. State-of-the-art flow manufacturing procedures and a highly motivated work force ensure high quality products with industry-leading delivery times.

Technical Support
Customers prefer TA Instruments because they buy analyzers to solve problems and often need operation and applications assistance. Our worldwide technical support staff is the largest and most experienced in the industry, and are accessible daily by telephone, e-mail, or via our website. We also provide multiple training opportunities in our worldwide facilities.
DSC
DIFFERENTIAL SCANNING CALORIMETERS

DSC measures heat flows and temperatures associated with transitions in a material. The Q1000 is our top-of-the-line research-grade DSC, with unsurpassed performance in baseline stability, resolution and sensitivity. It offers our patent-pending Advanced Tzero™ technology, the most powerful DSC technology commercially available. The Q1000 is a complete DSC that includes MDSC®, an intelligent 50-position autosampler, and digital mass flow controllers. A full complement of cooling devices is available for the Q1000, which can be used over the temperature range –180 to 725°C. Other options include a Pressure DSC cell and Photocalorimeter Accessory (PCA). The Q1000 is well equipped to handle the most demanding DSC applications.

The Q100 is a versatile research-grade DSC with our patent-pending Tzero technology. With many Q1000 performance features, the Q100 easily outperforms competitive research models. It is an expandable module, to which MDSC®, a 50 position autosampler, digital mass flow controllers, and the Photocalorimeter Accessory (PCA) can be added. Innovative technology, performance, upgradability, and ease-of-use make the Q100 a desirable addition to any laboratory. A full complement of cooling devices is available for the Q100, which can be used over the temperature range –180 to 725°C.
The Q10 is a cost-effective, easy-to-use, general purpose DSC with basic performance features equivalent to many competitive research models. It is ideal for research, teaching, and quality control applications that require a rugged, reliable, basic DSC. A full complement of cooling devices is available for the Q10, which can be used over the temperature range –180 to 725°C.

**AUTOSAMPLER**

The Autosampler accessory provides reliable unattended operation of the Q1000 or Q100 DSC in any configuration, even with the use of cooling accessories. It is an integrated system that enhances productivity. Its features include a patent-pending optical sensor that ensures accurate sample placement, and a 50 sample pan, 5 reference pan carousel. Maximum productivity is achieved when the autosampler is used in conjunction with autoanalysis software. The autosampler is a powerful tool for the research and analytical laboratory.

**Modulated DSC®**

MDSC®, is a patented technology* whose benefits include increased sensitivity for weak transitions, simultaneous optimization of sensitivity and resolution, improved interpretation of complex transitions, and measurement of heat capacity and thermal conductivity. MDSC® is available for the Q100 and is standard on the Q1000.

*U.S. Patent Nos. B1 5,224,775; 5,248,199; 5,335,993; 5,346,306; 5,439,291; 5,474,385
TGA measures weight changes in materials to determine composition and thermal stability. The Q500 is TA Instruments top-of-the-line research-grade TGA. Its efficient low mass furnace, ultra-reliable thermobalance, unique purge gas system (with mass flow control), and advanced automation provide for superior TGA performance from ambient to 1000°C. Optional accessories include Hi-Res™ TGA*, Modulated TGA, the EGA furnace and an autosampler. Hi-Res™ TGA improves the separation of closely occurring events. MTGA™** uses a modulated temperature program to obtain kinetic data more rapidly than the standard ASTM method. The EGA furnace is a quartz-lined version of the standard furnace that is ideal for MS and FTIR operation. The Q500 is an expandable system that is well equipped to handle TGA applications, from the routine to the most demanding.

*U.S. Patent No. 5,165,792  Canadian Patent No. 2,051,578
**U.S. Patent No. 6,113,261

The Q50 is a cost-effective, easy-to-use, general purpose TGA with many of the basic features of the Q500. It offers performance superior to competitive research-grade models. The Q50 is ideal for laboratories that need a high quality TGA for standard applications within the temperature range ambient to 1000°C. When equipped with the quartz-lined EGA furnace, the Q50 is an ideal instrument for coupled use with MS and FTIR analyzers. TA Instruments offers an optional bench-top mass spectrometer.
The Q600 SDT provides simultaneous heat flow/transition temperature (DSC) and weight loss (TGA) measurements. The system utilizes a dual-beam balance and includes mass flow control with gas switching capability as well as a touch screen control. The temperature range of the Q600 is ambient to 1500°C.

**AUTOSAMPLER**

The Q500 Autosampler accessory is a programmable, multi-position sample carousel that allows overnight or “round-the-clock” automated analyses, in a random or sequential fashion, of up to 16 samples. All aspects of sample testing are totally automated and controlled by the Q500 software, including pan taring, pan loading, sample weighing, furnace movement, pan unloading and furnace cooling.

Maximum productivity from the Q500 Autosampler is achieved when paired with the intelligent Thermal Advantage Autoanalysis software, which permits pre-programmed analysis, comparison and presentation of results.
DMA
Dynamic Mechanical Analysis

DMA measures the mechanical properties of materials as a function of time, temperature, and frequency. The Q800 incorporates unique technology to provide the ultimate in performance, versatility, and ease-of-use. State-of-the-art non-contact, linear drive motor technology provides precise stress control. Ultra sensitive optical encoder technology is used to measure strain and air bearing technology insures virtually friction-free movement. The combination of these technologies sets the Q800 apart from competitive instruments that use conventional stepper motors, LVDT strain measurement devices, and mechanical springs.

The Q800 DMA operates over a wide temperature range (-150 to 600°C) and provides multiple modes of deformation including dual/single cantilever and 3-point bending, tension, compression, and shear. The clamps are individually calibrated for data accuracy and the elegant but simple design facilitates sample mounting.
TMA 2940
Thermomechanical Analyzer

TMA measures dimensional changes in materials. Key features of the TMA 2940 include a wide variety of interchangeable probes accommodating solids, powders, fibers and thin films; automated furnace movement with convenient sample loading for ease-of-use; programmable force (0.001 to 1.0 N); and broad temperature range (-150 to 1000°C).

DEA 2970
Dielectric Analyzer

DEA measures the capacitive and conductive nature of materials under a cyclic (sinusoidal) voltage. The DEA 2970 features four types of interchangeable, disposable sensors (ceramic parallel plate, ceramic thin film parallel plate, ceramic single surface and flexible remote single surface), 5 decades of frequency multiplexing, and a wide temperature range (-150 to 500°C). The DEA can handle samples ranging from solids to liquids.
AR 2000 Rheometer

The AR 2000 is our most powerful, versatile and easy-to-use, research-grade rheometer. It offers the widest range of torque and normal force, superior strain resolution, broad frequency range and several optional temperature control systems (-150 to 600°C). Unique Smart Swap™ technology permits temperature system interchange in a fraction of the time needed with competitive models. The Mobius Drive™ provides exceptional controlled stress and controlled rate performance. It is well equipped to handle the most demanding rheological applications.

AR 1000 Rheometer

The AR 1000 is a research-grade rheometer incorporating a unique motor design and advanced material air bearing. It has excellent torque performance, very low inertia, and easily outperforms competitive research-grade systems. The AR 1000 can be equipped with multiple temperature control options, normal force sensor, and custom geometries.
AR 500 Rheometer

The AR 500 is a general purpose rheometer with many features of our research models. Cost-effective, reliable, and easy-to-use, it is ideal for R&D or quality control of liquids and semi-solids. The AR 500 is an upgradeable system that can grow as your applications expand. It is the ideal system for users interested in a robust, cost effective system with outstanding basic performance.

QCR II Quality Control Rheometer

This rheometer is designed for QC applications where simple viscometer measurements provide insufficient information. The QCR II is based upon the successful AR 500, and is configured with automated test procedures (scripts) that provide "R&D quality" results in an instrument that is easy-to-use, priced to fit a QC budget, and requires little or no operator training. The QCR II is ideal for use where an analytical method developed in R & D is being transferred to a plant location.

CSA II Asphalt Rheometer

Based upon the AR 500, the CSA II is a dedicated dynamic shear rheometer designed for rapid characterization of asphalt binders in accordance with the latest US Federal Highway Administration specifications. The CSA II uses pre-programmed approved methods that allow inexperienced operators to successfully and reliably evaluate asphalt binders according to the AASHTO test procedures (TP5, PP6, and MP1). It is routinely used by many asphalt suppliers, State Departments of Transportation, and research institutes that study asphalt.