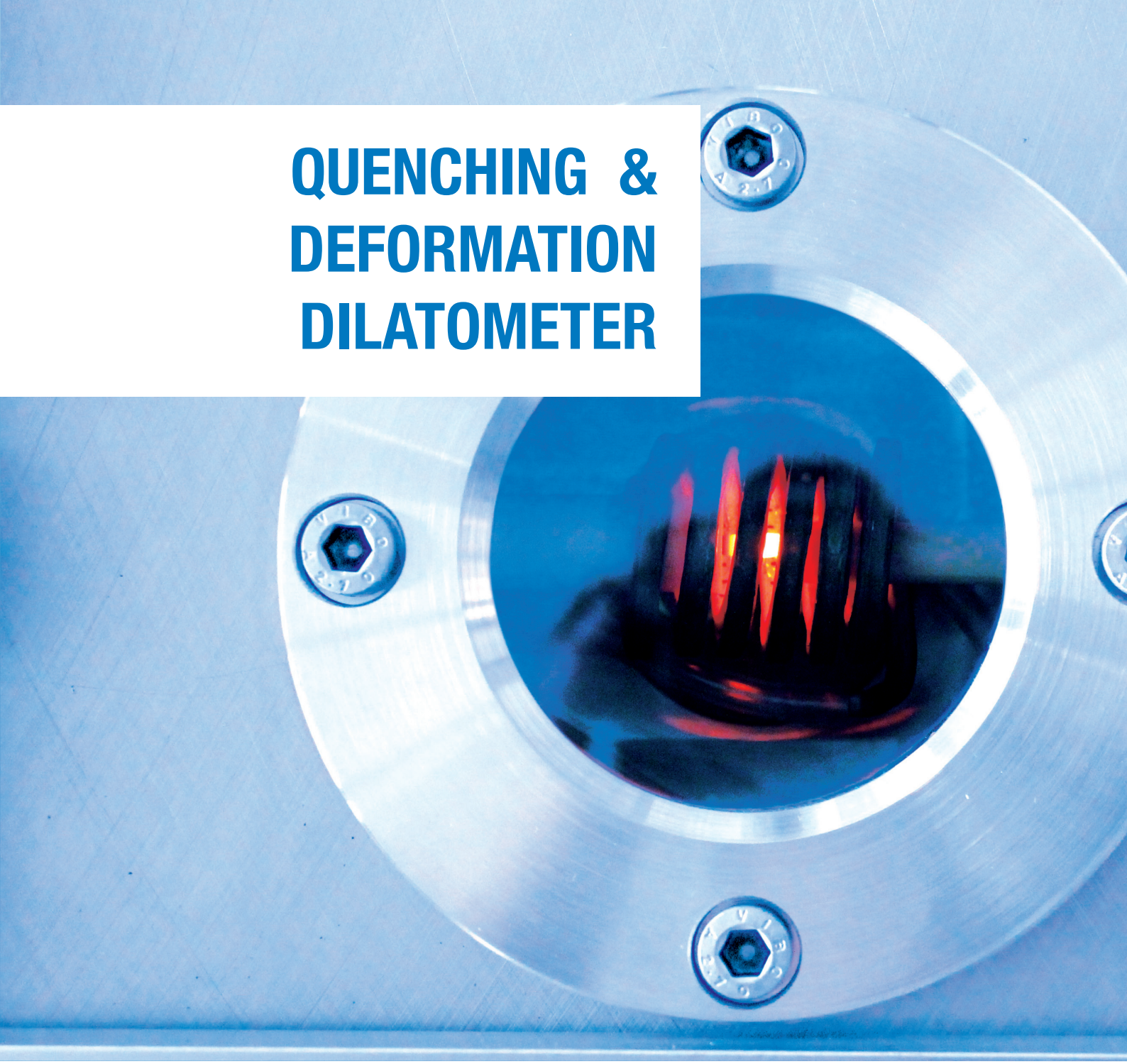
QUENCHING & DEFORMATION DILATOMETER



LINSEIS

Quenching & Deformation Dilatometer

The Quenching and Deformation Dilatometer L78 RITA is especially suitable for the determination of deformation paramenter and of TTT, CHT and CCT diagrams. The special induction furnace allows heating and cooling at controlled speeds in excess of 400°C/s. The system complies with ASTM A1033.

All critical parameters such as heat up and cool down speed, gas control and safety features are software controlled. The professional software LINSEIS TA-WIN operates exclusively under the Microsoft© operation system. All routine (creation of CHT/CCT/TTT diagrams) and demanding applications are solved by the unique Software package that comes with the instrument.

Export functions in ASCII-format as well as graphic output are available.

The used linerar actuator machanical system makes it possible to achieve deformation rates from 0.001 up to 200 mm/s in single or multiple hits.

System configurations

Quenching Dilatometer

Quenching

- **CTE option**
- **Cryogenic option** (temperature range: –170°C)
- **DSC option** (up to 1450°C)

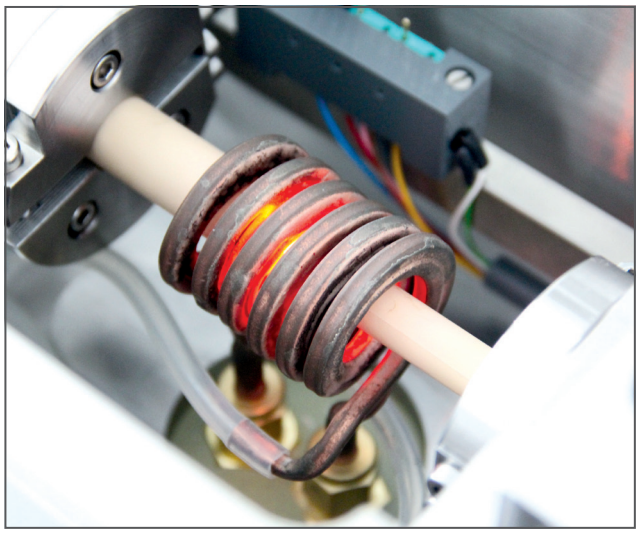
Deformation mode

- **Laser displacement sensor option**

Tension mode

- **Laser displacement sensor option**

Technical specifications



up to 2500°C/s

TTT, CHT, CCT

Turbo Molecular Pump

Technical specifications

	L 78 RITA/Q Quenching Dilatometer	L 78 RITA/Q/D Deformation Dilatometer
Temperature range	-100 up to 1600°C	-100 up to 1600°C
Sample geometry	solid and hollow samples	solid samples
Sample diameter	approx. 4 mm	approx. 5 mm
Sample length	approx. 10 mm	approx. 10 mm
Heating rates	4500°C/s	2500°C/s
Cooling rates	3000°C/s	500°C/s
Defromation force		25 kN
Deformation rate		0.001 up to 200 mm/s
Minimum pause between two deformation steps		60 ms
Machanical control modes		stroke, force, stress, strain (optional)

Tension adapter (compression—tension)			
Tensile- and compression force	max. 25 kN	**Heating- and cooling rate**	max. 100 Ks^{-1}
Deformation rate	max. 20 mms^{-1}	**Typical sample geometry**	d = 5 mm; l = 10 mm
Deformation way	max. ±5 mm		

Software

Features -Software

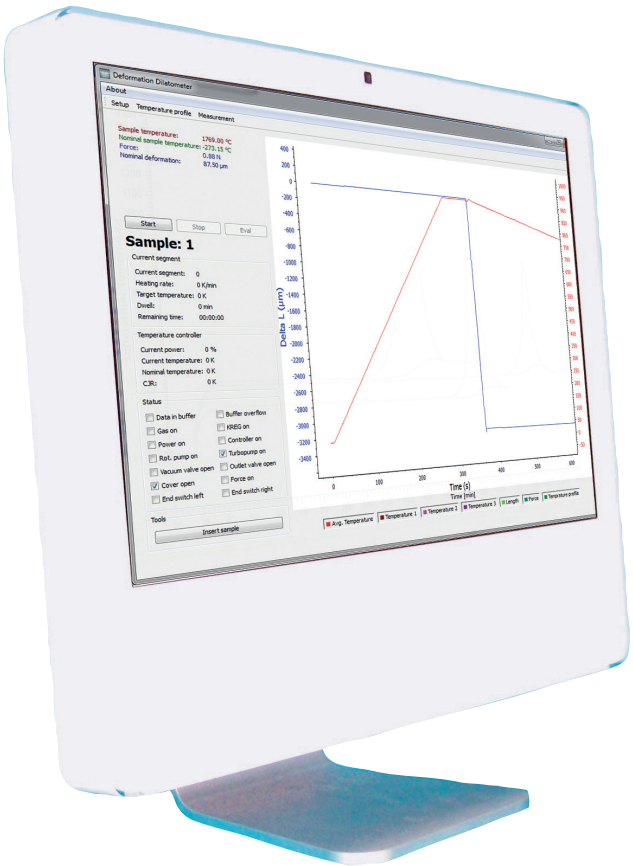
In respect to thermal and mechanical sample treatment numerous different matematical functions can be selected.

- User-friendly
- Multi-methods analysis (DSC TG, TMA, DIL, etc.)
- Zoom function
- Online help menu
- Report generator
- Data export to MS Excel
- Export and import of data ASCII
- Program capable of text editing
- Data security in case of power failure
- Thermocouple break protection
- Repetition measurements with minimum parameter input
- Evaluation of current measurement
- Curve comparison up to 32 curves
- Storage and export of evaluations
- Programmable gas control
- Statistical evaluation package
- Smoothing of total or partial measurement
- Tangent intersection determination (automatic or manual)
- Free scaling

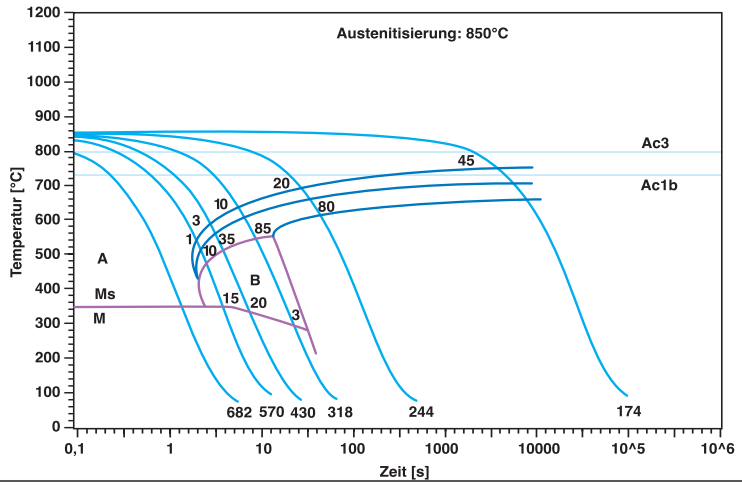
The information of a thermo analytical measurement can be increased when using the broad range of specialized Software.

Software options

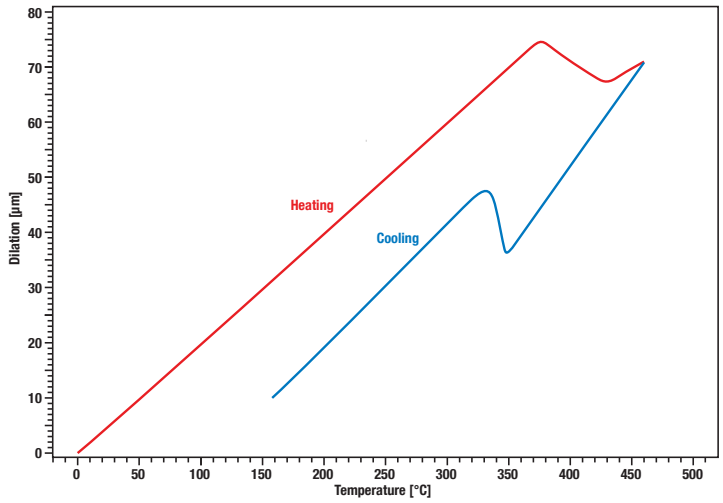
- Specific Heat determination (Cp)
- Rate Controlled Sintering (RCS)
- Calculated-DTA
- Quenching Dilatometer Software
- CHT / CCT / TTT Diagrams
- Thermo Kinetics Software



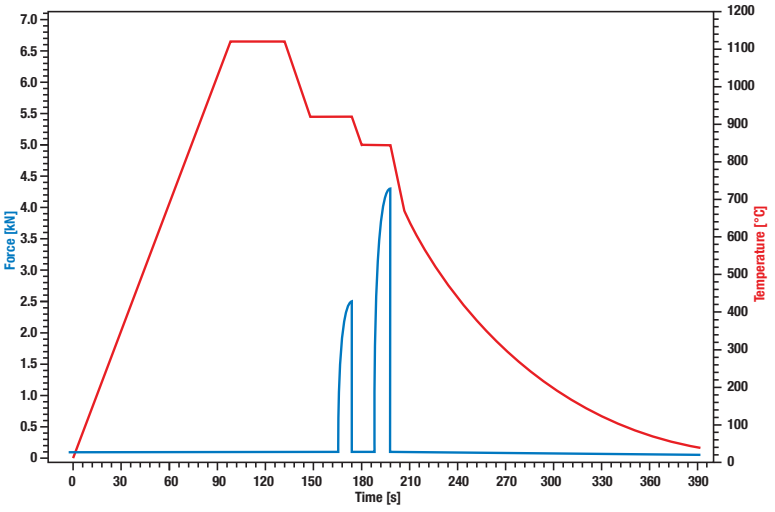
Applications



Picture © Dr. Sommer Werkstofftechnik GmbH, Issum



Static phase transformation without deformation



Dynamic phase transformation two thermomechanical deformations

LINSEIS GmbH
Vielitzerstr. 43
95100 Selb
Germany
Tel.: (+49) 9287–880 - 0
Fax: (+49) 9287–70488
E-mail: info@linseis.de

LINSEIS Inc.
109 North Gold Drive
Robbinsville, NJ 08691
USA
Tel.: (+1) 609 223 2070
Fax: (+1) 609 223 2074
E-mail: info@linseis.com

Products: DIL, TG, STA, DSC, HDSC, DTA, TMA, MS/FTIR, In-Situ EGA, Laser Flash, Seebeck Effect
Services: Service Lab, Calibration Service

www.linseis.com