

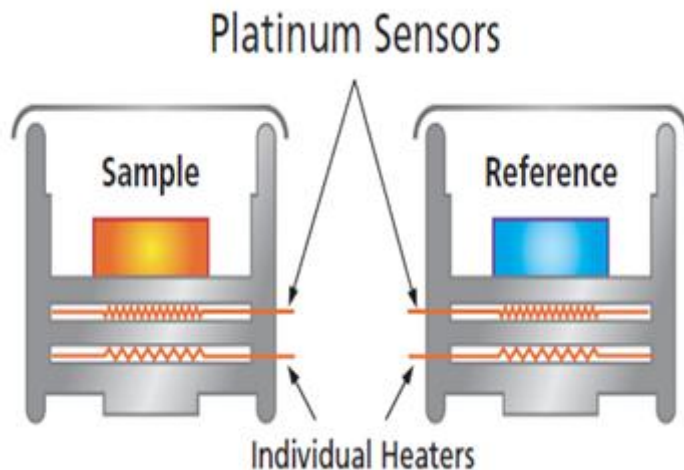
Laboratory of thermal analysis (DSC)

Department of Metal Physics, Watsonova 47

head: K. Csach, csach@saske.sk

Differential Scanning Calorimeter Perkin Elmer DSC 8000

- ✓ power compensation principle
- ✓ measurement of specific heat using StepScan
- ✓ temperature from -70°C to 600°C (730°C)
- ✓ heating rate up to $300^{\circ}\text{C}/\text{min}$



two independent small furnaces
measures heat flow directly
true isothermal measurement
fastest heating and cooling
fastest response times

responsible: A. Juríková, akasard@saske.sk

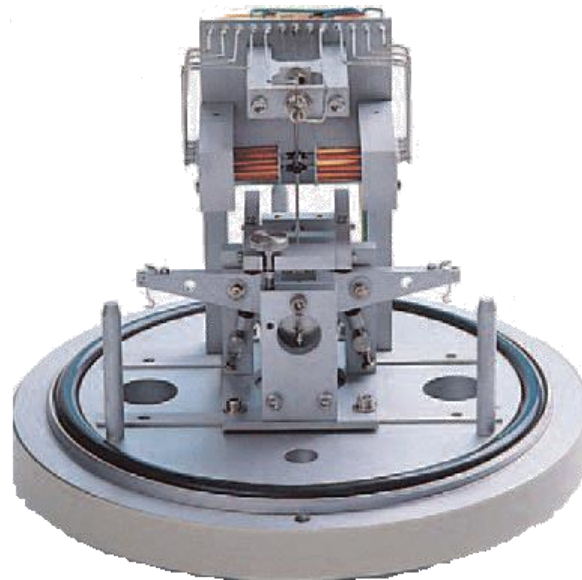
Laboratory of thermal analysis (TG, DTA)

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ThermoGravimetry + Differential Thermal Analysis SETARAM SETSYS 1600

- ✓ high sensitivity
- ✓ temperature interval from 25°C to 1 550°C
- ✓ heating rate up to 100°C/min



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Laboratory of thermal analysis (TMA)

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Thermo Mechanical Analysis TA Instruments Q400EM

- ✓ quartz glass
- ✓ low thermal and mechanical inertia
- ✓ dynamic loading mode
- ✓ modulated temperature mode



| | |
|--------------------------|-----------------|
| Temperature Range: | -70 to 1,000 °C |
| Sensitivity: | 15 nm |
| Displacement Resolution: | <0.5 nm |
| Force Range: | 0.001 to 2 N |
| Frequency Range: | 0.01 to 2 Hz |

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Laboratory of thermal analysis (DMA)

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head: K. Csach, csach@saske.sk

Dynamic Mechanical Analysis Q800 TA Instruments

- ✓ heat resistance alloy
- ✓ high rigidity
- ✓ dynamic and quasistatic loading mode



| | |
|--------------------------|---|
| Maximum Force | 18 N |
| Force Resolution | 0.01 mN |
| Strain Resolution | 1 nm |
| Modulus Range | up to 3×10^{12} Pa |
| Tan δ Sensitivity | 0.000 1 |
| Frequency Range | 0.01 to 200 Hz |
| Dynamic Deformation: | ± 0.5 to 10,000 μm |
| Temperature Range | -150 to 600 $^{\circ}\text{C}$ |
| Heating Rate | 0.1 to 20 $^{\circ}\text{C}/\text{min}$ |

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