

The new Flash DSC 2+

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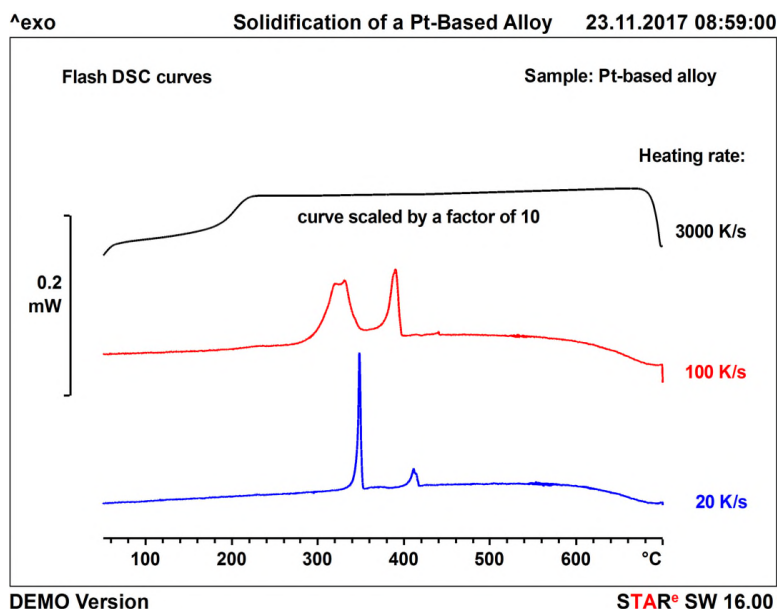
The Flash DSC 2+ revolutionizes rapid-scanning DSC with its capability for analyzing reorganization processes that were previously impossible to measure. In addition, the Flash DSC 2+ is the ideal complement to conventional DSC, which together cover a heating and cooling rate range of more than 7 decades.

With the Flash DSC 2+, two different sensors can be used, which differ in their time constant (i.e. in the maximum rates) and temperature range. The characteristic sensor parameters are given in the table below.

	Standard UFS 1	High-temperature UFH 1
Temperature range	-95 °C to 500 °C	-95 °C to 1000 °C
Heating rates up to	40'000 K/s	50'000 K/s
Cooling rates up to	4'000 K/s	40'000 K/s
Time constant	1 ms	0.2 ms

The wide operating temperature range allows transformations in various materials to be investigated. To prevent oxidation, for example of metals, the Flash DSC 2+ can also be operated in a quasi oxygen free environment.

The new sensor permits an operating temperature of up to 1000 °C; this makes it ideal for the analysis of metallic glasses, as will be demonstrated using some practical examples.



The figure shows the cooling curves of a Pt-based metal alloy cooled at different rates from 700 to 50 °C. The curve measured at 3000 K/s was divided by 10 to permit the representation of all heat flow curves in the same diagram. At relatively low cooling rates (20 and 100 K/s), two crystallization peaks are observed. The sample forms an amorphous glass when cooled at 3000 K/s.