

SIMULTANEOUS TG - DSC 111: A NEW COMBINATION FROM SETARAM

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ABSTRACT

The combination of Differential Thermal Analysis with Thermogravimetric Analysis is a method widely known and used in a large range of temperature. However the measurements run with a \*DTA are only qualitative, and sometimes are issued from the investigation of a sample different from the thermogravimetric one. The DSC 111 has been manufactured by Setaram S.A. for several years and has broadened the field of applications of Differential Scanning Calorimetry, especially for the investigations of gas sample interactions. The original design of DSC 111 (Open experimental tubes) is very attractive for a combination with thermobalance and this gives today the new simultaneous \*TG-DSC 111. This new instrument combines the well known capacities of DSC 111 with the qualities of a symmetrical balance of very high precision and stability in a wide range of temperature 150 K up to 1.100 K (~ 123 °C up to 827 °C). The coupling between the symmetrical balance and the DSC 111 is tight, making easy the work under gas flow.

The TG-DSC 111 is especially designed for all investigations relative to interactions between gases and solid or liquid samples. The fields of applications are very wide: Physisorption - chemisorption - heterogeneous catalysis - oxidation - reduction surface reactivity - materials stability ...