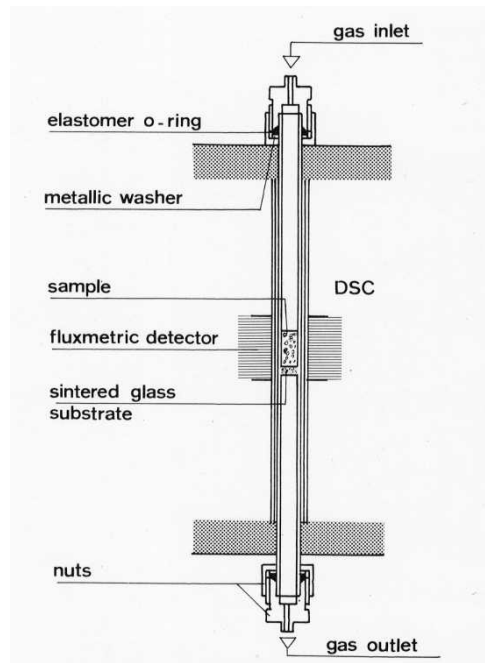


Sensys

Silica reactor for gas adsorption

Experimental

Gas adsorption investigation requires a good contact between the gas and the solid. A silica reactor has been designed for the Sensys in which the reactive gas flows through the sample situated on a sintered glass. This particular cell design is especially interesting for the gas-solid reactions or also for the investigation of reactions occurring in a corrosive medium. The exhausted gases are easily analyzed at the outlet of the silica tube by means of a gas chromatograph or a mass spectrometer (see application note AN226).



Characteristics

The reactor is a silica tube (length : 167 mm, diameter : 7 mm).

A sintered glass is located in the medium part of the tube, to support the solid sample. The connection with gas inlet and outlet is performed by means of nuts. The tightness of the device is obtained by using a metallic washer and an elastomer o-ring between the nuts.

The sample on the sintered glass substrate is centered in the fluxmetric detection zone of the DSC.

Applications

The main applications are the following :

- Gas adsorption on catalysts

Two modes are used : the continuous gas adsorption until the catalyst is saturated or the pulsed gas adsorption. In this last mode, a pulse of reactive gas is injected in a carrier gas. The non absorbed gas is analyzed at the outlet of the tube.

- Therefore the heat of adsorption can be precisely associated to the real amount of gas adsorbed.

- Gas-solid reaction in corrosive medium

The silica tube may be used to investigate such reaction without damage of the DSC.

Instrument

Sensys evo DSC

