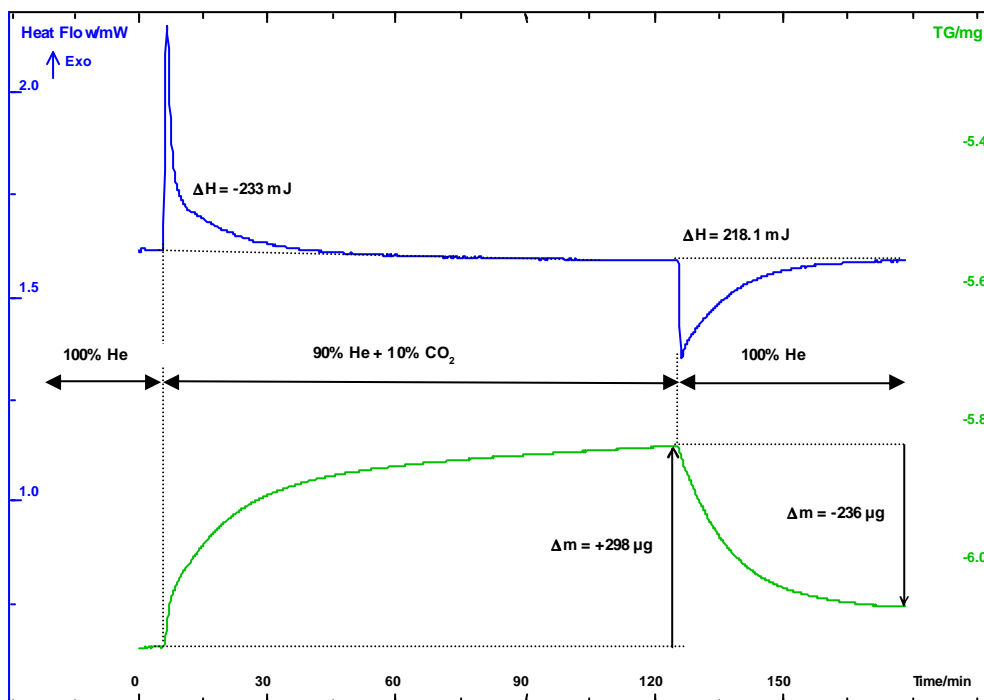


## Adsorption and desorption of CO<sub>2</sub> on a catalyst

### Introduction

CO<sub>2</sub> limitation has become nowadays a major concern. One way to limit CO<sub>2</sub> concentration in atmosphere is to adsorb it on specific material. SENSYS evo TG-DSC with its sensitivity which is not depending on the nature of the gas is a particularly powerful tool as it makes possible to study adsorption and desorption of a gas on a catalyst.



### Experimental

**Sample :** catalyst

**Mass :** 40 mg

**Temperature :** 40°C

**Atmosphere :** pure helium during 5 min then 10% CO<sub>2</sub> in helium during 2 hours, then pure helium again during one hour.

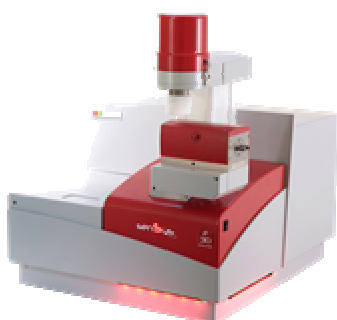
*Notice : before experiment, the catalyst was previously heated up to 220°C during 2 hours under pure helium.*

### Results

When the mixture 10% CO<sub>2</sub> + Helium is introduced, an adsorption is observed : it corresponds to a mass increase of 298 μg and an exotherm of 233 mJ.

When the gas is pure helium again, a desorption is observed: it corresponds to a mass loss of 236 μg and an endotherm of 218.1 mJ.

**SENSYS evo TG-DSC**  
-120 to 830°C



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