

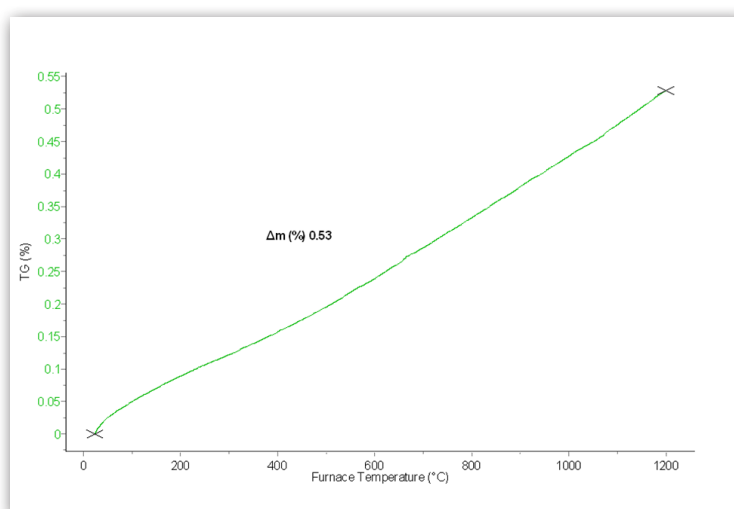
## Thermogravimetric study of the hydrogen resistance of a titanium-based alloy

### INTRODUCTION

When hydrogen is transported in gaseous form, it represents a significant maintenance cost due to the short lifetime of materials (steel, composites, etc.). Thermogravimetric experiments at high temperature can help to understand degradation mechanisms of materials under hydrogen.

### EXPERIMENT

The resistance of a titanium-based alloy against hydrogen was study using THEMYS H2 TGA instrument. The sample was heated up to 1200°C at 10°C/min under hydrogen.



### RESULTS AND CONCLUSION

The increase in sample weight indicates hydrogen adsorption in the titanium-based alloy. The hydrogenation of the alloy increases almost linearly with temperature up to the final temperature.

### INSTRUMENT

#### THEMYS H2

