



Characterization of the mechanical behavior of materials



Société d'accélération de transfert
de technologie

KEY WORDS

Video extensometry

Direct Analysis

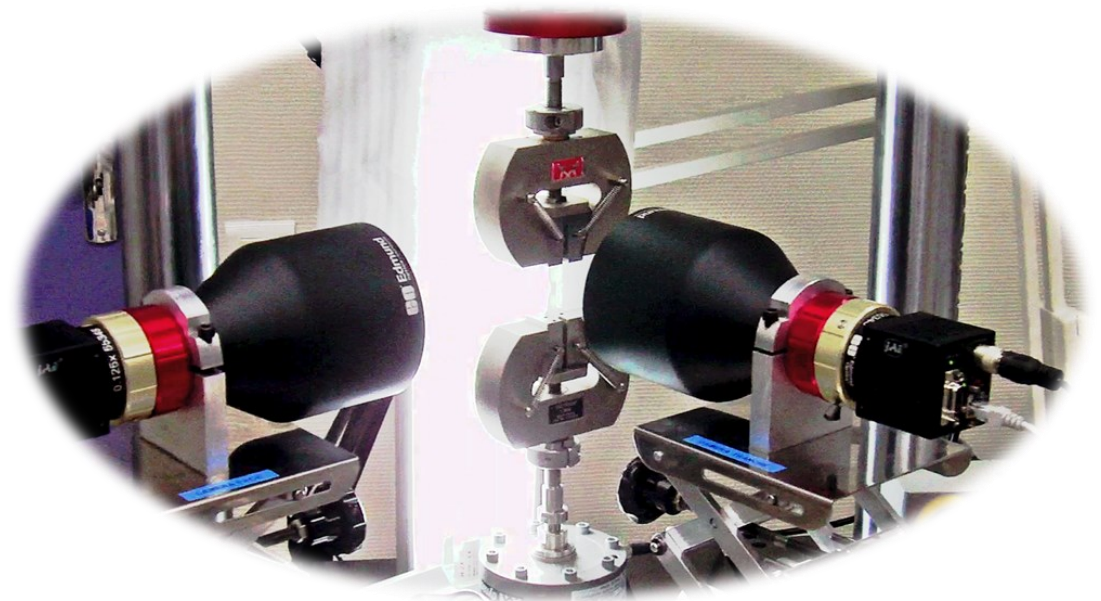
Contactless

3D evolution

Direct analysis of material's necking area by two cameras

This system must be coupled to a in-situ traction device, to observe the behavior of the sample drawn during any phase traction .

The software analyses images and can achieve a control imaging devices (and/or traction machine) according to the course of the trial.



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BENEFITS

- Information on the 3D evolution of materials upon drawing.
- Analysis of complex systems during anisotropic deformation.
- Direct measurement of a necking area.
- Monitoring the evolution of tears.
- Follow-up of very large deformations (eg on plastic films).
- No requirement of sample marking or any other surface modification.

APPLICATIONS

- Characterization of the mechanical behavior of materials.
- Determination of true stress, strain data.
- Access to material constitutive laws relying on true mechanical parameters.

DEVELOPPEMENT STATUS

Laboratory prototype tested on materials with different behaviors:

- Low deformation : fiber reinforced polymer composites (e.g. polyester/glass fiber composites).
- Hyperelastic behavior : Elastomers
- Large plasticity : polyolefins

INTELLECTUAL PROPERTY:

Deposited Patent :

"Direct analysis of material's necking area by two cameras"