

## MECHANICAL CHARACTERIZATION

### Modular tribometer

#### NANOVEA T 50

The tribometer Nanovea T50 allows to perform tribological tests, to evaluate the performance of a material coupling in relative motion with applied load, determining the coefficient of friction generated and the wear of materials.

In this instrument the load on the coupling to be tested is obtained with a passive system of calibrated masses (1-40N), applied on the static part of the tribological pair by means of a balanced arm. The same arm is moved with a load cell that records the developed reaction force (up to 10kHz acquisition), allowing to calculate the friction coefficient.

The second part of the tribological pair is moved by a motor with position, speed and acceleration control, to which various modules can be connected to perform pin-on-disk (rotative), semi-linear, or linear tribological tests.

Implementation of a block-on-ring system is possible.

Other modules allow the modification of environmental variables, such as the furnace for tests up to 1000°C, the liquid-cup for tests with liquids or lubricants and the cell for tribocorrosive evaluations.

Wear rates of the tested parts are obtained by post-analysis of the components, such as microscopy or profilometry, which also allow for the evaluation of wear mechanisms.

|                         | CHARACTERISTICS   | NOTES   |
|-------------------------|---|---|
| Load                    | 1÷40 N  | Expandable up to 60N                              |
| Motor speed             | 0,01÷5000 RPM   | 0-1000 RPM in 0,15 s                              |
| Position control        | 0,01°   | Possible fretting tests                           |
| Temperature control     | Static thermocouple<br>Furnace thermocouple<br>Temperature and humidity recording |   |
| Data-logger             | 1÷10000 Hz  | On all channels                                   |
| High temperature module | 25÷1000° C  | 1000° C on rotary tests<br>500° C on linear tests |
| Tribocorrosion module   |   | Reciprocating movement                            |
| Liquid cup              |   | For rotary tests<br>Compatible with HT module     |

## Test modules



Rotative



Linear



Block-on-ring \*

\* limit for heat sensitivity of moving parts materials. Possible implementation.

## Environmental modules

\*modules that can be equipped



Tribo corrosion



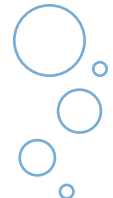
High temperature



Cryogenic\*



Immersion / Lubrication



Atmosphere / humidity controlled\*

