



Our skills

Scientific instrumentation around optical microscopy and scanning electron microscopy.

Modification of scientific instrumentation for harsh environments (nuclear, chemistry, biology, etc.)

NewTec
Scientific

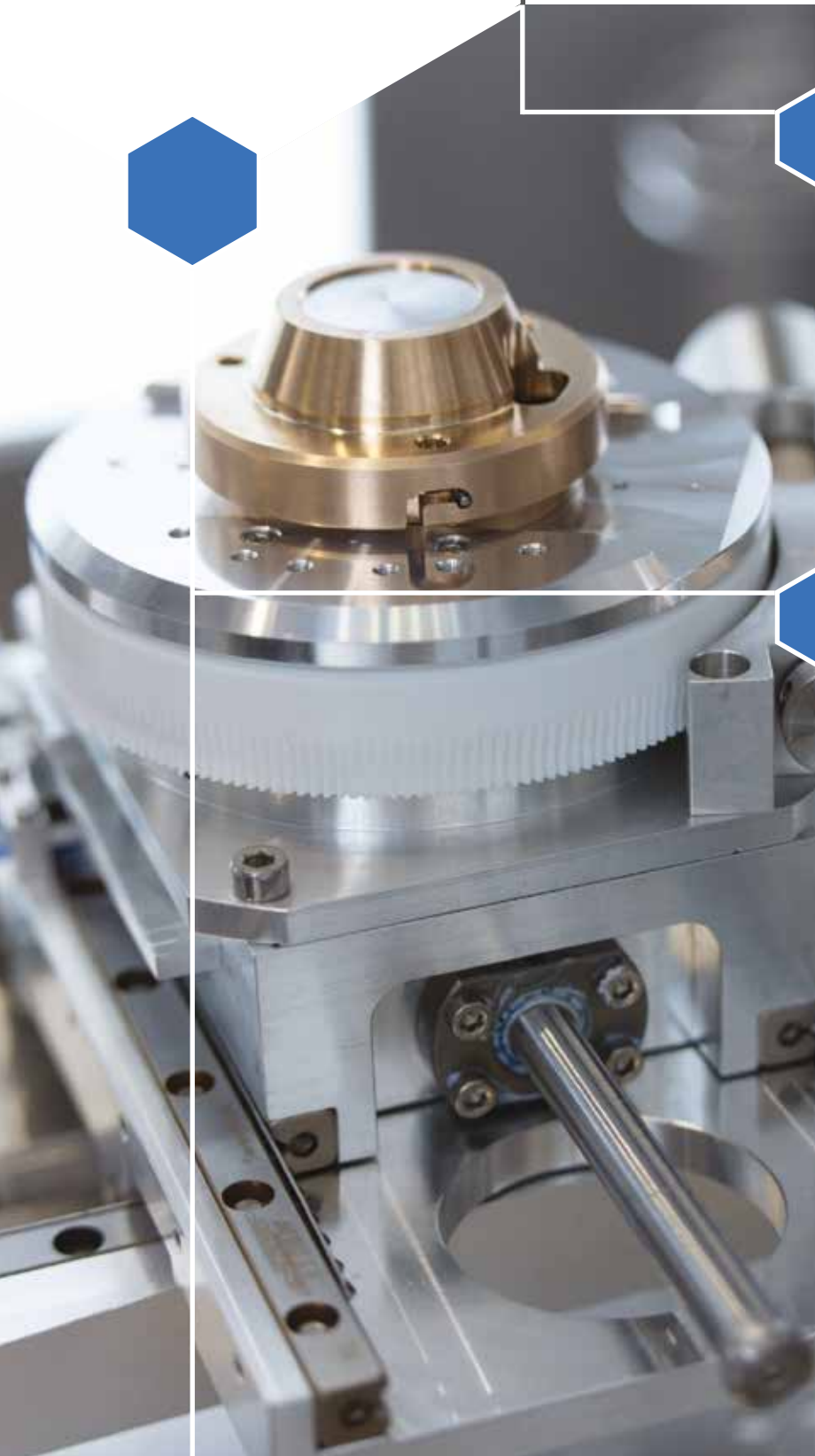
“ *Competence and experience at the service of laboratories and research centres.* ”

Modification of scientific instrumentation

For harsh environments

NEWTEC SCIENTIFIC DEVELOPS SOLUTIONS ADAPTED TO COMPLEX AND HARSH ENVIRONMENTS, PARTICULARLY FOR THE NUCLEAR INDUSTRY. (REMOTE HANDLING AND SHIELDING)

- Microscope modifications: SEM / Glove Boxes
- Preparation of irradiated samples
- Design of a metallizer for a shielded enclosure
- Modification of microscopes for battery analysis (chemistry)
- Specimen holder designed for cryogenics and heating





MT 1000

Partnership with the LSPM lab.CNRS Villetaneuse

The MT1000 tensile stage is a precise, user friendly, instrument for analysing and qualifying the mechanical and/or thermomechanical properties of materials.

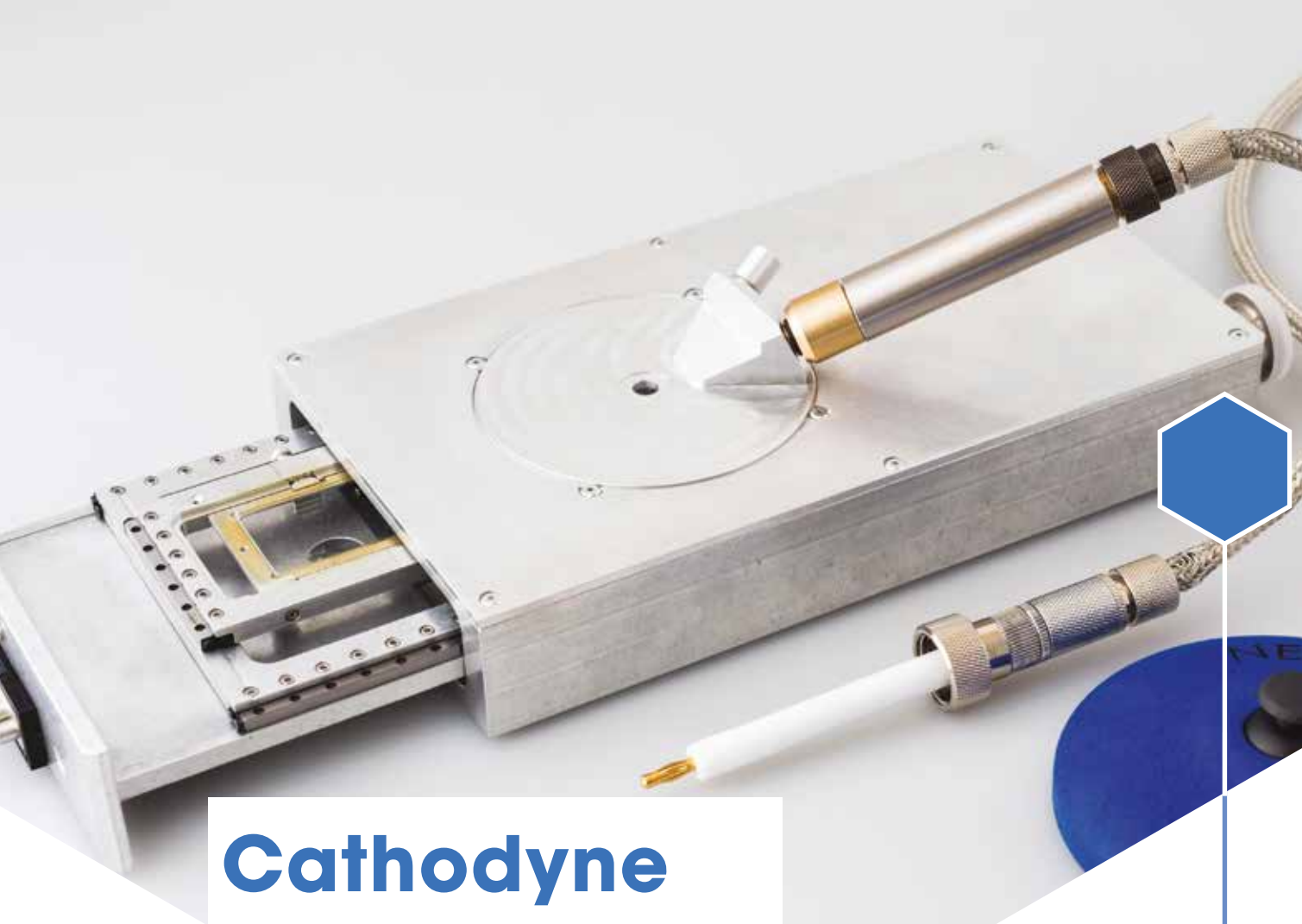
Usable ex-situ or in-situ in a SEM with its very small footprint (155*95*45mm) and weight of 1.2kg.

Can be used under high or partial vacuum and aggressive atmosphere with a load capacity of 10kN and temperature up to 1000°C.

CAPABILITIES :

- Control and regulation of force, displacement, speed, deformation, temperature and temperature gradient
- Configurable for EBSD analysis
- Measurement and monitoring of deformation without contact
- NewTec control electronics (24-bit resolution, several inputs/outputs, relays,...)
- SoftStrain control software for MT1000 (manual and/or automatic steps, SEM control, optical and SEM image capture)



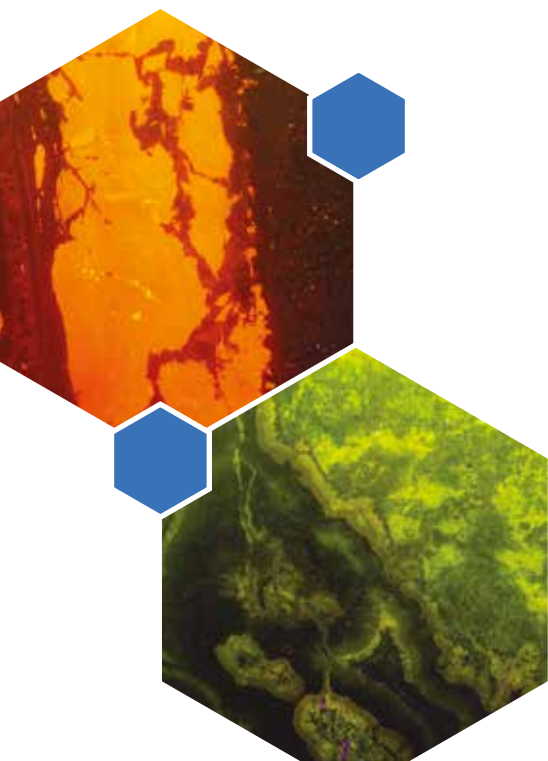


Cathodyne

Optical cathodoluminescence makes it possible to identify, at the microscopic or macroscopic scale, the point defects and impurities responsible for the luminescence properties of a material bombarded by an electron beam. The fields of application are microelectronics, semiconductor or insulating materials, geology and mineralogy...

The Cathodyne hardware

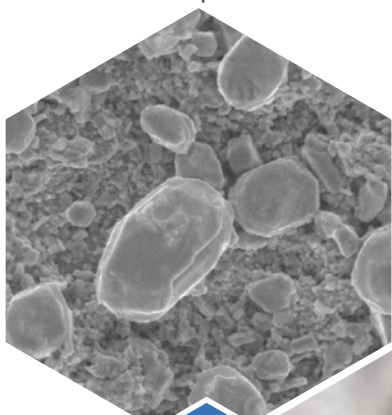
- Optical microscope equipped with a low-light camera
- A vacuum chamber with motorized sample holder and/or reflective lighting
- Double stage vacuum pump and accessories
- An electron generator with its cables
- PC-controlled control electronics - (USB port)
- Wavelength spectrometer
- Image stitching



FurnaSEM

FurnaSEM is a micro furnace ($\Phi = 40\text{mm} \times 30\text{mm}$) for temperature qualification of samples under optical microscope and/or scanning electron microscope (SEM). Adaptable to any type of traditional, low vacuum, environmental or tabletop SEM.

FurnaSEM Features



Maximum operating temperature:
1000°C continuous
1100°C intermittent



Adjustable and programmable temperature ramp from 0.01°C/s to 10°C/s



Closed-loop cooling



Can be used with any type of gas with injection system (optional)



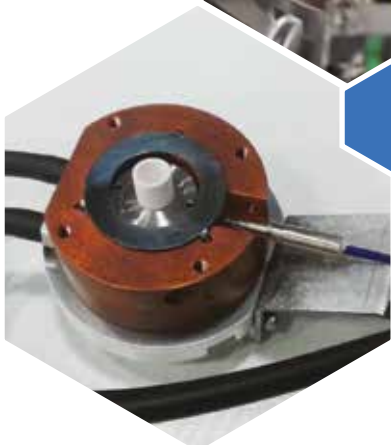
Adaptable to any type of microscope



Controllable gas injection system

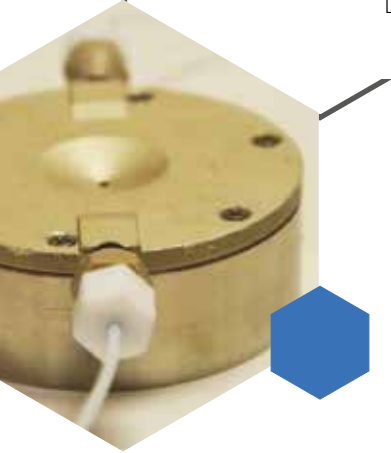


Regulation stability better than $\pm 0,1^\circ\text{C}$



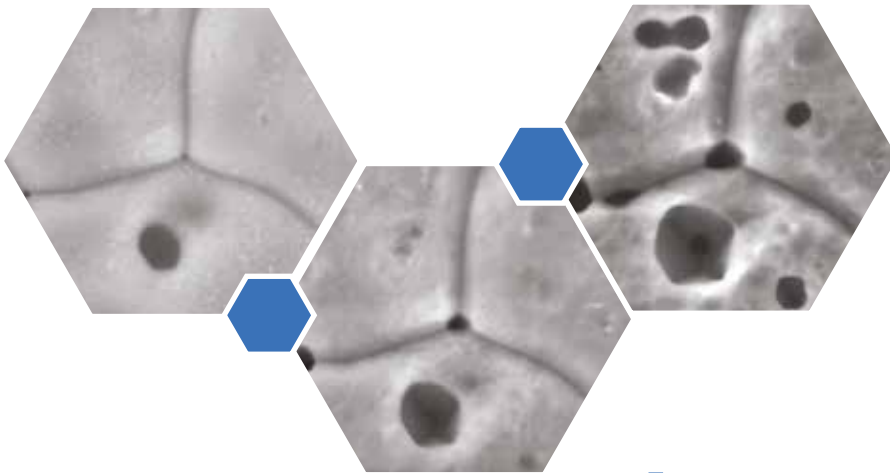
CELDI

Developed in collaboration with the Institute of Separative Chemistry in Marcoule



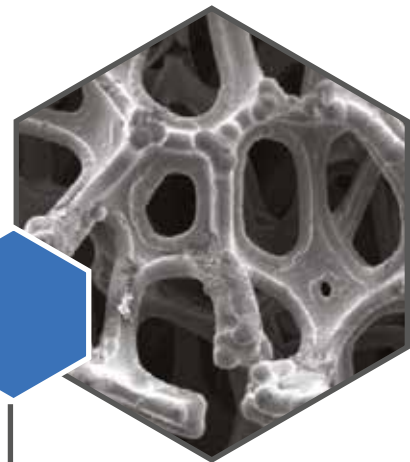
Cell for in-situ observation of the reaction of a circulating fluid with a solid :

- Dissolution
- Precipitation
- Corrosion
- Evolution of biological systems
- Evolution of catalyst microstructure
- Phase change



Axone

Control software developed by NEWTEC

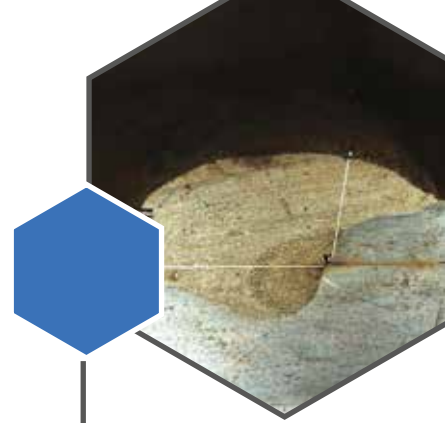


Features

- Acquisition, processing, image management using Windows
- Compatible with standard and non-standard video sources, also scanning electron microscopes (SEMs)
- Images can be retrieved from digital sources: digital camera or scanners
- Image formats used: TIFF (Tag Image File Format), as well as JPEG, BMP...
- Compatible with all Windows environments
- Axone module: image management, fast editing of weld images, batch image transformation

Iris System

The IRIS System is a hardware and software platform developed by NEWTEC to control the quality of welding beads in automobile production.



Features

- 2 versions: fixed on the desk or transportable (briefcase)
- No adjustment needed, automatic focusing for observation and measurement of parts with statistical monitoring of production
- Iris software with 4 modules: Criteria, Measurements, Stats and Ruler
- Criteria module: definition of measurement parameters, description of tools and definition of the operators' work context, threshold for each criteria (administrator mode)
- Measurements module: acquisition of images, measurements and printing of results (operator mode)
- Stats module: implemented as a set of macros available in 5 languages, output data for a part, tool monitoring, cartographies, evolution over time, tool conformity rate...

Strong points

- Ease of observation of macro cross-sections
- Production traceability
- Better quality
- Statistics on measurements, parts, tools
- Process analysis
- Management of the sampling rate





“ **NewTec Scientific with its engineers and years of experience in microscopy combines its know-how to meet the needs of research institutions and industrials.** ”

Microscopy products :

- MT 1000 Tensile Stage
- Optic and SEM Cathodyne
- Celdi in-situ observation cell
- MEB - Iris
- FurnaSEM
- Cryostem
- Ion / Electron canon power supplies
- X-ray sources

Other services:

- Specific developments around microscopy and related instrumentation
- Modernization of optical microscopes
- Software for quality control, production monitoring...
- Modification of instruments for harsh environments

CONTACT US

Tél. : +33 4 66 62 33 04

Mail : ste@newtec.fr

Website : www.newtec.fr

NewTec **Scientific**