Purchase Contract

(hereafter the "**Contract**")

1. CONTRACTUAL PARTIES

1.1 **Fyzikální ústav AV ČR, v. v. i.,**

with seat: Na Slovance 1999/2, 182 00 Praha 8, Czech Republic
represented by: RNDr. Michael Prouza, Ph.D., Director,
registered in the Register of public research institutions of the Ministry of Education, Youth and Sports of the Czech Republic.
ID No.: 68378271
Tax ID No.: CZ68378271

Bank: [redacted]
Account No. IBAN: [redacted]; SWIFT (BIC): [redacted]

(hereinafter the "**Buyer**")

and

1.2 **NewTec Scientific SAS,**

with seat: 2 route de Sommières 30820 Caveirac, France
represented by: Antoine CANDEIAS, President,
registered in RCS of Nîmes (FR).
ID No.: SIREN 539 541 441
Tax ID No.: FR539541441

Bank: [redacted]
Account No. IBAN: [redacted]; SWIFT (BIC): [redacted]

(hereinafter the "**Seller**"),

(the Buyer and the Seller are hereinafter jointly referred to as the "**Parties**" and each of them individually as a "**Party**").

2. FUNDAMENTAL PROVISIONS

2.1 The Buyer is a Partner of the Beneficiary of the project "Ferroic Multifunctionalities" under the *Operational Programme Jan Amos Komenský* within the framework of EU funds, project registration number CZ.02.01.01/00/22_008/0004591 (hereinafter referred to as the **"Project"**). The subject of performance under this Contract is also intended for the Project and partially financed from the support provided for its implementation.

2.2 The Buyer wishes to acquire the subject of performance hereof in particular to characterize microstructural changes of metals and their alloys subjected to thermomechanical loading within a wide range of temperatures, including sub-ambient temperatures.

2.3 The Seller was selected as the winner of a public procurement procedure for the public contract called **"In-situ thermomechanical loading stage for SEM"** (hereinafter the "**Procurement Procedure**").

2.4 The documentation necessary for the execution of the subject of performance hereof consists of

2.4.1 Technical specifications of the subject of performance hereof attached as **Annex No. 1** hereto**.**

2.4.2 The Seller´s bid submitted within the Procurement Procedure in its parts which describe the subject of performance in technical detail (hereinafter the "**Sellers's Bid**"); the Sellers's Bid forms **Annex No. 2** to this Contract and is an integral part hereof.

In the event of a conflict between the Contract's Annexes, the technical specification / requirement of the higher level / quality shall prevail.

2.5 The Seller declares that he has all the professional prerequisites required for the supply of the subject of performance under this Contract, is authorised to supply the subject of performance and there exist no obstacles on the part of the Seller that would prevent him from supplying the subject of this Contract to the Buyer.

2.6 The Parties declare that they shall maintain confidentiality with respect to all facts and information, which they learn in connection herewith and / or during performance hereunder, and whose disclosure could cause damages to either Party. Confidentiality provisions do not prejudice obligations arising from valid legislation.

3. SUBJECT-MATTER OF THE CONTRACT

3.1 The subject of this Contract is the obligation on the part of the Seller to deliver and transfer into the Buyer's ownership:

the **in-situ thermomechanical loading stage for SEM ThermoFisher Apreo 2 S LoVac**

(hereafter the **"Equipment"**)

and the Buyer undertakes to take delivery of the Equipment and to pay to the Seller the agreed upon price.

3.2 The following activities form an integral part of the performance to be provided by the Seller:

3.2.1 Transport of the Equipment incl. all accessories specified in Annexes 1 and 2 of the Contract to the place of delivery and handover;

3.2.2 Installation of the Equipment and all components necessary to operate the Equipment including connection to installation infrastructure at the place of delivery and handover;

3.2.3 Verification of the functionality of the Equipment, performing acceptance tests (according to manufacturer's documentation), issuing reports on the outcome of these tests at the place of performance after installation of the Equipment;

3.2.4 Training in Czech or English language at the Seller's discretion of operators at the place of performance (at least 24 hours of training of 4 operators);

3.2.5 Delivery of detailed instructions and manuals for operation and maintenance, including list of spare parts, etc. - all in Czech or English language, in electronic or hardcopy (printed) versions;

3.2.6 Free-of-charge warranty service during the warranty period including online support;

3.2.7 Provision of free technical support in the form of consultations, e.g. regarding fine tuning of the Equipment. The Seller shall provide the Buyer with this free support even after the warranty expires.

3.3 The subject of performance (Equipment) is specified in detail in Annexes No. 1 and No. 2 hereto.

3.4 The Seller shall be liable for the Equipment and related services to be in full compliance with this Contract, its Annexes and all valid and applicable legal regulation, technical and quality standards and that the Buyer will be able to use the Equipment for the defined purpose. In case of any conflict between applicable standards it is understood that the stricter standard or its part shall always apply.

3.5 The delivered Equipment and all its parts and accessories must be brand new and unused.

4. PERFORMANCE PERIOD

4.1 The Seller undertakes to manufacture and deliver the Equipment to the Buyer within **7 months** of the conclusion of the Contract.

4.2 The Seller is obliged to notify the Buyer of the date of delivery and installation of the Equipment at least 15 days in advance. This term is subject to the consent of the Buyer.

5. PURCHASE PRICE, INVOICING, PAYMENTS

5.1 The purchase price is based on the Seller's submitted bid and amounts to **2 479 000.00 CZK** (in words: Two million four hundred seventy-nine thousand Czech korunas) excluding VAT (hereinafter the **"Price"**). VAT shall be paid by the Buyer and settled in accordance with the valid Czech regulation.

5.2 The Price represents the maximum binding offer by the Seller and includes any and all performance provided by the Seller in connection with meeting the Buyer's requirements for the proper and complete delivery of the Equipment hereunder, as well as all costs that the Seller may incur in connection with the delivery, and including all other costs or expenses that may arise in connection with creation of an intellectual property and its protection.

5.3 The Seller is entitled to

5.3.1 issue the first invoice in the amount of 50 % of the Price excluding VAT after the conclusion of the Contract;

5.3.2 invoice the remaining part of the Price after the handover protocol in accordance with Section 9.4 (hereinafter the **"Handover Protocol"**) will have been signed; in the case the Equipment will be handed over with minor defects, this part of the Price shall be invoiced after removal of these minor defects.

5.4 All invoices issued by the Seller must contain all information required by the applicable laws of the Czech Republic. Invoices issued by the Seller in accordance with this Contract shall contain, in particular, the following:

5.4.1 registration number of this Contract, which the Buyer shall communicate to the Seller based on Seller's request before the issuance of the first invoice,

5.4.2 statement, that the Equipment is supplied for the purposes of the project "Ferroic Multifunctionalities" with the registration number CZ.02.01.01/00/22_008/0004591.

5.5 The Buyer prefers electronic invoicing, with the invoices being delivered to efaktury@fzu.cz.

5.6 Invoices shall be payable within thirty (30) days of the date of their delivery to the Buyer. Payment of the invoiced amount means the date of its remittance to the Seller's account.

5.7 If an invoice is not issued in conformity with the payment terms stipulated by the Contract or if it does not comply with the requirements stipulated by law, the Buyer shall be entitled to return the invoice to the Seller as incomplete, or incorrectly issued, for correction or issue of a new invoice, as appropriate, within five (5) business days of the date of its delivery to the Buyer. In such a case, the Buyer shall not be in delay with the payment of the Price or part thereof and the Seller shall issue a corrected invoice with a new and identical maturity period commencing on the date of delivery of the corrected or newly issued invoice to the Buyer.

5.8 The Buyer shall be entitled to unilaterally set off any of his payments against any receivables claimed by the Seller due to:

5.8.1 damages caused by the Seller,

5.8.2 contractual penalties.

5.9 The Seller shall not be entitled to set off any of his receivables against any part of the Buyer's receivable hereunder.

6. OWNERSHIP TITLE

The ownership right to the Equipment shall pass to the Buyer by delivery.

7. PLACE OF DELIVERY AND HANDOVER

The place of delivery and handover of the Equipment shall be room No. 034 in the main building on the premises of the Institute of Physics of the Czech Academy of Sciences at Na Slovance 1999/2, 182 00 Praha 8, Czech Republic.

8. COOPERATION OF THE PARTIES

8.1 The Seller undertakes to notify the Buyer of any obstacles on his part, which may negatively influence proper and timely delivery of the Equipment.

8.2 The Seller undertakes to provide the Buyer with cooperation in the event of inspections by authorized entities in connection with the Project.

9. DELIVERY, INSTALLATION, HANDOVER AND ACCEPTANCE

9.1 The Seller shall transport the Equipment at his own cost to the place of delivery and handover. If the shipment is intact, the Buyer shall confirm the delivery note for the Seller.

9.2 The Seller shall perform and document the installation of the Equipment and launch experimental tests in order to verify whether the Equipment is functional and meets the technical requirements of Annexes No. 1 and 2 hereof.

9.3 The handover procedure shall be completed by handover of the Equipment confirmed by the Handover Protocol.

9.4 The procedure shall be completed by handover of the Equipment confirmed by the Handover Protocol, which shall contain the following information:

9.4.1 Information about the Seller, the Buyer and any subcontractors;

9.4.2 Description of the Equipment including description of all major components and their serial / production numbers;

9.4.3 Description of executed tests according to Section 3.2.3 of the Contract and their results

9.4.4 List of technical documentation including the manuals;

9.4.5 Confirmation of the training according to Section 3.2.4 of the Contract, including a list of participants and information on its extent;

9.4.6 Eventually reservation of the Buyer regarding minor defects including the manner and deadline for their removal and

9.4.7 Date and signatures of the representatives of both Parties specified in Section 10. hereof.

9.5 Handover of the Equipment does not relieve the Seller from liability for damage caused by its defects.

9.6 The Buyer shall not be obliged to accept Equipment, which would show defects that would otherwise not form a barrier, on their own or in connection with other defects, to using the Equipment. In such a case, the Buyer shall issue a record containing the reason for his refusal to accept the Equipment.

10. REPRESENTATIVES, NOTICES

10.1 The Seller authorized the following representatives to communicate with the Buyer in all matters relating to the Equipment delivery and handover:

[redacted]

10.2 The Buyer authorized the following representatives to communicate with the Seller in all matters relating to the Equipment delivery and handover:

[redacted]

10.3 All notifications to be made between the Parties hereunder must be made out in writing and delivered to the other Party by hand (with confirmed receipt) or by registered post (to the Buyer's or Seller's address), or in some other form of registered post or electronic delivery incorporating electronic signature (qualified certificate) to epodatelna@fzu.cz in case of the Buyer and to secretariat@newtec.fr in case of the Seller.

10.4 In all technical and expert matters (discussions on the Equipment testing and demonstration, notification of the need to provide warranty or post-warranty service, technical assistance etc.) electronic communication between representatives of the Parties will be acceptable using e-mail addresses defined in Sections 10.1 and 10.2.

11. TERMINATION

11.1 This Contract may be terminated early by agreement of the Parties or withdrawal from the Contract on the grounds stipulated by law or in the Contract.

11.2 The Buyer is entitled to withdraw from the Contract without any penalty from the Seller in any of the following events:

11.2.1 The Seller is in delay with the delivery of the Equipment longer than 1 month after the date pursuant to Section 4. hereof.

11.2.2 The technical parameters or other conditions set out in the technical specifications set out in

Annexes 1 and 2 to this Contract and in the relevant applicable technical standards will not be met by the Equipment at handover.

11.2.3 Facts emerge bearing evidence that the Seller will not be able to deliver the Equipment.

11.3 The Seller is entitled to withdraw from the Contract in the event of the Buyer being in default with the payment for more than 2 months with the exception of the cases when the Buyer refused an invoice due to defect on the delivered Equipment or due to breach of the Contract by the Seller.

11.4 Withdrawal from the Contract becomes effective on the day the written notification to that effect is delivered to the other Party. The Party which had received performance from the other Party prior to such withdrawal shall duly return such performance.

12. INSURANCE

12.1 The Seller undertakes to insure the Equipment against all risks, in the amount of the Price of for the entire period commencing when transport of the Equipment starts until duly delivered to the Buyer. In case of breach of this obligation, the Seller shall be liable to the Buyer for any damages that may arise.

12.2 The Seller is liable for the damages that he has caused. The Seller is also liable for damages caused by third parties undertaken to carry out performance or its part under this Contract.

13. WARRANTY TERMS

13.1 The Seller shall provide warranty for the quality of the Equipment for a period of **12 months**.

13.2 The warranty term shall commence on the day following the date of signing of the Handover Protocol pursuant to Section 9.4 hereof. The warranty does not cover consumable parts. Consumable parts for the purposes of the Contract are the items contained in the Equipment which are consumed at regular intervals during the normal use of the Equipment, i.e. parts which have a specified typical lifetime, that does not exceed the warranty period provided the Equipment is used with normal frequency.

13.3 Should the Buyer discover a defect, he shall notify the Seller to rectify such defect using the e-mail address: secretariat@newtec.fr. The Seller is obliged to notify the Buyer without delay about any change of this e-mail address. The Seller shall be obliged to review any warranty claim within 72 hours (within business days) from its receipt and to propose solution, unless agreed otherwise by the Parties.

13.4 During the warranty period, the Seller shall be obliged to rectify any claimed defects within 30 days from the date on which the Equipment was delivered to the Seller for repair or within 30 days from receipt of the Buyer's notification if the Seller sends a technician to perform the repair on-site. In cases of unusual defects, the Seller shall be obliged to rectify the defect in the period corresponding to the nature of the defect and to define the deadline for the completion of the repair or for shipping of the rectified Equipment.

13.5 During the warranty period, any and all costs associated with defect rectification / repair including transport and travel expenses of the Seller shall be always borne by the Seller.

13.6 The repaired Equipment shall be delivered by the Seller to the Buyer along with a protocol confirming removal of the defect (hereinafter the "**Repair Protocol**"). If the Equipment is delivered duly repaired and defect-free, the Buyer will confirm the Repair Protocol.

13.7 The repaired portion of the Equipment shall be subject to a new warranty term in accordance with Section 13.1 which commences to run on the day following the date when the Repair Protocol was executed. However, the aggregate warranty period for any part of the Equipment shall not exceed 36 months.

13.8 The Seller undertakes to provide the Buyer with updates of the software controlling the Equipment for the entire term of warranty.

14. CONTRACTUAL PENALTIES

14.1 The Buyer shall have the right to a penalty in the amount of 0.1 % of the Price for each commenced day of delay with the performance pursuant to Section 4. hereof.

14.2 The Buyer shall have the right to a penalty in the amount of 0.05 % of the Price for each commenced day of delay with rectifying of defects claimed within the warranty period.

14.3 In case of default in payment of any due receivables (monetary debt) under the Contract, the defaulting Buyer or Seller (the debtor) shall be obliged to pay a contractual penalty in the amount of 0.1 % of the owed amount for each commenced day of delay with the payment.

14.4 Contractual penalties are payable within 30 days of notification demanding payment thereof.

14.5 Payment of the contractual penalty does not prejudice the rights of the Parties to claim damages.

14.6 Payment of the contractual penalty cannot be demanded if the breach of the contractual obligation causes force majeure.

15. DISPUTES

In the event that any dispute arising out of this Contract cannot be resolved by negotiations, it shall be resolved by a court in the Czech Republic; the court having jurisdiction will be the court where the seat of the Buyer is located. Disputes shall be resolved exclusively by the law of the Czech Republic.

16. FINAL PROVISIONS

16.1 This Contract represents the entire agreement between the Buyer and the Seller. The relationships between the Parties not regulated in this Contract shall be governed by the Czech Act No. 89/2012 Coll., the Civil Code, as amended (hereinafter the **"Civil Code"**).

16.2 This Contract may be changed or supplemented solely by means of numbered amendments in writing, furnished with the details of time and place and signed by duly authorized representatives of the Parties. The Parties expressly reject modifications to the Contract in any other manner.

16.3 The Parties expressly agree that the Contract will be published in accordance with Act No. 340/2015 Coll., on special conditions for the effectiveness of some contracts, publication of these contracts and Contract Register, as amended. The Parties hereby declare that all information contained in the Contract and its Annexes is not considered trade secrets under § 504 of the Civil Code and grant permission for their use and disclosure without setting any additional conditions. The Buyer shall ensure the publication of the Contract in the Contract Register.

16.4 This Contract becomes effective as of the day of its publication in the Contract Register.

16.5 The following Annexes form an integral part of the Contract:

Annex No. 1: Technical specification on the subject of performance

Annex No. 2: Technical description of the Equipment as presented in Seller's bid

16.6 The Parties, manifesting their consent with the entire contents of this Contract, attach their signature hereunder.

In Prague 12. 12. 2025	In Caveirac 10. 12. 2025
For the Buyer:	For the Seller:
_____	_____
RNDr. Michael Prouza, Ph.D. Director	Antoine CANDEIAS President

Annex No. 1 - Technical specification on the subject of performance

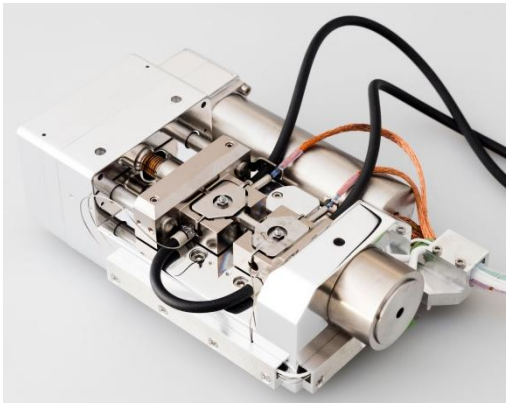
The Equipment must meet the technical conditions and include components listed in this table.

No.	Description and minimum specification of the Equipment as defined by the Buyer	Description and specification of the Equipment offered by the Seller	Complies YES/NO
1	Enables in-situ thermomechanical loading experiments in the chamber of the scanning electron microscope ThermoFisher Apreo 2 S LoVac.		**YES**
2	Includes module or modules that enable isothermal displacement and force-controlled tension-tension, compression-compression cycling with force magnitude up to 5 kN or higher and within a temperature range T_{min} – T_{max}, where T_{min} <= Room temperature and T_{max} >= 300°C.		**YES**
3	Enables controlled heating-colling cycles at constant pre-strain or force.		**YES**
4	Includes software that enables to define the thermomechanical loading limits in strain (calculated from sample elongation and sample geometry), stress, and temperature.		**YES**
5	Includes software that enables to define the thermomechanical loading rate by setting strain rate (based on sample elongation rate and sample geometry), and heating/cooling rate.		**YES**
6	Enables to use secondary and backscattered electron imaging, energy dispersive X-ray spectroscopy analysis, and electron backscatter diffraction imaging of the sample surface within its gauge section while the sample is being thermomechanically loaded.		**YES**
7	Max. weight of the stage, including all purchased accessories, 4 kg		**YES**
8	Resolution of the displacement measurement < 1 micrometer		**YES**

Data on the evaluation criterion "Technical characteristics of the bid"

Technical parameter	Value
Isothermal displacement and force-controlled tension-compression cycling with force magnitude up to 5 kN or higher enabled	**YES**
Minimum temperature T_{min} of the sample reachable by the stage during both isothermal tests and heating-cooling experiments at constant pre-strain or force	**Ambient**
Maximum temperature T_{max} reachable by the stage during both isothermal tests and heating-cooling experiments at constant pre-strain or force	**Oven 950 °C**
Difference between maximum and minimum temperatures ΔT reachable by the sample using a single configuration of the stage without a need for any hardware replacements and software changes	**600 °C**

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75



INSTITUT OF PHYSICS - FZU
To the attention of [redacted]
Na Slovance 1999/2,
18200 Praha 8
CZECH Republic

Caveirac, December 8th 2025

Dear [redacted],

Please find attached an offer for the tensile stage MT1000-900°C with different possible options.

We stay at your disposal further you require more information.

Best regards,

Antoine CANDEIAS
NewTec Scientific

[redacted]

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

CONTEXT

A University of Oviedo is interested by our testing micromachine mechanical or thermomechanical manual or automated to make SEM observations of various samples.
The objective is to use this equipment outside or inside a SEM to make microscopic observations of samples under mechanical efforts at room temperature or under specific atmospheres and at different temperature levels up to 900°C (depending on thermal conductivity of the sample) on high vacuum or VP with specific gases (O2, H2O…).

The main features for the required equipment are not known, because we do not know the microscope environment.
On the next page are written the specifications of the MT1000 tensile stage.

SERVICE

The proposed equipment is Newtec manufacture with the following elements:

1. The tensile stage is manufactured on the base developed by CNRS of Villetaneuse (Mr. Rémi Chiron). The double furnace has been developed by Newtec to get an homogeneous temperature on the sample.
2. The precision of displacement is obtained by the optical image processing on the sample or by the SEM on automated mode (option : accuracy on the curve load/extension).
3. Option : The Dell®-branded computer, will be configured by NewTec with appropriate software and adapted to the functionality required with electronic control unit necessary to the operation of the equipment supplied.

PROCEEDINGS

T0: reception of the order
T0 + 4 weeks: Validation of implantation on the existing SEM.
T0 + 20 weeks: Final tests
T0 + 22 to 24 weeks: Delivery and training

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

I - Implantation studies

The implantation studies consist to realize the overall plans of all interfaces mechanical, electrical, fluidic for append the connector board to the existing instruments while retaining the functionality in place.
We will study a robust fixing, practical and effective of the connector board enable quick loading and unloading.
The proposed solutions insure compatibility of existing functionalities and future (ex. EBSD).

The setup operations envisaged are:
1. Checking geometries on the selected equipment
2. Determining of ports for electrical and fluid tight passages
3. Study and establishment of mechanical interface for tensile stage with SEM
4. Checking the implantation and functionality of all organs of CAO

The studies will answer the requirements requested.

Main features of the tests micromachine:

- Lower weight : 1,3 kg (155 mm x 100mm x 45mm).
- Compatible with tests at 70°(EBSD) tilted.
- Tests : traction – electronic adjustment from 5N to 5kN (Optional : Compression test, flexion with accessories and/or specific jaws for 10kN).
- Continuous current engine with mechanical reduction
- Maximum speed: 40 µm/s – minimum speed: 10 nm/s
- Analog sensors: in Force (specific gauges compensated in temperature and torsion: resolution 0,01N), of position (encoder): resolution 0,001µm and LVDT : resolution 0,1 µm.
- WD (working distance SEM): minimum 10 mm depends on polar piece), 15 mm in EBSD tilted at 70°.

We will use a port or two ports available, validation in studies and depending on the selected options one for the electrical feedthrough, one for power and fluids.

II - Delivery, Test Site, Reception & Documentation

After compliance tests in factory we will realize :
1. The packaging of different sets
2. Transportation, the delivery and on-site training

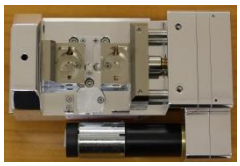
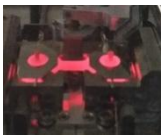
The technical documentation is written in English supplied on CD:
- ❖ A descriptive brochure of all equipment
- ❖ The technical instructions for all devices used

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Proposition DV23094B – FZU_CZ – MT1000

Basic tensile with heating

Qté	PRODUCT	MICROMACHINE MECHANICAL TESTS	P.U. HT	P.T. HT
1		Tensile stage adapted for a SEM microscope with its remote control electronics, fixing and connections (5N to 5kN)	[redacted]	[redacted]
1		Double oven (max 950°C) directly on the extremity of the sample with temperature control on the center of the sample (temperature homogeneous or gradient). Water cooling device included	[redacted]	[redacted]
1		Transportation DAP with insurances,	[redacted]	[redacted]
1		Installation and training for 3 days.	[redacted]	[redacted]
TOTAL AMOUNT HT				[redacted]
			Discount for education	[redacted]
TOTAL AMOUNT HT				**102 440 €**

In conversion with the CZK that represents : 2 479 000 ZCK

GENERAL TERMS OF SALES
Validity of the offer*: 2 months*
Beginning of the service: *After sending the acknowledgment of the order by Newtec*
Delivery time: *4 to 6 months after order receipt.*
Invoicing:

- *50% with the order,*
- *Balance after training*

NP23094

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

WARRANTY ET SERVICES

The software and hardware are guaranteed a whole year of commissioning, except consumables. After this year, we propose a maintenance contract.

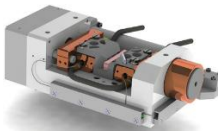
Practice modality:

In case of problems, we provide telephone support. If an item of equipment was in failure, it would be returned to Newtec Scientific. Newtec Scientific reserves the right to intervene on site.

The amount of the contract includes all fees, equipment, labor, excluding customer equipment return fees to the company Newtec Scientific.

RESPONSABILITIES:

⇨ The company Newtec Scientific will not be held responsible for any lost time, nor caused production to genes or resulting from a hardware or software malfunction.
⇨ Damage other than direct damage (especially business interruption, damage to third parties) will not in any case be invoked against the company Newtec Scientific.
⇨ **The company Newtec Scientific will not be held responsible for sample degazing or sublimation during the heating phase. Newtec propose ExoSEM, an ex-situ chamber, to test the behavior of unknown samples during heating phase.**

Qty	PRODUCT	OPTIONS OF MICRO TENSILE STAGE	P. H.T.
1		Tools for compression/flection, grip and lyra	[redacted]
1		10 kN extensions and calibration	[redacted]
1		Cooling device with nitrogen gas and a braid down to -150°C	[redacted]
1		PC for electronic control with 2 screens 24” configurated by Newtec with SoftStrain	[redacted]

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

MAINTENANCE CONTRAT

1 – EXTENDED OF CONTRACT:

The contract covers malfunctions all the hardware and software provided by the company Newtec Scientific.
It takes into account all the restoration costs, labor, parts and travel within the limit of one per year.

Preventive maintenance

It consists of an annual site visit to check the functioning of the system. This visit will be an opportunity to do the software update or install new features.

Corrective maintenance

It includes telephone support to diagnose the anomaly. In case of hardware failure, Newtec Scientific will proceed to the exchange by sending within 96 hours. If problems persist , the company Newtec Scientific intervene on site within 96 hours.

2 – EXCLUSION OF CONTRACT:

Repairs made necessary by accidental event (lightning, fire , floods , war, riots, lack of telephone lines , non-compliance with electrical standards and environmental standards abnormal fluctuations excluding EDF , malice , sabotage, etc ..) or other improper use of equipment.

Problems due to any card or software not belonging to the system in its delivered configuration.

The supply and installation of consumables, accessories, special devices (add'ons, magnetic cards, floppy disks, etc ...)

3 - RESPONSABILITIES:

The Newtec Scientific Company is liable for any lost time or discomfort to the output caused or resulting from a hardware or software malfunction.

4 – DURATION OF CONTRACT:

Our contracts are concluded for a period of 12 months following the corresponding warranty period.
The amount of the annual benefit is equal to 5% of the initial installation.
Maintenance agreement will be published and submitted two months before the end of warranty period.

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

EVOLUTIONS and OPTIONS (see elements in appendix)

The tensile stage is modular and different options such as heating can be placed afterwords (see in appendix).

Samples and jaws adapter

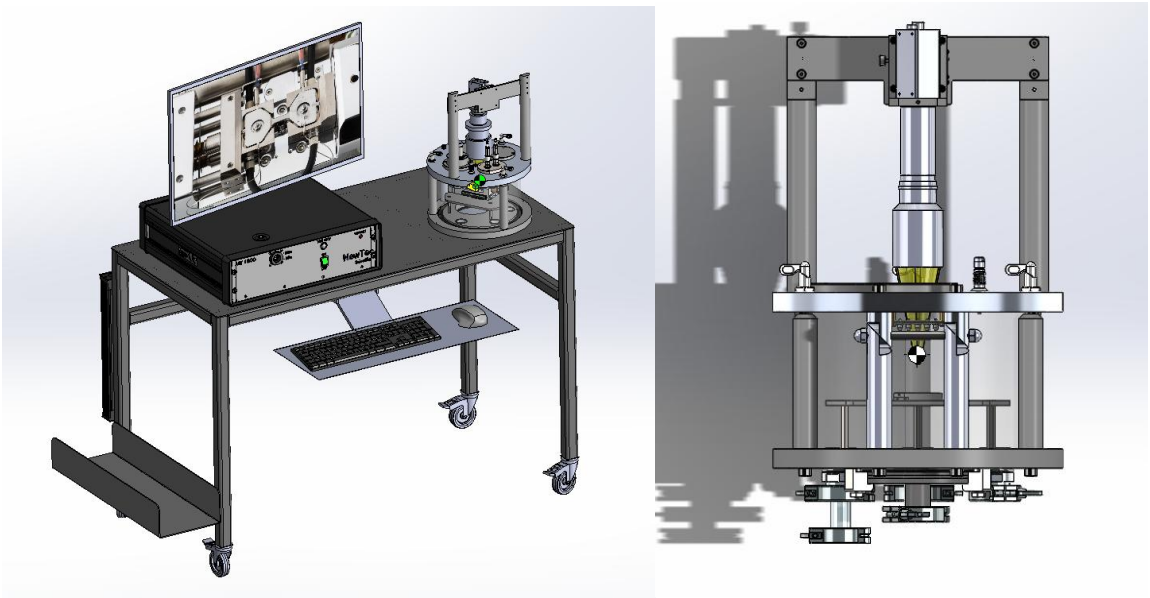
Samples may be have defined dimensions such as presented in appendix.
The jaws are related to the invention of Rémi Chiron. This innovation has two advantages: the force is uniform, no focal point no stress linked to pinch jaws.
Additional tools will be provided to realize compression and flexion.
Specific tools may be developed on request.

eRemora software

E- Remora application allows the experimenter to conduct long-span tests with a control of different elements (MEB, connector board, detectors…).
The SEM images are correlated to realize films of the sample evolution.
The control of the SEM allows the realization of many observations on various areas of the sample.
During the configuration the operator defines the areas to be observed, the software will run the test from the start to the sample broken (today we have realized a 5 days run automatically).

Ex-situ vacuum chamber (controled by valves)

The chamber is used for tensile storage and to run tests (temperature, tensile, dilatation,…) when the sample specifications are unknown, before the use inside SEM chamber. Functionality under primary vacuum or secondary vacuum or under controlled atmosphere.



Ex-situ chamber

Evolutivity : Gas injection

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Gaz injection needle with a valve controlled by the software
The support of the needle and the flange adapted to the SEM are supplied.

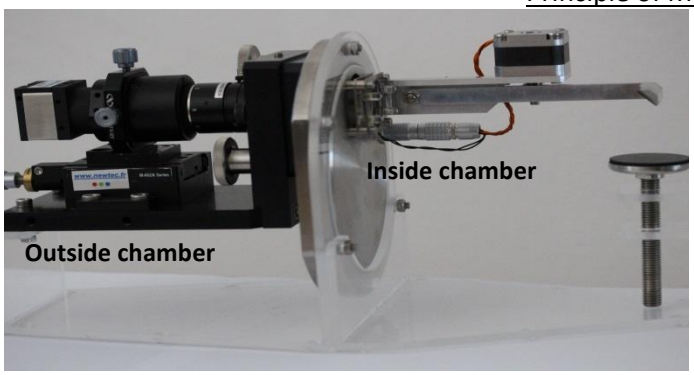
Evolutivity : ELONGATION MEASUREMENT

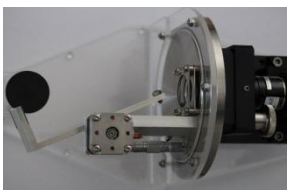
Macroscopic device in-situ (SEM-Iris)
The macroscopic device allow to following optically the evolution of the sample during the test. This correlative microscopy is a tool, for the experimenter, of comparison between the two technics (Optical: photons and electronics: electrons). A specific software control the real extension of the sample.
There are two functions:

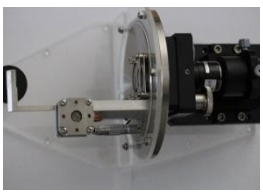
1. To follow the sample optically as standard tests (macroscope up to 2 µm resolution)
2. To measure the extensometry and the striction with the imaging treatment

Optical macroscopy during a strain or temperature test : The correlative macroscopy is a tool for the operator allowing the osbservation of a area which has been verified by a optical microscope.
Extensometry : The images treatement software allows to follow the elongation on two dimensions : following the tensile (extension or elongation) or on vertical way (striction).
As a treatment software there is many algorithms in function of the samples, temperature,...
It is possible to do some marks on the sample or a speckeld pattern and follow them.

Principle of MEB-Iris







The tensile stage may be equipped with a mirror. Outside the chamber is placed a camera with an objective (in option it is possible to use a motorized objective or a macroscope).
The mirror is controlled by a motor and placed over the sample for optical observation. The mirror is moved off for SEM observation.
The optical observation is done through a flange with a glass lead window with lightning.
The software controls an interlock to put on the lightning and off the SEM detector(s) and vice versa (done automatically).

SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

APPENDIX

Tools for compression & Flexion

Traction (max 10 KN following models) :

Single spacers at 45° distributing the force homogeneously on the sample. The spacers may be metallic or ceramic (combination of mechanical tests and thermal tests).

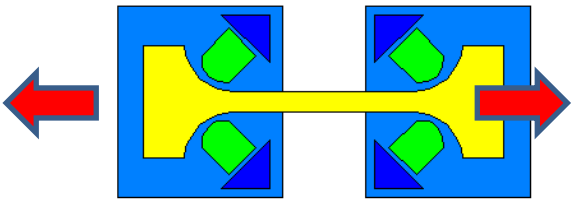


Fig.1 Traction tests

Compression (max 7 KN following models) :

The tensile do the traction and the mechanical device transforms the traction in compression.

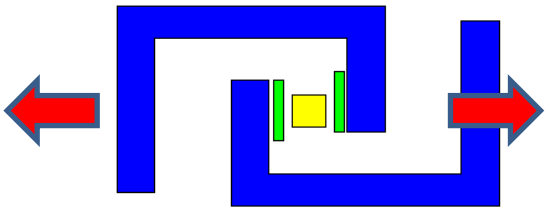


Fig.2 Compression tests

Flection (3 ou 4 points, max 5 KN following models) :

The mechanical device transforms the traction in flexion with plots. Example of 4 points flection.

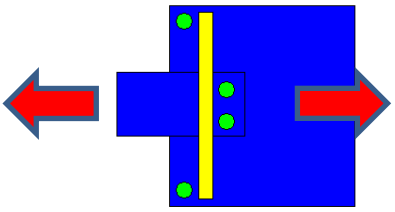
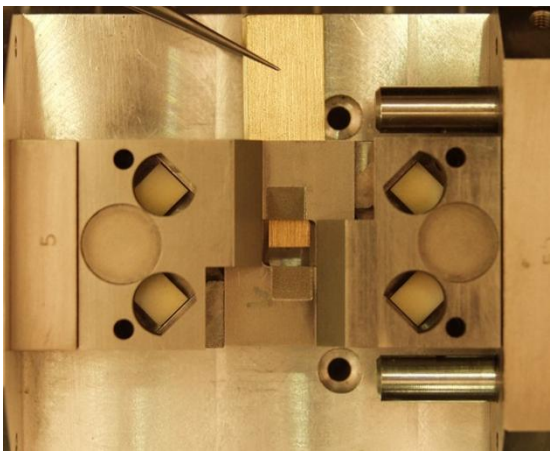
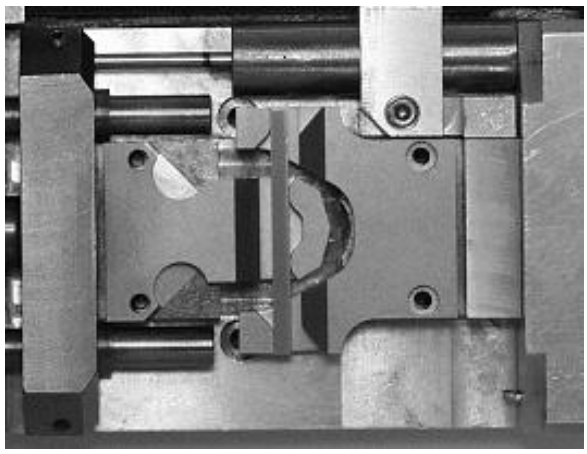


Fig.3 Flexion tests

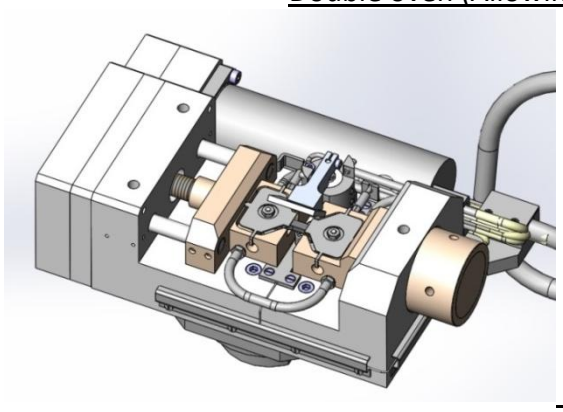


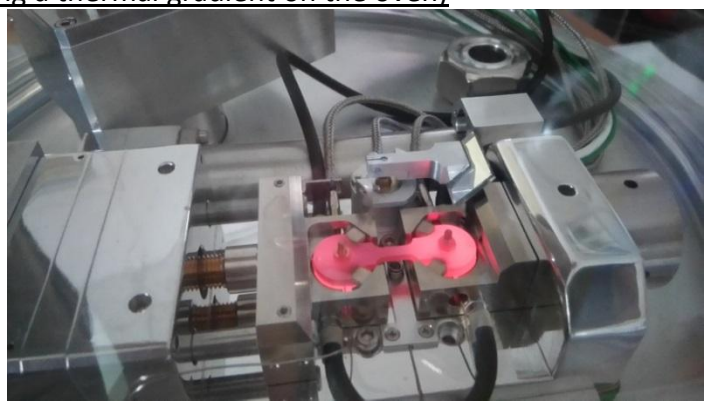


SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

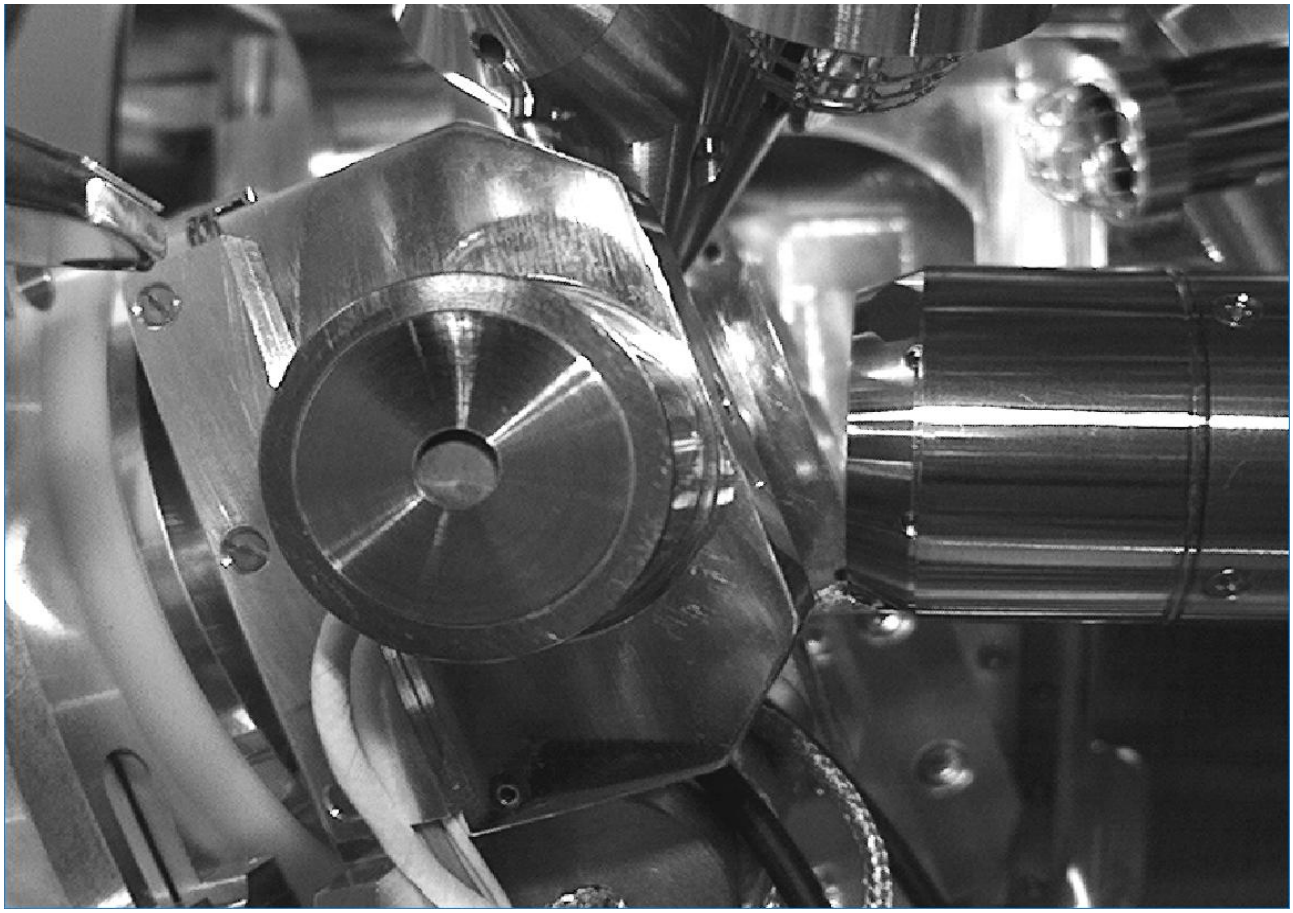
NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Double oven (Allowing a thermal gradient on the oven)





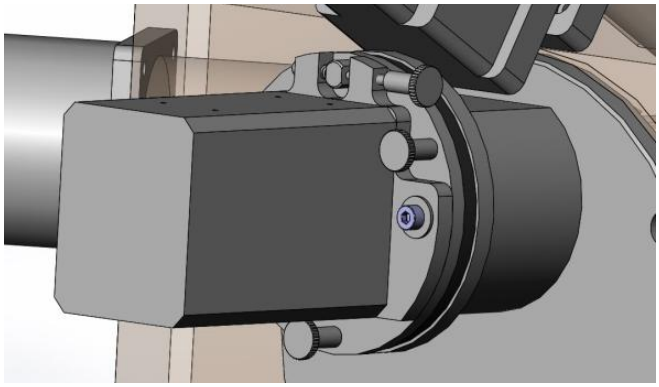
Tensile stage inside a SEM Tescan – EBSD position



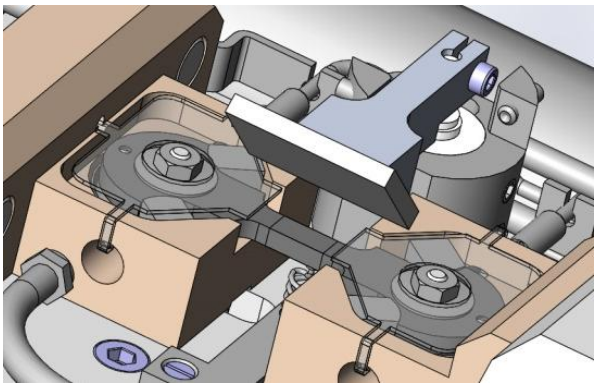
SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

MEB-Iris (Optical view of the sample)



Camera + auto



Controlled Mirror

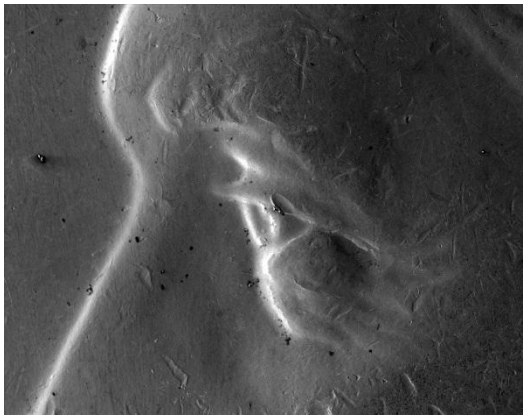
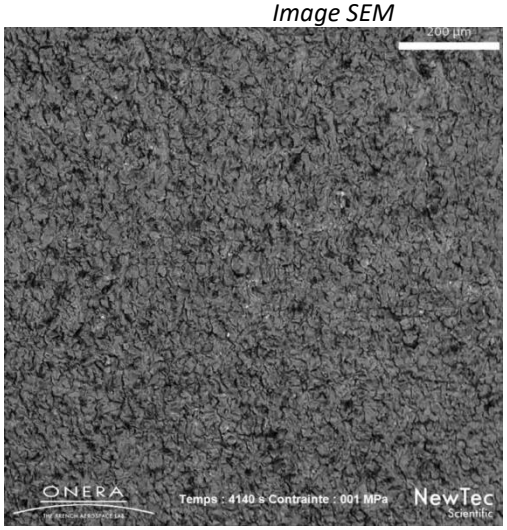
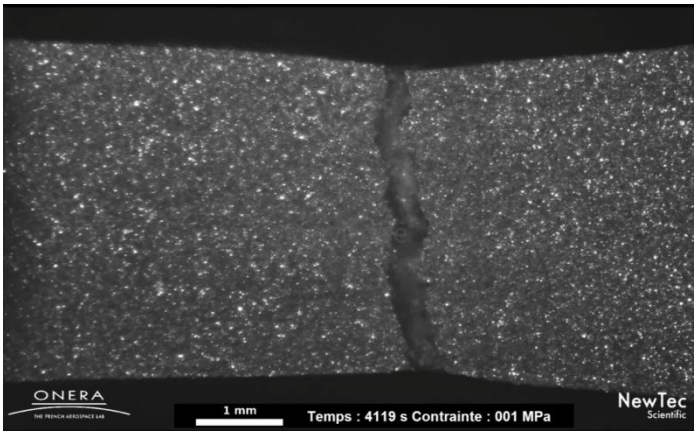


Image SEM

Image Optic





SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

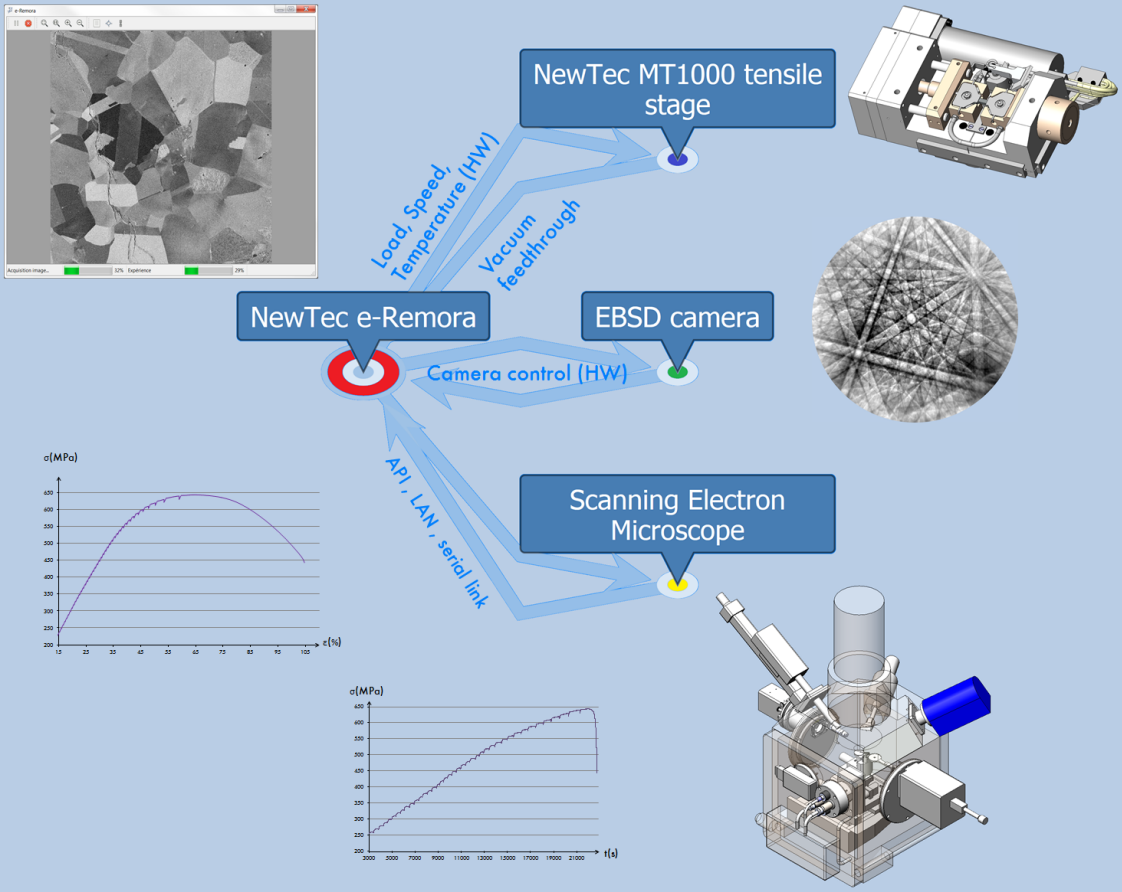
NewTec e-Remora for SEM Automated Mechanical Tests

Entire platform driven in an automated way without presence of operator.

Fatigue tests cycles on material sample where process can exceed several hours

Results available at any time (on/off line).

Relocation of the AOI by digital image correlation on 16 bits grey levels depth.

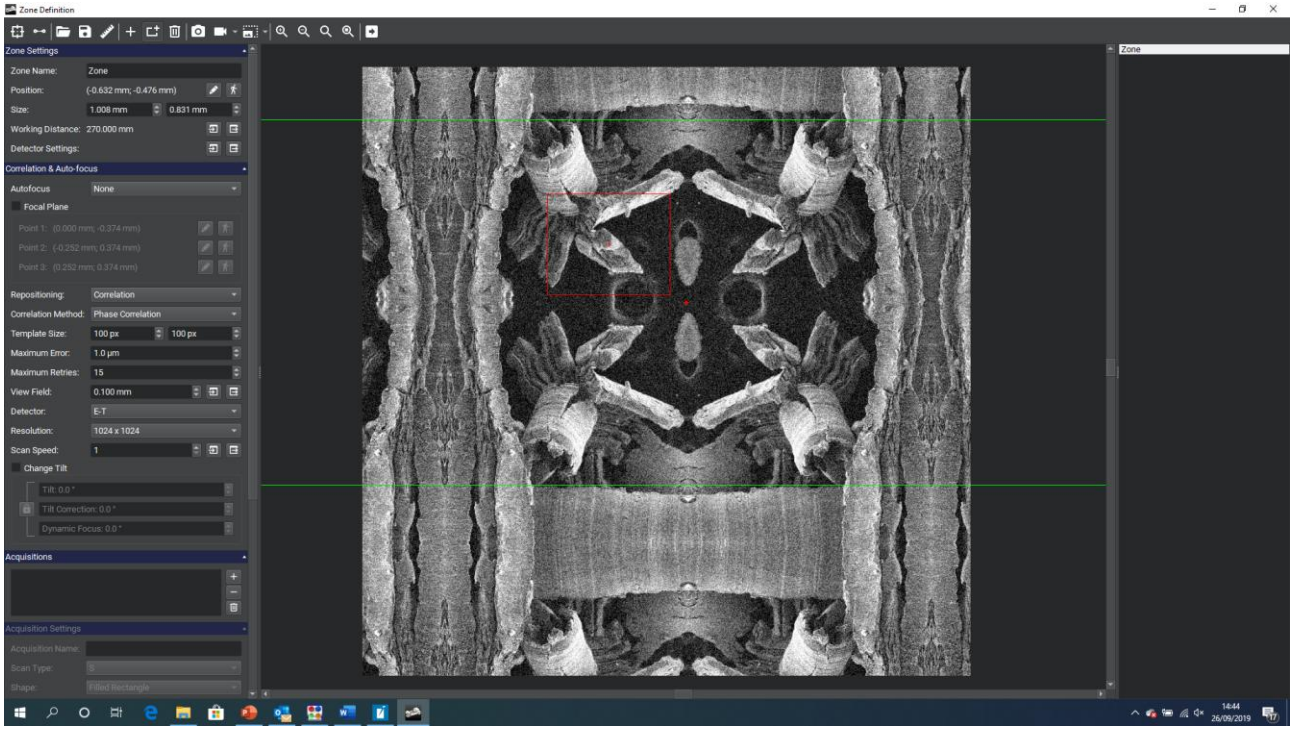


BAT A2 285 rue Gilles ROBERVAL – 30 900 NÎMES – Phone 33 (0)4 66 62 33 04 - contact : ste@newtec.fr - internet : http://www.newtec.fr

NewTec Scientific

NP23094

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75



It is possible one or several areas of interest and to define the resolution and the number of the images on each area with or without overlap.
The test will run automaclly following the requirements of the opeation with or without images correlation.
It is possible to define the detector for the image correlation and one detector or several detectors for image accquisition.
By the end the images are sotred by area or zone and detector type. A film may be generate at the end of acquisition.

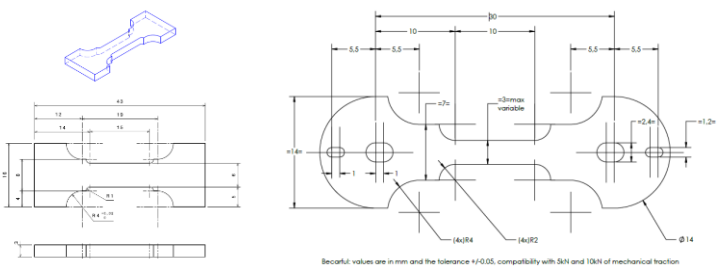
SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Proposition DV23094B – FZU_CZ – MT1000

Electronic power supply and MT1000

Ex-situ chamber



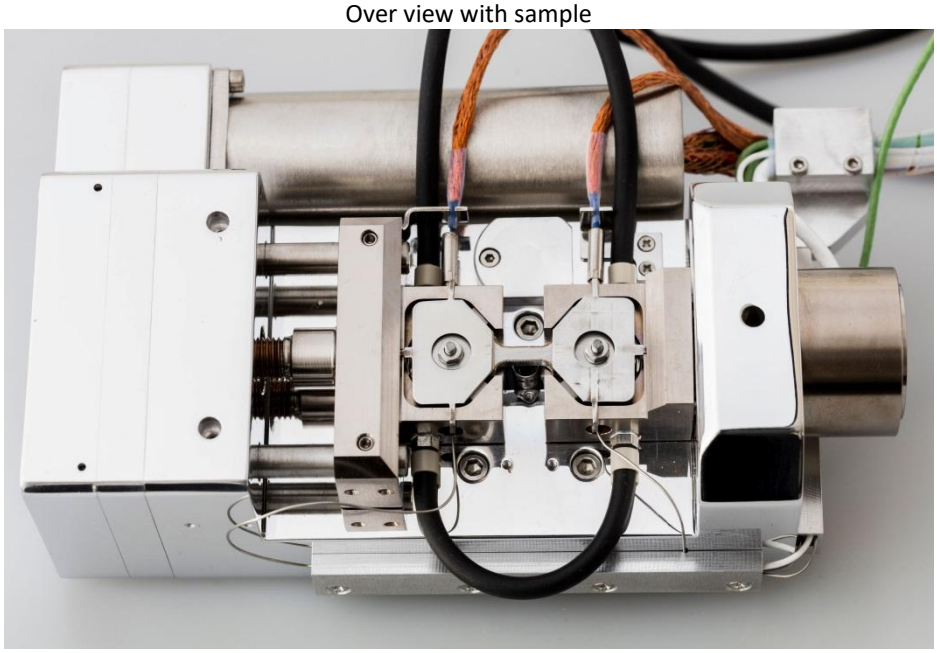
Example of sample

NP23094

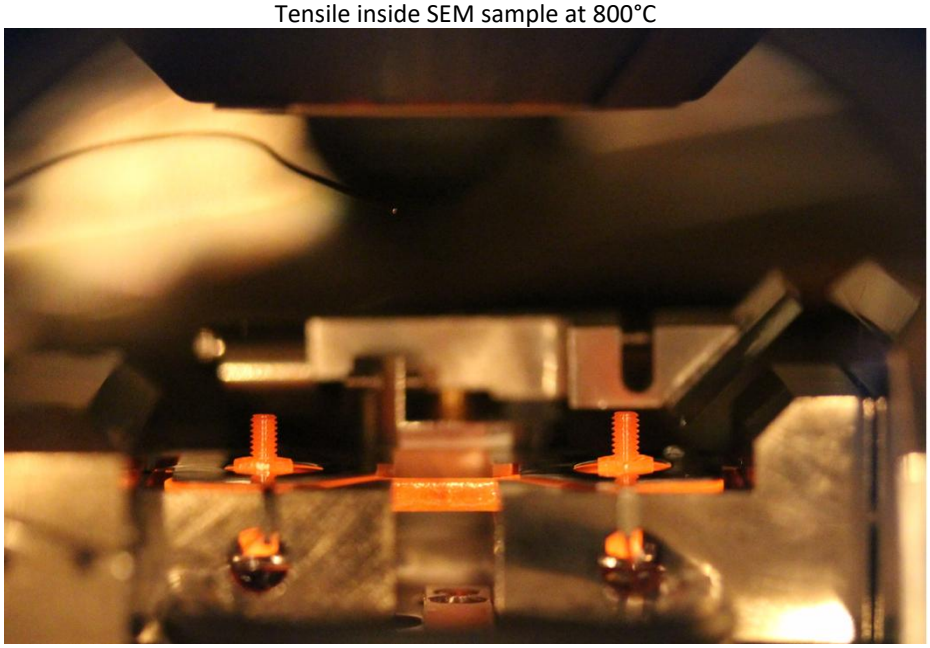
NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Images of uni-direction tensile stage with 2 symetric ovens

Over view with sample



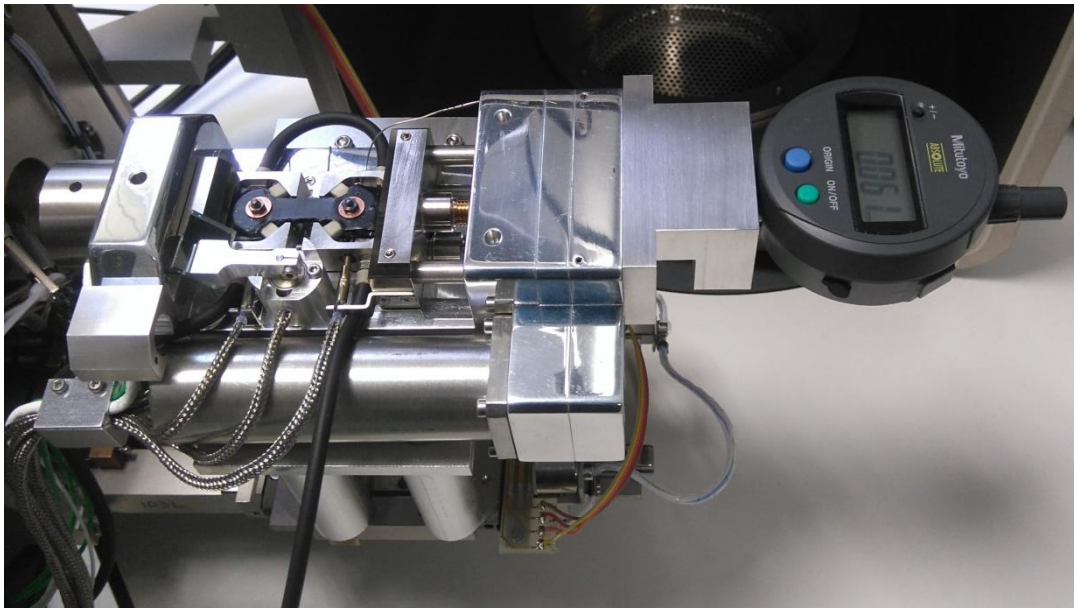
Tensile inside SEM sample at 800°C



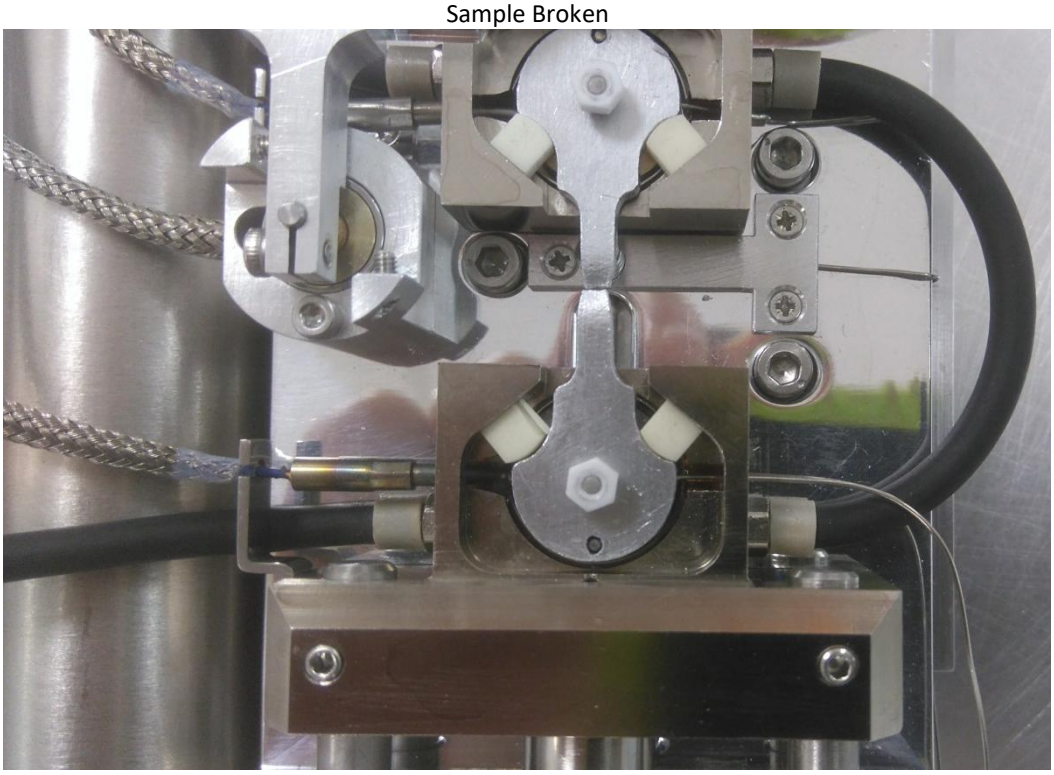
SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Calibration



Sample Broken

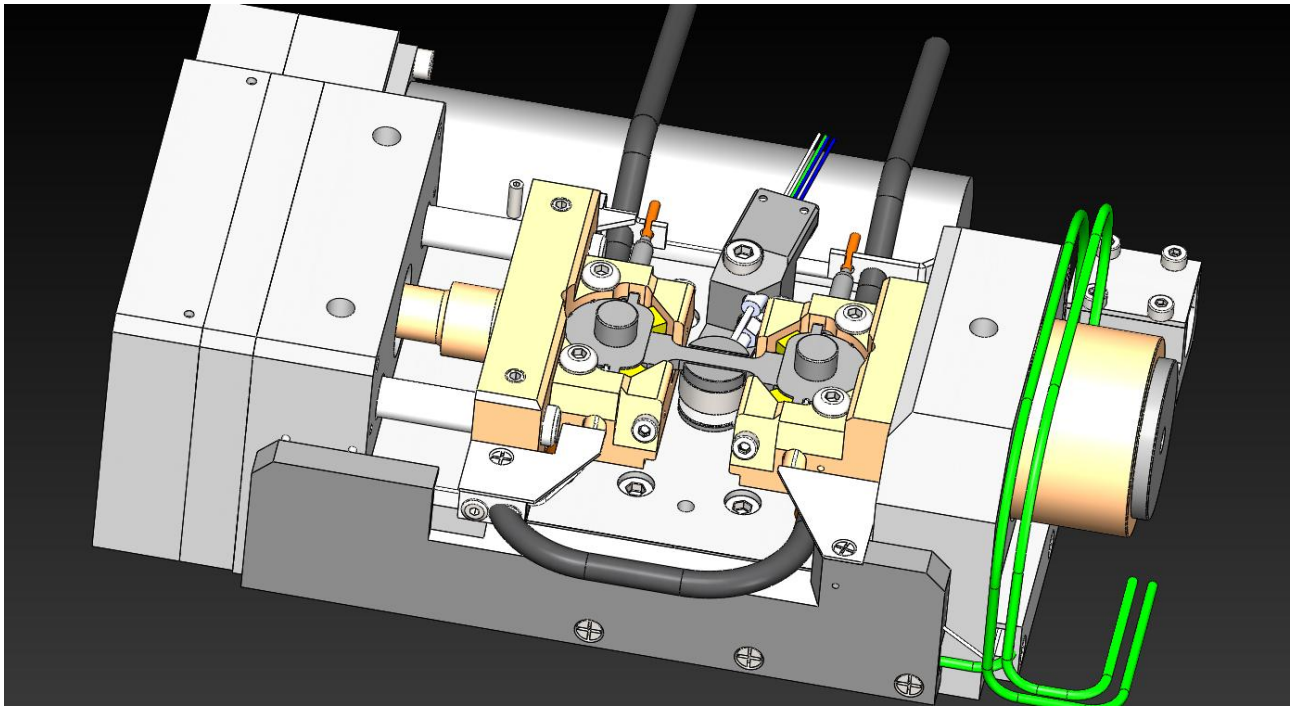


SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

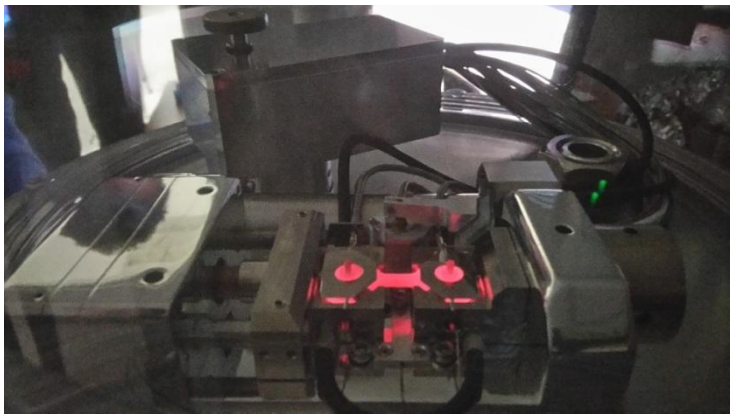
Central Oven

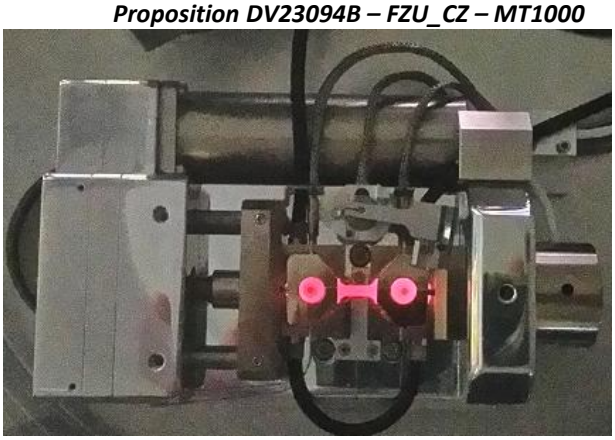
Newtec Scientific has manufactured a central oven to compensate the thermal losses on the observation area.
The central oven allows to :
1 – reach 1000°C on the center of the sample
2 – do creeping only on the sample center



SARL au capital de 379 250 € - N° intracommunautaire : FR 79 539541441 - APE 7490B
RCS de Nîmes 539 541 441 - Siret 539 541 441 00033
Email: ste@newtec.fr - Notre site : http://www.newtec.fr

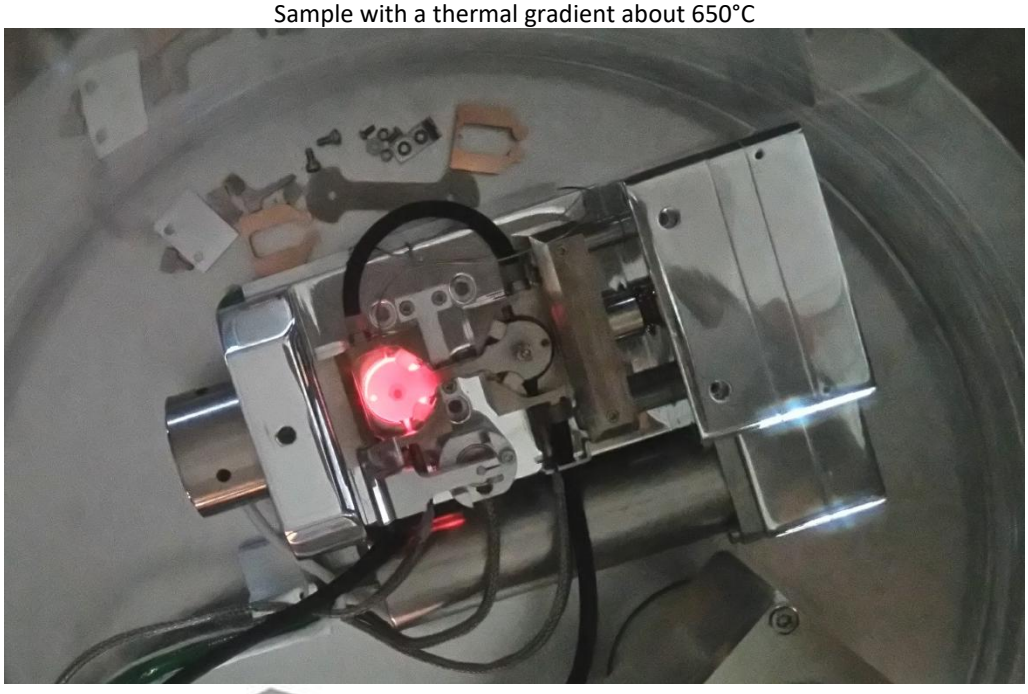
NewTec
Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

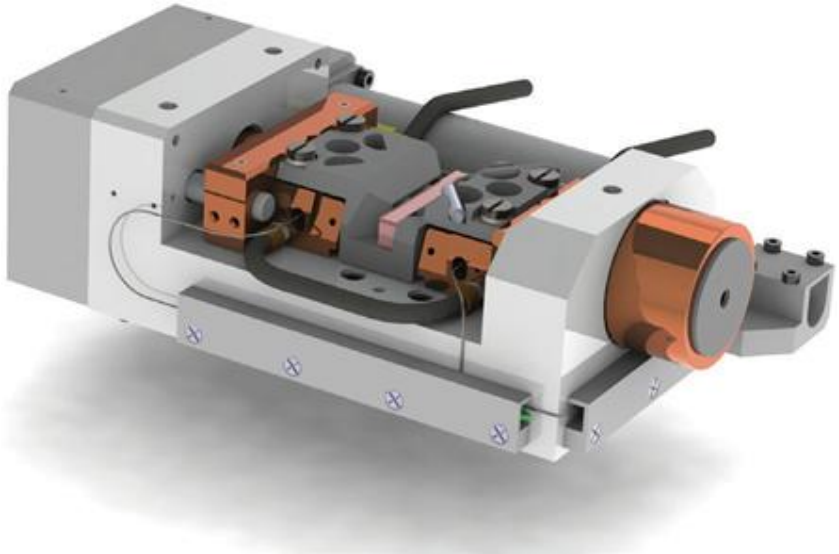




Sample at 750°C

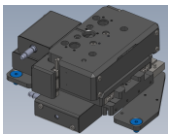
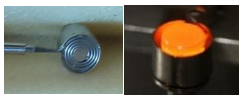
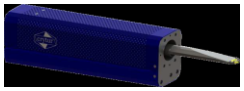
Sample with a thermal gradient about 650°C





NP23094

NewTec Scientific
2, route de Sommières
30820 CAVEIRAC
Tél : +33 (0)4 66 62 33 04
Fax : +33 (0)4 48 06 04 75

Qty	PRODUCT	EVOLUTIONS OF MICRO TENSILE STAGE	P. HT
1	e-Remora	Automatization of test and image correlation (SEM control)	
1		Device for gas injection (O2, H2O,…) at sample level. Mechanical position adjustable.	
1		Controlled humidity generator for injection	
1		ExoSEM : Ex-situ chamber with valves with the turbo pumping device and software control	
1		Stage X, Y Z for ExoSEM controlled by SoftStrain for automated tests	
1		Camera with optical objective and pyrometer for ExoSEM	
1		Extension measure with fixed focal and fixed miror inside the SEM	
1		Central oven to reach 1000°C in the sample center and to perform creeping tests	
1		BSE High temperature cooled by gas phase change avoiding vibrations.	

NP23094