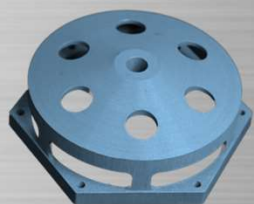


**MADE IN FRANCE**



**Servicing you since 1984**



**Who we are:**

**Our History:**

**Site overview:**

**Location:**

**Some figures:**

**Our fields of application:**



A: Administrative Building

B: Chemical cutting and surface treatment building

C: Quality control, Photography, and Stock building

D: Precision machining, Glass & Metal Sealing, and Brazing building

F: Degreasing, stripping, and passivation building





**Who we are:**

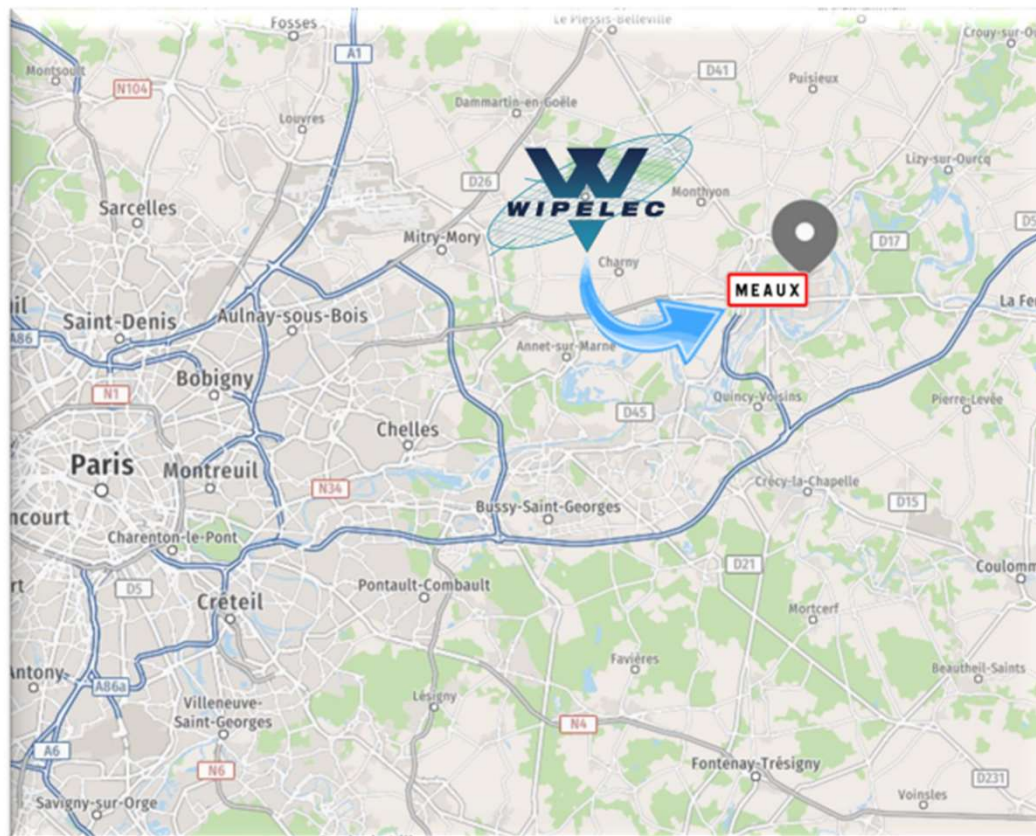
**Our History:**

**Site overview:**

**Location:**

**Some figures:**

**Our fields of application:**



**WIPELEC**  
1 Rue De la Bauve  
77100 **MEAUX**

DMS (degrés, minutes, secondes)\*

Latitude ☒ N ☐ S 48 ° 57 ' 48.92 "

Longitude ☒ E ☐ O 2 ° 54 ' 39.398 "



## Who we are:

**Our History:**  
**Site overview:**  
**Location:**  
**Some figures:**  
**Our fields of application:**



Compliance: 98%



Turnover: 20%



Punctuality: 95%

Quote Response:  
48h

Return of  
Products: 48h



Active Clients: 300  
Top 5 Clients: 30%  
of Turnover



**Who we are:**

**Our History:**  
**Site overview:**  
**Location:**

**Some figures:**  
**Our fields of application:**

## TURNOVER

**20-21**

**1,4 M€**

**21-22**

**2,1 M€**

**22-23**

**2,5 M€**

**CHEMICAL ETCHING**

**35 %**

**SURFACE TREATMENT**

**25 %**

**SEALING & BRAZING**

**15 %**

**DEGREASING PICKLING  
PASSIVATION**

**12 %**

**MECANIC BENDING**

**10 %**

**OTHER**

**3 %**

**ELECTRONICAL**  
**30 %**

**AERO & SPACIAL**  
**30 %**

**DEFENSE**  
**25 %**

**MEDICAL**  
**5 %**

**AUTOMOTIVE**  
**5 %**

**LUXURY**  
**5 %**



## Who we are:

**Our History:**

**Site overview:**

**Location:**

**Some figures:**

**Our fields of application:**

1984

Establishment of WIPELEC

1999

Acquisition  
LA DÉCOUPE PHOTOMÉCANIQUE:  
Chemical etching

2003

Acquisition  
CERES TECHNOLOGIE:  
Chemical etching, surface treatments



2004

Acquisition  
HYPERMECA:  
Precision mechanics

2012

New Factory in Meaux (77)  
4500 m2 within 17000 m2

2021

New Activity  
Glass & metal sealing

2022

New Activity  
Ceramic & metal brazing





**Who we are:**

**Our History:  
Site overview:  
Location:  
Some figures:**

**Our fields of application:**



Spatial



Medical



Research



Defense



Automotive



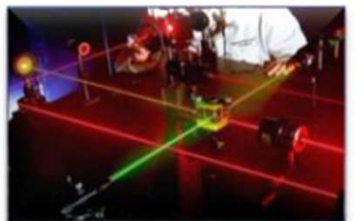
Telecommunication



Aerospace



Luxury



Optics- Optronics



---

**MADE IN FRANCE**

**Our activities**





**An enterprise  
specialized in:**

**Chemical etching**

**Electrochemical etching**

**Surface treatment**

**Degreasing, pickling, passivation**

**Precision machining**

**Bendind, Assembly**

**Wire electrical discharge machining**

**Layout tracing and control**

**Glass and metal sealing**

**Ceramic and metal brazing**

# CHEMICAL ETCHING PROCESS



Photographic tooling



Raw material inventory



Customized cutting



Cleaning – Brushing



Rolling



Insolation



Development



Chemical etching



Stripping



## CHEMICAL ETCHING AND ELECTROCHEMICAL ETCHING

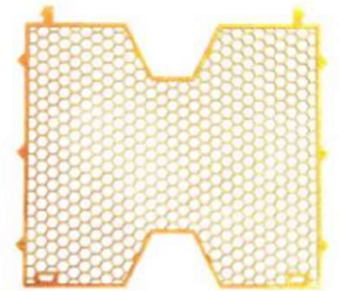
Chemical etching is a method that allows the machining of a piece by **chemically dissolving** a metal plate, previously and locally protected by a **resist**. The basic process for electrochemical etching is similar, except for the use of a continuous electric current. It is used for metals resistant to purely chemical attack. The metal plate is coated with a **photosensitive resin**, the thinness of which (a few micrometers) allows for great precision in defining the image, obtained through **exposure** using **photographic tools** representing the piece to be manufactured. After **development**, the polymerized resin enables localized masking of the areas to be protected. Bare metal areas will be **chemically attacked** by spraying with an **etching agent** adapted to the metal to be dissolved. Etching on both sides **asymmetrically** enables the creation of formed shoulders or countersinks.

### SEVERAL EXAMPLES OF ACHIEVEMENTS





## **CHEMICAL ETCHING AND ELECTROCHEMICAL ETCHING**



**SEVERAL EXAMPLES OF ACHIEVEMENTS**

**CHEMICAL ETCHING AND  
ELECTROCHEMICAL ETCHING**

**Our lids**

**SEVERAL EXAMPLES OF ACHIEVEMENTS**



# CHEMICAL ETCHING ADVANTAGES



Cutting without burrs, deformation, or stress of highly precise parts up to 2 millimeters in thickness



Production of complex-shaped parts within short time frames



Techniques applying to almost all metals and having no influence on material characteristics



Low tooling cost enabling the production of prototypes at a competitive cost



# CHEMICAL ETCHING **vs** OTHER PROCESS

		Chemical etching	Electroforming	Electroerosion	Laser	Water jet	Mechanical
WIPELEC							
QUANTITY	Prototype small series	😊	😊	😊	😊	😊	😞
	Medium series	😊	😊	😐	😐	😐	😞
	Large series	😐	😐	😞	😞	😞	😊
APPEARANCE	Burrs, chips	😊	😊	😊	😞	😞	😞
	Cracks	😊	😊	😐	😊	😐	😞
	Heat-affected zone	😊	😊	😞	😞	😊	😊
MATERIAL	Thin	😊	😊	😞	😞	😞	😊
	thickness 2mn	😐	😞	😊	😊	😊	😊
	hardness RM	😊	😞	😐	😊	😐	😐
OTHERS	Precision	😐	😊	😐	😊	😊	😐
	Material width	😊	😊	😞	😞	😐	😞
	Profile and dimension modifications	😊	😊	😊	😊	😊	😞

		Chemical etching	Electroforming	Electroerosion	Laser	Water jet	Mechanical
WIPELEC							
QUANTITY	Prototype small series	😊	😊	😊	😊	😊	😞
	Medium series	😊	😊	😐	😐	😐	😞
	Large series	😐	😐	😞	😞	😞	😊
APPEARANCE	Burrs, chips	😊	😊	😊	😞	😞	😞
	Cracks	😊	😊	😐	😊	😐	😞
	Heat-affected zone	😊	😊	😞	😞	😊	😊
MATERIAL	Thin	😊	😊	😞	😞	😞	😊
	thickness 2mn	😐	😞	😊	😊	😊	😊
	hardness RM	😊	😞	😐	😊	😐	😐
OTHERS	Precision	😐	😊	😐	😊	😊	😐
	Material width	😊	😊	😞	😞	😐	😞
	Profile and dimension modifications	😊	😊	😊	😊	😊	😞

# ELECTROFORMING

This technique involves depositing a metal layer (**nickel, copper, gold**, etc.) onto a support, where the desired piece has been previously reproduced **photographically** or in 3D on a machined chuck.

Once the desired thickness is achieved, the piece is separated from its support.

Through this process, WIPELEC creates very thin parts or parts with extremely fine openings ( $5\ \mu$ ).

## ADVANTAGES

Ability to create openings finer than the material's thickness

- Homogeneous metal structure
- Regular hardness
- Controllable thickness from 4 to 200  $\mu$
- No initiation of rupture
- No sharp edges



**Some examples  
of achievements**



# Machining

Wipelec specializes in precision part manufacturing, prototypes, and small to medium production series using machining centers and CNC lathes.



**Machining centers**



**CNC lathe**



**Wire EDM**



**Digital cutting table**





# Bending, assembly, brazing

Thanks to the various mastered techniques, Wipelec can provide a comprehensive product, combining:

Machining  
Bending  
Assembly  
Brazing  
Inspection

In order to deliver a high-quality product to you.



# Glass & Metal Sealing

Wipelec offers a range of innovative solutions applicable in microelectronics, high-frequency technology, high pressures, power electronics, signal measurement, and ultrahigh vacuum.

Materials examples: Titanium, Dilver P1, Stainless Steel, Steel, Incotel, Copper, Iron-Nickel Alloys, Molybdenum.

Wipelec is equipped with:



Bell furnaces under Gas (1100°C)  
Tunnel furnace (1000°C)  
Oven



# Ceramic & Metal Brazing

In addition to Glass & Metal products, Wipelec also develops Ceramic & Metal products. Our expertise in assembling different ceramics allows us to offer various technical solutions to our clients.

Wipelec is equipped with:



















Bell furnaces under Gas (1600°C)  
Tunnel furnace (1300°C)  
Oven





# Glass & Metal VS Ceramic & Metal

	GLASS & METAL	CERAMIC & METAL
Pricing		
Lead Time		
Variety of Metallic Materials		
Dimensional Tolerance		
Pressure Resistance		
Temperature Resistance		
Electrical Performance		
Hermeticity		

## CERAMIC & METAL BRAZING



**Brazing** : The brazing used will depend on various parameters such as operating temperature, the nature of the metal to be joined, the need to braze several metals of different types. Common braze alloys like Ag/Cu, Ag/Cu/pd, Au/Ni, Au/Cu, Ag, Au, Cu, cover a range **from 780°C to 1080°C.**

The ceramic-to-metal bond requires an intermediate metal layer on the ceramic for adhesion and wettability of the brazing material. This metallization is achieved through various methods:

- Sintered thick layer of Mo/mn at high temperature
- Thick layer of a reactive metal
- Thin layer deposited by PVD process

## GLASS AND METAL SEALING



**Matching sealing**: When thermal expansion coefficients are similar, the creation of an oxide layer between them ensures proper mechanical strength, hermeticity, and electrical insulation.

**Compression Sealing** : The sealing effectiveness is guaranteed by compressing the metal body onto the glass, ensuring superior hermeticity and mechanical strength compared to matched sealing.

**Titanium Sealing**: This process can be seen as a mix of the two aforementioned processes.

# Surface treatment

Our surface treatment workshop is specialized in  
Technical deposits, Deposits on refractory metals (Mo,  
W), Localized deposits, Barrel deposits, Attachment  
deposits

Chemical Copper

Electrolytic Copper

Nickel

Electrolytic Nickel

Alodine 1200

Surtec

Silver plating

Plastic  
metallization

Matte or bright Tin

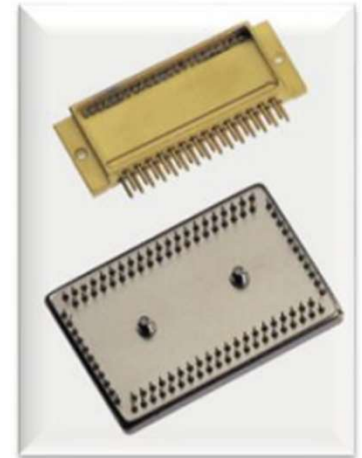
60/40 Tin Lead

Pure Gold

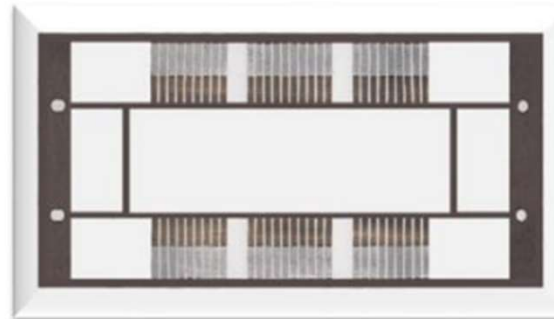
Gold Nickel



Parts in bulk



Pieces attached



Pieces attached



# Degreasing Pickling Passivation

Our workshop enables cleaning for applications in chemical engineering, nuclear, and vacuum technology. Our team can also intervene at your site.



Oxygen quality degreasing



Degreasing, neutralization on plastic materials



Degreasing, pickling, passivation on stainless steels



Degreasing, pickling, passivation on copper alloys



Degreasing, pickling on aluminum







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**MADE IN FRANCE**

**Control**

**Quality**

**Environment**

# Quality

**Wipelec has implemented control measures at each stage of production to ensure the quality and traceability of its products, relying on a specific ERP system.**



## ENGAGEMENT FROM MANAGEMENT QUALITY AND ENVIRONMENTAL POLICY

Satisfying customers, building their trust, and mitigating our environmental impacts are at the core of our missions because our sustainability and growth depend on their long-term satisfaction.

Our quality policy is based on a process approach, risk assessment, and opportunities for our company and complies with the EN 9100, ISO 9001, and ISO 14001 standards.

I, the undersigned Guy PELAMOURGUE, CEO of Wipelec, declare the responsibility for the effectiveness of our Quality and Environmental Management System, thus committing to meet all applicable requirements, respecting the requirements of various stakeholders chosen by the Management, and requesting the involvement of everyone in a continuous improvement process.

This policy focuses on:



### STRATEGIC FOCUS

- Enhancing the company's reputation
- Maintaining existing markets and acquiring new customers
- Ensuring the economic attractiveness of our offers



### CUSTOMER SATISFACTION

- Adhering to customer requirements
- Maintaining product quality
- Meeting delivery deadlines
- Communicating with our clients
- Maintaining good responsiveness



### FINANCIAL FOCUS

- Improving productivity by optimizing industrial performance
- Sustaining activities



### HUMAN RESOURCE FOCUS

- Maintaining workplace safety
- Developing participative management
- Communicating with all employees
- Training our workforce



### ENVIRONMENTAL FOCUS

- Compliance with environmental regulations
- Enhancing our practices (waste management, deliveries, purchases...) to limit our environmental impact
- Encouraging our suppliers to adopt environmental initiatives

I appoint the Quality Manager as the management representative to develop, implement, maintain, improve, and verify the quality system processes, raise awareness among personnel regarding customer requirements, foster a quality culture, oversee the quality system, and report on its functioning.

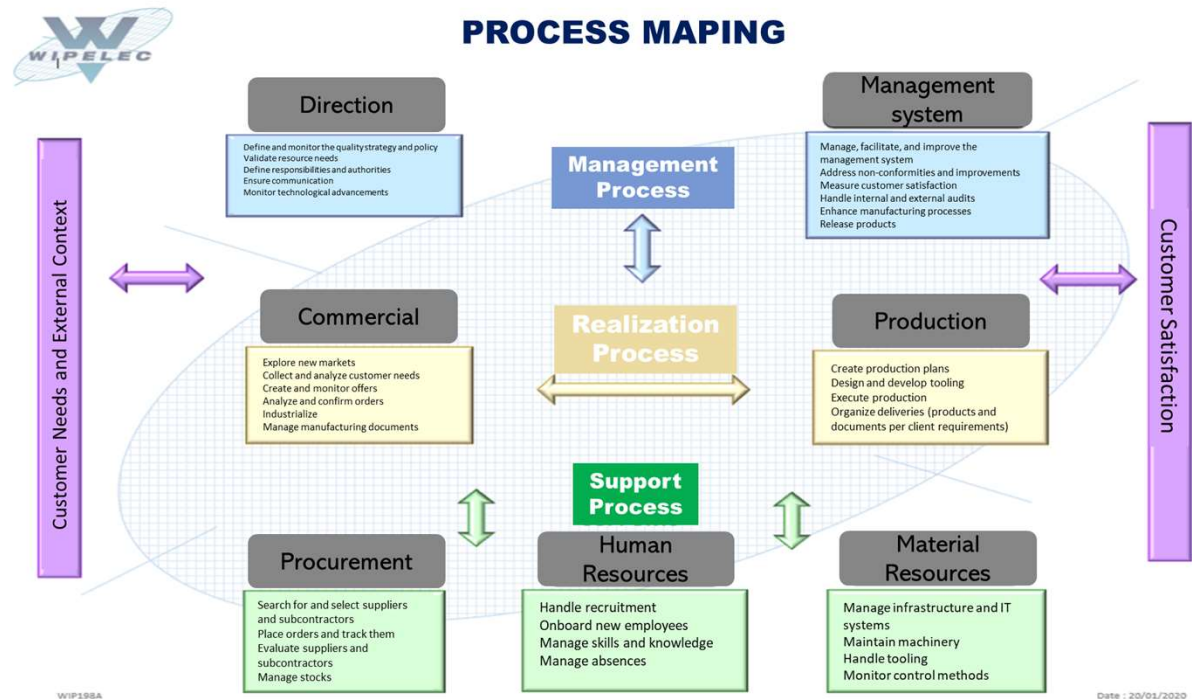
Guy PELAMOURGUE  
Gérant

A blue ink signature of Guy PELAMOURGUE.

September 1, 2023

# Quality

**Quality is at the heart of our concerns, ensuring customer satisfaction while continuously striving to improve our performance.**





Certificate FR22/81844034

The certification has been performed in accordance with the requirements of EN 9104-001:2013

**WIPELEC**

1 rue de la Bauve  
77100 MEAUX  
France

Has been assessed and registered as meeting the requirements of

**NF EN 9100:2018**

For the following activities

Carrying out activities of:  
Chemical etching

Plating electrolytic and electroless

Precision machining and electrical discharge machining

Glass & Ceramic to metal sealing

For the aeronautics, space and defense sectors.

Réalisation d'activités de :

Découpe chimique

Traitements de surface

Usinage et électroérosion de précision

Assemblage verre et céramique métal

Pour les secteurs de l'Aéronautique, du spatial et de la défense.

Certificate Issue Date: 3 January 2022

Issue 1. Certificate Reissue Date: 3 January 2022

Certificate Expiry Date: 2 January 2025

This certificate remains valid subject to satisfactory surveillance audits.

First certification Date: 3 January 2022

Authorized by



SGS ICS

29, avenue Aristide Briand 94111 Arcueil Cedex France  
t +33 (0)1 41 24 87 75 f +33 (0)1 73 01 71 29 [www.sgs.com](http://www.sgs.com)  
Accredited under the ICOP Scheme

Page 1 of 1



**SGS**

Certificat FR22/81844035

Le système de management de

**WIPELEC**

1 Rue de la Bauve  
77100 MEAUX  
France

a été audité et certifié selon les exigences de

**ISO 9001 : 2015**

Pour les activités suivantes

Réalisation d'activités de :

Découpe chimique

Traitements de surface

Usinage et électroérosion de précision

Assemblage verre et céramique métal.

Carrying out activities of:

Chemical etching

Plating electrolytic and electroless

Precision machining and electrical discharge machining

Glass & Ceramic to metal sealing.

Ce certificat est valable du 22 février 2022 au 2 janvier 2025  
et reste valable sous réserve des audits de surveillance satisfaisants  
Version 2

Autorisé par



SGS ICS

29, avenue Aristide Briand 94111 Arcueil Cedex France  
t +33 (0)1 41 24 87 75 f +33 (0)1 73 01 71 29 [www.sgs.com](http://www.sgs.com)

Page 1 de 1





# Environment



**COMING SOON**



*Wipelec has been committed to an environmental approach for almost 5 years now, making it one of its priorities. Assisted by the CCI 77, we will present the certification.*

**ISO 14001**

*Décembre 2022*

*Our manufacturing complies with the European directives RoHS and REACH.*



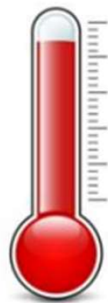
# Control

**Fluorescence X**  
**Video Measurement & Touch Probe**  
**Leak Detector**  
**Megohmmeter**  
**Profile Projector**  
**Durometer Binoculars x 8 to x 45**  
**Microscope x 1280**



**Control**

**Other tests**



**Thermal testing up  
to 1200°**



**Weldability testing**



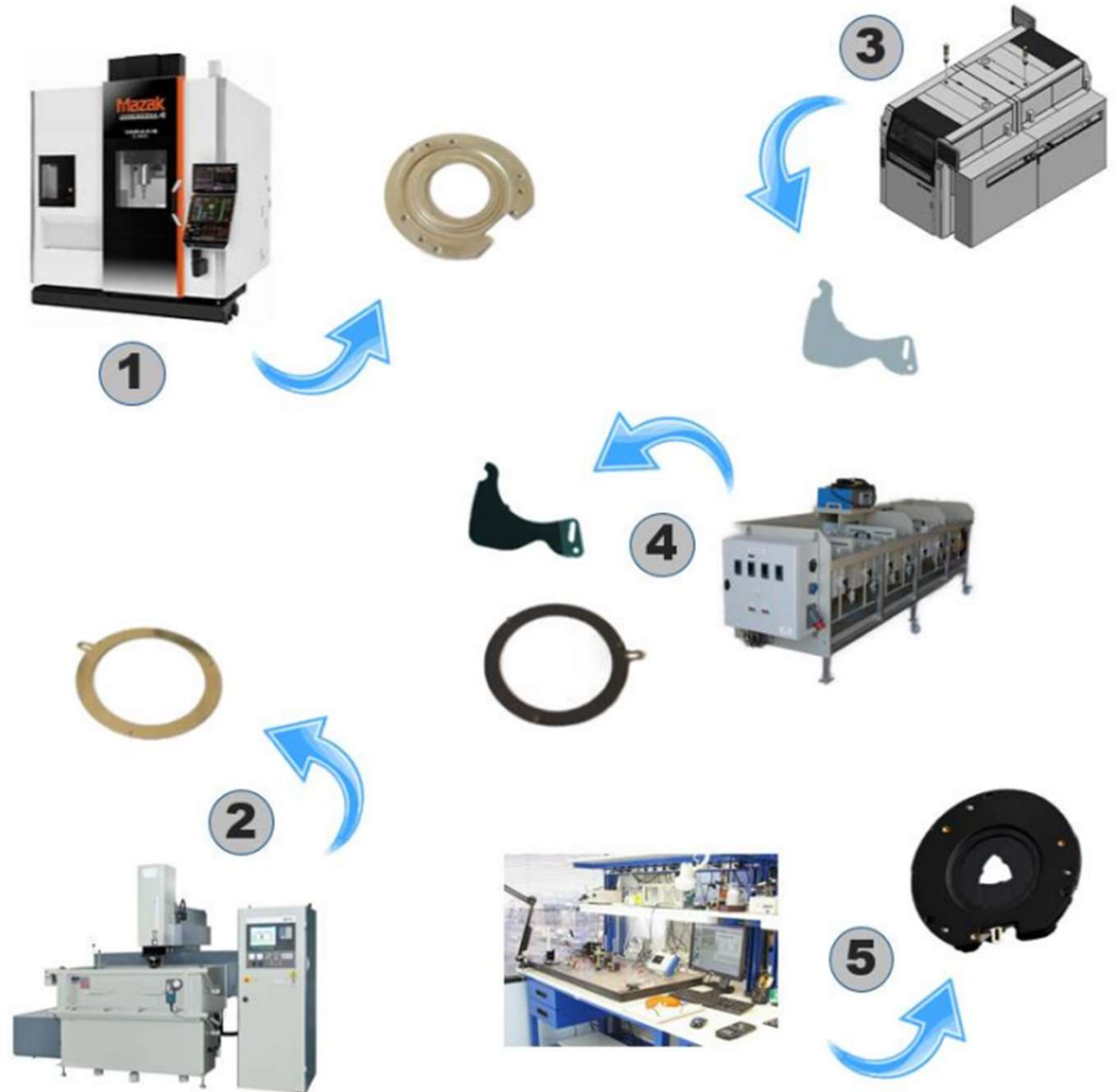
**Aging testing**



**Adhesion testing**

# A complete service

- 1) Machining
- 2) Wire EDM
- 3) Chemical etching
- 4) Surface treatment
- 5) Assembly





# A complete service

- 1) Machining
- 2) Brazing
- 3) Surface treatments
- 4) Hermeticity HE



# Your advantages



**AN EXCLUSIVE CONTACT  
THROUGHOUT  
PRODUCTION.**



**REDUCED LEAD TIMES.**



**CONTROLLED COSTS, NO  
ACCUMULATION OF  
MARGINS.**



---

**MADE IN FRANCE**

**Contact**

# Your contacts at Wipelec



**Guy PELAMOURGUE**  
CEO

Tel : 01 60 41 13 31

[pelamourgue@wipelec.fr](mailto:pelamourgue@wipelec.fr)

1, Rue de la Bauve  
77100 MEAUX



[www.wipelec.fr](http://www.wipelec.fr)



**Christophe GARRABE**  
Managing & Sales Director

Tel : 01 60 41 13 35  
Mob : 06 73 23 22 80

[garrabe@wipelec.fr](mailto:garrabe@wipelec.fr)

1, Rue de la Bauve  
77100 MEAUX



[www.wipelec.fr](http://www.wipelec.fr)



**Kévin ROBIN**  
Production & QSE Manager

Tel : 01 60 41 13 36  
Mob : 06 26 86 13 72

[robin@wipelec.fr](mailto:robin@wipelec.fr)

1, Rue de la Bauve  
77100 MEAUX



[www.wipelec.fr](http://www.wipelec.fr)



**Gaël NOBILLEAU**  
Sales Administration  
Service Manager

Tel : 01 60 41 13 38

[nobilleau@wipelec.fr](mailto:nobilleau@wipelec.fr)

1, Rue de la Bauve  
77100 MEAUX



[www.wipelec.fr](http://www.wipelec.fr)



**Jessica VERDIERE**  
Purchasing Manager

Tel : 01 60 41 13 32

[achats@wipelec.fr](mailto:achats@wipelec.fr)

1, Rue de la Bauve  
77100 MEAUX



[www.wipelec.fr](http://www.wipelec.fr)



**GLASS AND  
METAL SEALING**

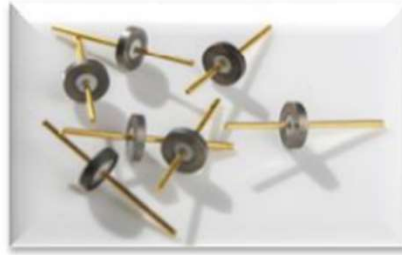


**MADE IN FRANCE**

**NEW PRODUCT**



**METAL AND CERAMIQUE  
BRAZING**



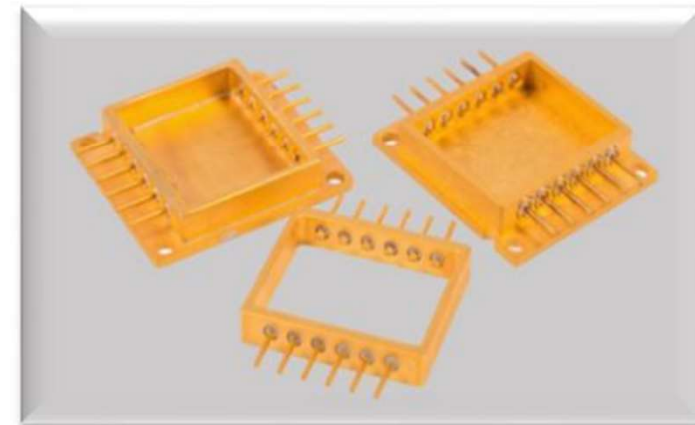
## GLASS AND METAL SEALING



**NEW PRODUCT**



## **METAL AND CERAMIQUE BRAZING**



**NEW PRODUCT**

# FAIR MICRONORA 2022

## Exhibition in Numbers

As the quintessential industrial niche exhibition, Micronora stands as the benchmark exhibition in Europe within the field of micro-techniques and precision. It has been open to nanotechnologies since 2006.

The exhibition is held every two years in Besançon, France. It enjoys steady growth and significant recognition both in France and internationally.

25 000 m<sup>2</sup>

of exhibition space

+ 800

exhibitors

33%

international  
participants

+11 000

professional visitors

41

countries represented























