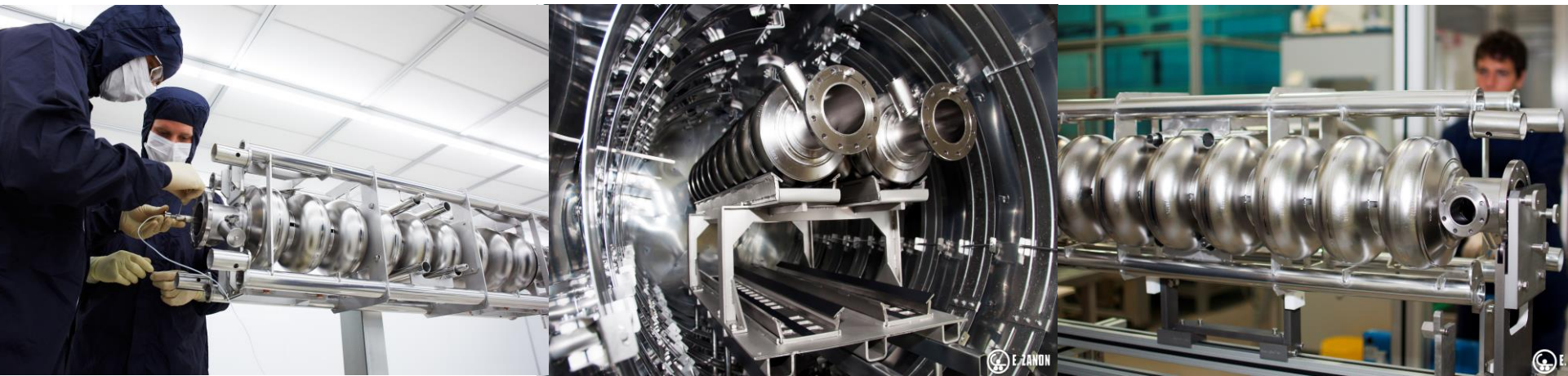




HIGH TECHNOLOGY PRODUCTS FOR SCIENTIFIC RESEARCH & INDUSTRY



TTC Workshop

25th January 2022

Schio - Vicenza - Italy

www.zanonresearch.com

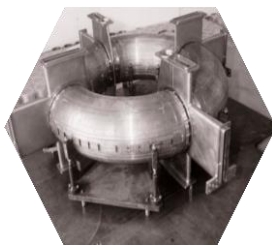
HYSTORY



1919

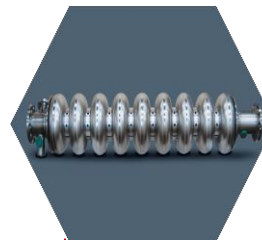
Ettore Zanon
founded the
company

First Industrial
site in Schio,
Vicenza



1970

Zanon enters in
the Research
field



1990

Electron Beam plant
is installed. Zanon
manufactures the
first Niobium
Cavities.



 **SIMIC** Spa

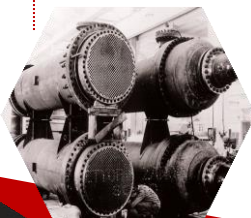
2020

SIMIC
acquires
Zanon, that
becomes
ZANON
Research &
Innovation Srl.



First Pressure
Equipment are
manufactured

1950



Zanon manufactures the
first Vacuum Vessels

1980



OUR MISSION & STRATEGY

- **SYNERGY**

Create Synergies between SIMIC and ZANON on know-how, expertise, facilities and equipment.

- **DIVERSIFICATION**

Offer our customers a wide range of High-Technology products for different fields.

- **CREATION OF VALUE**

Create value by investing in the growth of our resources, know-how, facilities and equipment.





The company is located in Schio, North-East of Italy,
1 hour from Venice, where the mother company SIMIC has its main workshop.

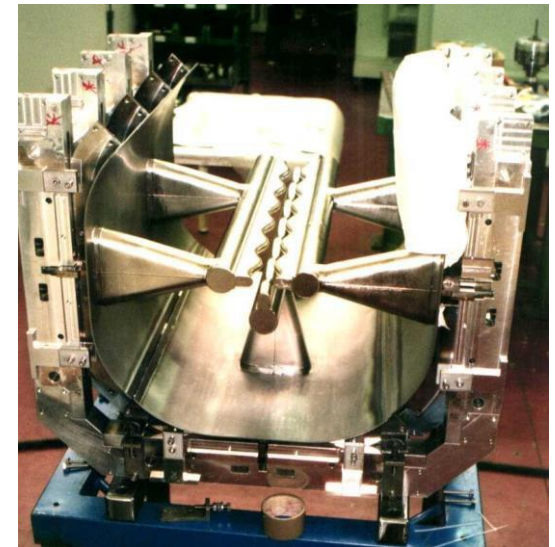
Working closely for more than 30 years with the most important Physics Research Institutes in the world, from prototyping to series production.

HIGH TECHNOLOGY PRODUCTS

- RF Cavities
- Cryomodules
- Tuners
- Vacuum Chambers
- Cryostats
- Antennas
- Collimators
- Special parts

MAIN SECTORS

- Scientific Research
- Fusion Energy
- Aerospace
- Industry
- Medical

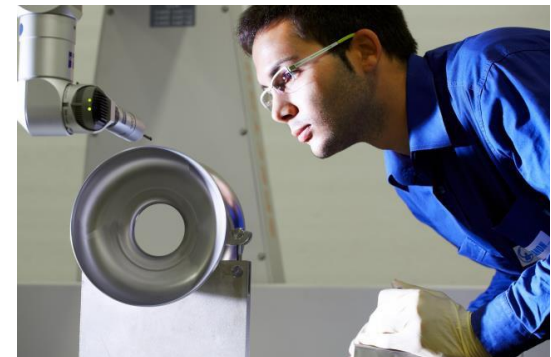


OUR MAIN SKILLS

- Metal forming
- EB welding
- TIG welding
- Brazing
- Complex machining
- Clean rooms
- Electropolishing & Chemical Treatments
- UHV (Ultra High Vacuum)
- Thermal treatments
- 3D Metrology

MAIN MATERIALS

- High Alloy Steel (SS, Duplex and Superduplex)
- Niobium and Tantalum
- Nickel and Nickel Alloys (Inconel, Incoloy, Monel, Titanium)
- Zirconium

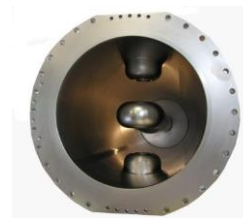
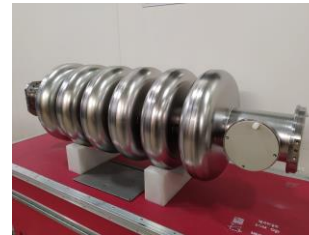


ZANON REFERENCES

ZANON has a **long experience** on **manufacturing** special components for **superconducting application** started in the early 90's and continued without interruption since nowadays (**30 years experience** on Niobium manufacturing).

ZANON manufactured **> 1000 SRF cavities** made using **bulk Niobium**:

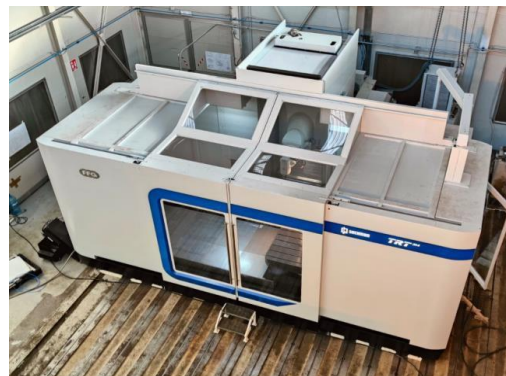
- 60% Elliptical cavities
 - 700 MHz
 - 650MHz
 - 1.3 GHz
 - 3.9 GHz
- 20% Single & Double spokes cavities
- 20% Other:
 - Quarter wave resonator
 - Half wave resonator
 - RFQ quadrupoles
 - Crab cavities



The **80% of the cavities** manufactured by ZANON **have been treated** by ZANON (EP, BCP, Heat Treatment, HPR, etc.)

The **ZANON mechanical workshop** is equipped with:

- Cutting, saving & drilling machines optimized for Niobium machining
- Rolling, bending & pressing machines
- 3 & 5 axis CNC milling machines fully
- Horizontal lathe

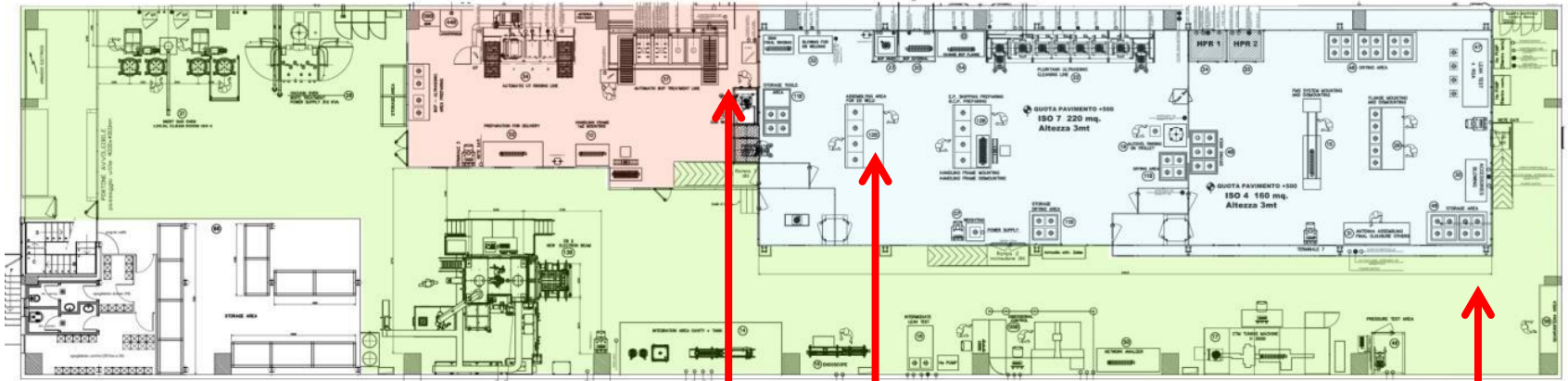


30 years experience in EB welding

Nr.2 EB welding plants:

- S.S. Chamber, size 3.4x2x2m,
- Oil-free pumping group with cryogenic pump, nitrogen venting, RGA





The building is organized
in three main areas

- A) Chemical treatment area
- B) Clean room ISO7/ISO4
- C) Controls, Integration, heat treatments and testing area

ZANON performs in house by internal resources all the fabrication steps and special treatments on SRF cavities.

ZANON can count on qualified staff and experienced technicians:

- Technical manager with over 30 years experience on SRF cavities manufacturing
- Nr. 2 Welding Engineer
- Level 2 & 3 NDE technicians UT, RT, PT, VT, LT
- Metrology Engineer
- Nr.2 Radiofrequency phisicists
- Chimical Engineers with long experience on Nb special treatments
- Qualified welders (TIG, MIG, EBW)
- Clean room operators with long experience

ZANON is totally customer oriented and his specialized staff can **support the customer** in critical technical decision about **SRF cavities design, manufacturing & special treatment solutions.**

Zanon International Customers



ZANON is always ready to establish a **collaborative approach** with the customer, involving him in each step of the design and fabrication process.

Sometimes this approach requires more effort, but at the end the result is always very good: the final product is in line with the customer's expectation and there is no unwanted surprise for the customer ...⇒ the customer and ZANON are both satisfied!



The different pressure vessel regulations used by the customers are easily managed by ZANON without any particular trouble.

ZANON has a long experience in manufacturing pressure equipment according to the main construction codes (ASME, PED, AD-2000, etc.).

ZANON is certified ISO 3834-2 for the manufacturing of Vacuum and pressure equipment.



CERTIFICATE SCHEDULE
ZANON RESEARCH & INNOVATION SRL
Via Vicenza 113 - 36015 – Schio (Vi) - Italy
ISO 3834-2 Scope of Activity

Type of products Manufacturing of high vacuum and pressure equipment for research & industry.

Product standards EN ISO 15614-1, EN ISO 15614-5, EN ISO 15614-11, EN ISO 9606-1, EN ISO 9606-5, EN ISO 14732, EN ISO 13919-2, ASME IX, Customer specifications, EN ISO 5817, EN 13018

Parent materials groups (ISO/TR 15608) 2, 8, 43, 51 and Niobium. Welding and allied processes (ISO 4063) 141, 511

Responsible welding co-ordinator(s)

Name Qualification
Mr. Luca LOTTI Comprehensive Knowledge EWE (Cert. No. CEWE-IT-10331)

Approval Certificate No.: Original Approval : 23 December 2020
LRC00001556/01 Current Certificate : 23 December 2020
Certificate Expiry : 22 December 2025

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ZANON mother Company, SIMIC has over 30 years' experience in manufacturing pressure components according to ASME and PED.

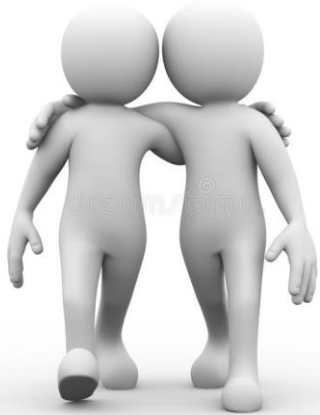
The transportation of the cavities is a very delicate phase, in particular when the shipping is done by airway.

In fact, for the transportation by trucks, for years ZANON has used the same reliable company always without any problem.

In case the cavities have to be sent by air, the major risk is the handling in the airports (nobody can really check) and if the customs decides to open the box to check inside.

For this reason it is very important to fabricate a robust transport box including shock-loggers and tilt watch.





In more than 30 years, ZANON has established strong collaborations, in particular with INFN and INFN L.A.S.A., which is an international center of excellence for SRF cavity technologies.

Not only SRF cavities ...

ZANON is collaborating with INFN also in other fields of technology and science in order to increase the internal know-how and to find new ideas!





**Thank you
for your attention**



Follow us on

www.zanonresearch.com

www.simic.it

