



Hydrogen and decarbonization mission Torino- July 1° 2022

MICRO CHANNEL DEVICES Srl



In collaboration with



And in collaboration with the Regional
Innovation Clusters of Piemonte



per una crescita intelligente,
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The company: about us

Microchannel Devices Srl (MCD) is an innovative SME incorporated on 2019. On 2020 we have set up a 4000 sqm new plant in the industrial area of Torino

MCD is a spin-off on STV group, an European group with HQ in Torino, active since more than 50 years in the chemical etching and surface treatment.

We are active in designing, testing and manufacturing devices made of microchanneled metallic plates.

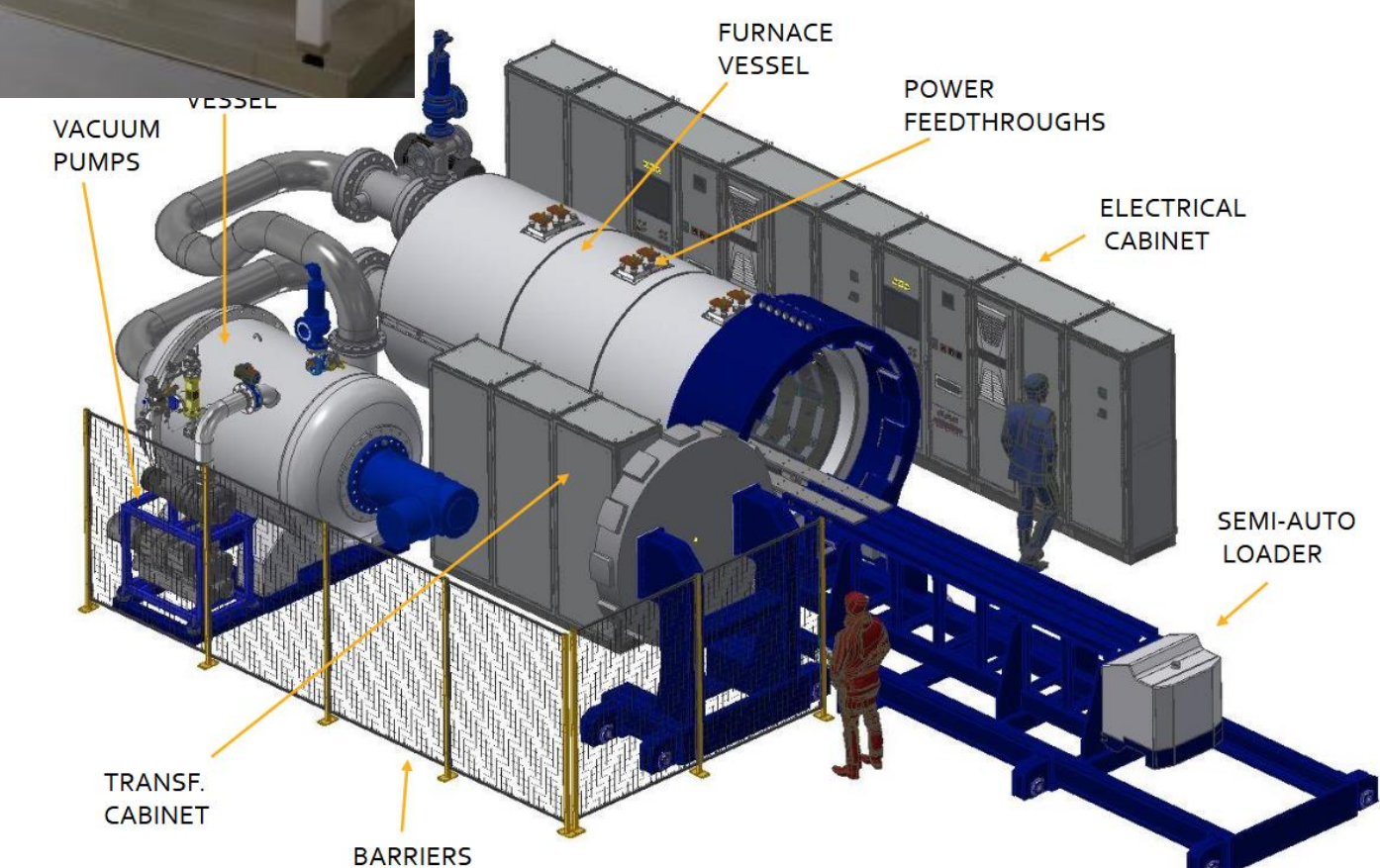
We master the following technologies:

- **photo-chemical etching** (milling) to groove micro channels of any shape on metal plates (inox, Al, Titanium, copper and others) with dimensions up to 850 x 3000 mm
- **diffusion bonding** ("DB"), welding plates all together into a monolithic core (up to 800 x 850 x 3000 mm) in our very large horizontal **Hot Isostatic Pressing** ("HIP") furnace

Our 5-years plan will lead us to invest more than 7 Million € for full vertical integration from metal sheet to complete DB welded cores

MCD is ASME U and U2 certified for welding of pressure vessels

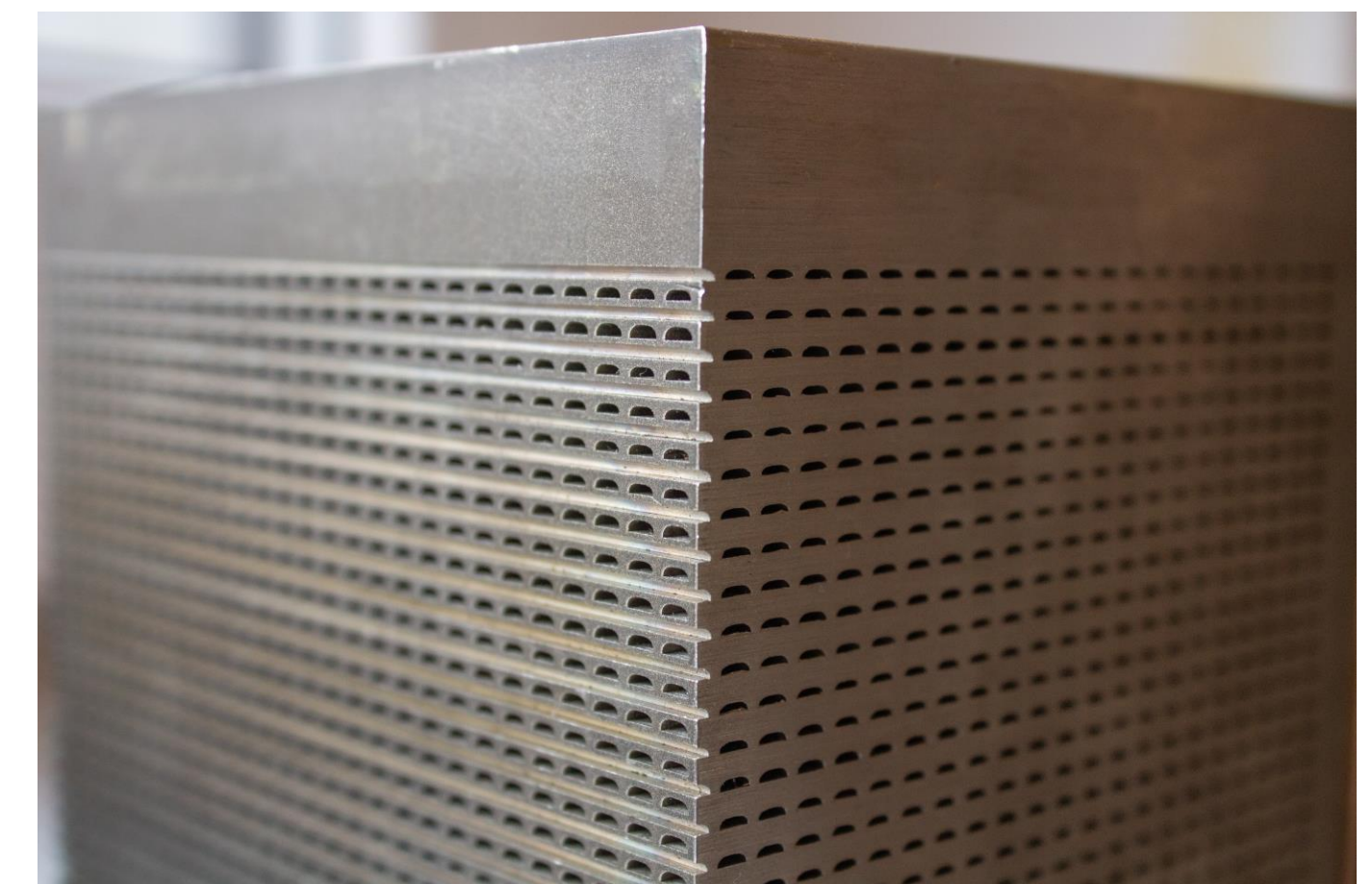
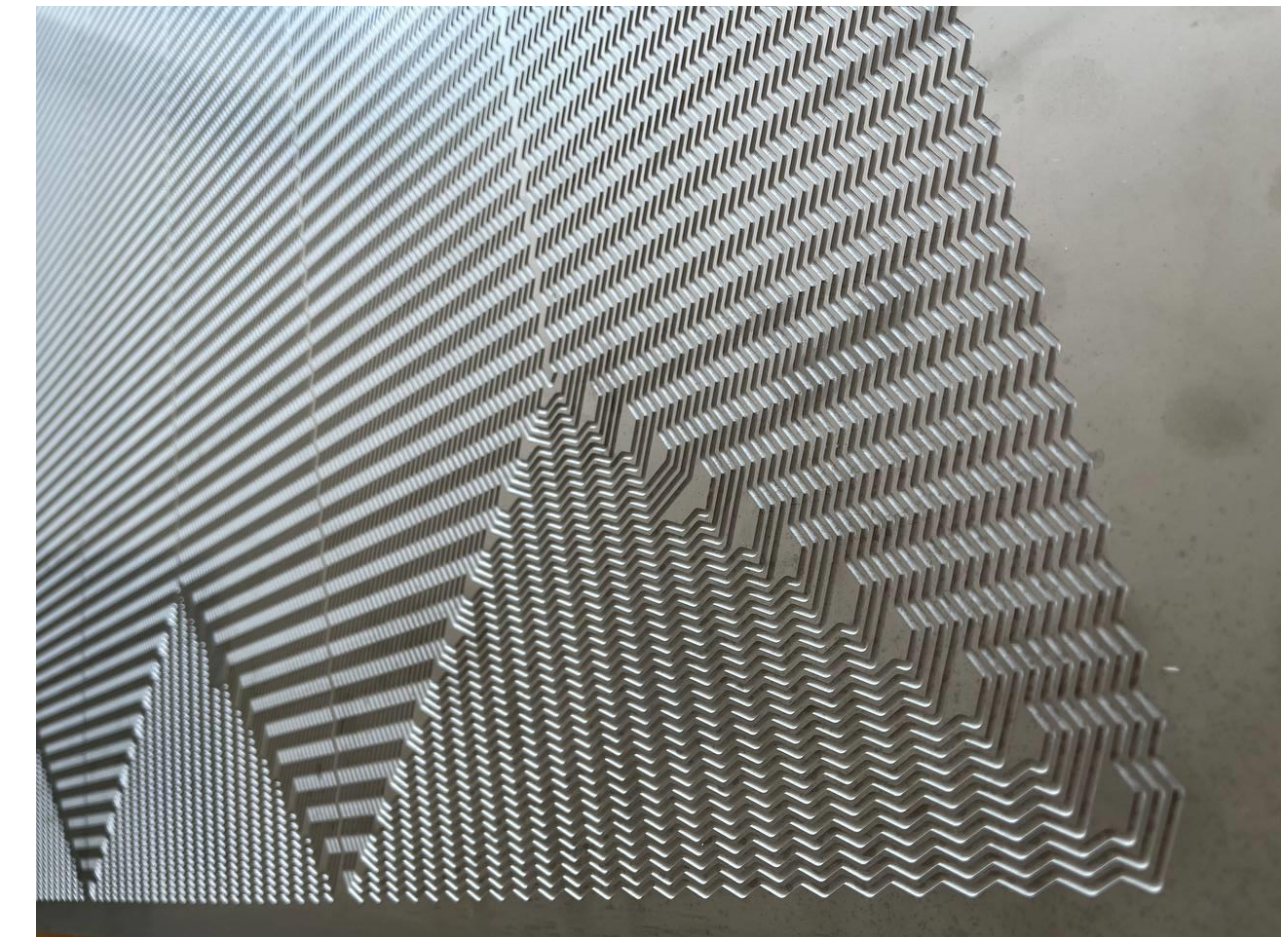
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Our activities

- *MCD microchanneled plates and devices are used all over the value chain of H₂ and decarbonisation to produce:*
 - *Very compact **Heat exchanger cores** for hydrogen compression and distribution (resistance to up to 1000 bar), LNG distribution and phase-change energy storage*
 - ***Bipolar plates** for Hydrolizers and H₂ Fuel Cells*
 - ***Bio-reactors** for CO₂ capture*
- *MCD can produce the biggest microchanneled plates and cores in our reference market (up to 850 mm width and 3000 mm length – up to 800 mm height)*
- *Our main customers are companies active in the field of heat exchange as well as in the H₂ processing and distribution*
- *We are active in the development of solutions for:*
 - *improved heat exchange and pressure resistance,*
 - *Increased energy effectiveness of industrial processes*
 - *mitigation of H₂ effects on materials*
- *We currently cooperate with MESAP, PoliTO and IIT*

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What are we looking for

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We are looking for partners/customers with whom we can leverage our technical capability, process expertise and industrial footprint.

We are exploring cooperation opportunities with companies active in the hydrogen and decarbonization markets to develop solutions based on our products and services:

- *Supplying plates and heat exchanger monolithic cores*
- *Developing solution based on microchannelled plates (from small to very big dimensions) for:*
 - *Bipolar plates*
 - *Cold plates*
 - *Heat pipes*
 - *Fluid-bed bio-reactors*

We are fully organized to take part to regional / national / European cooperation programs for R&D and industrial capability development, supported by private or public funding



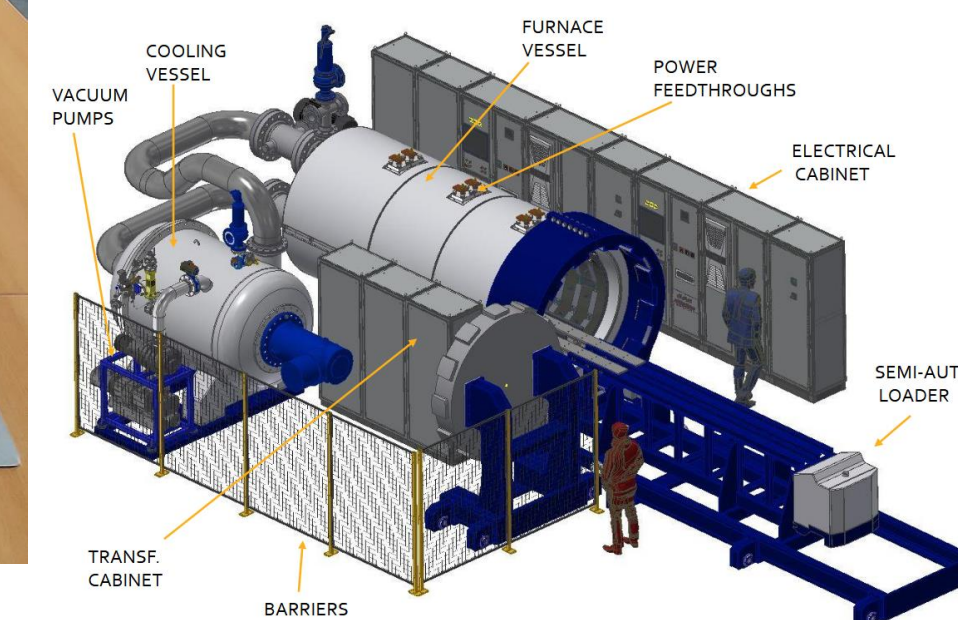
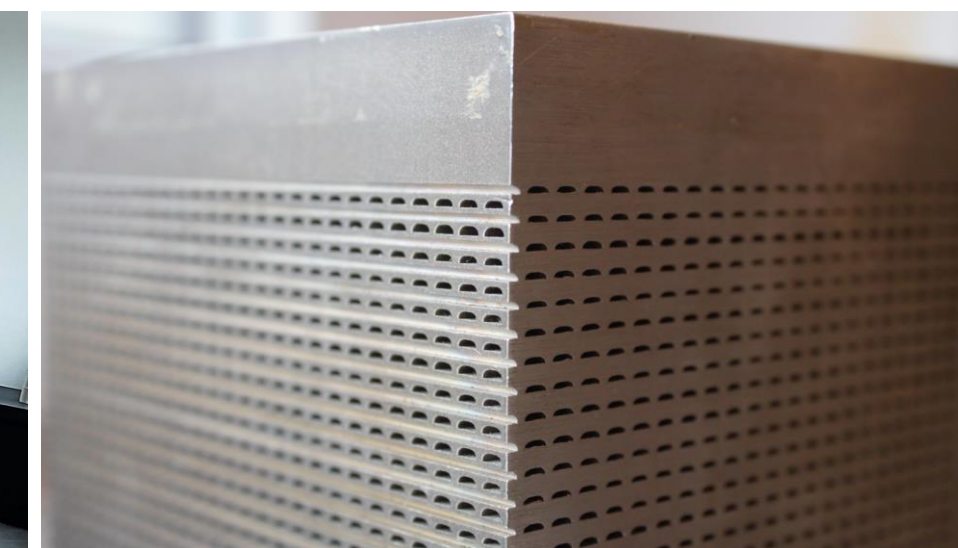
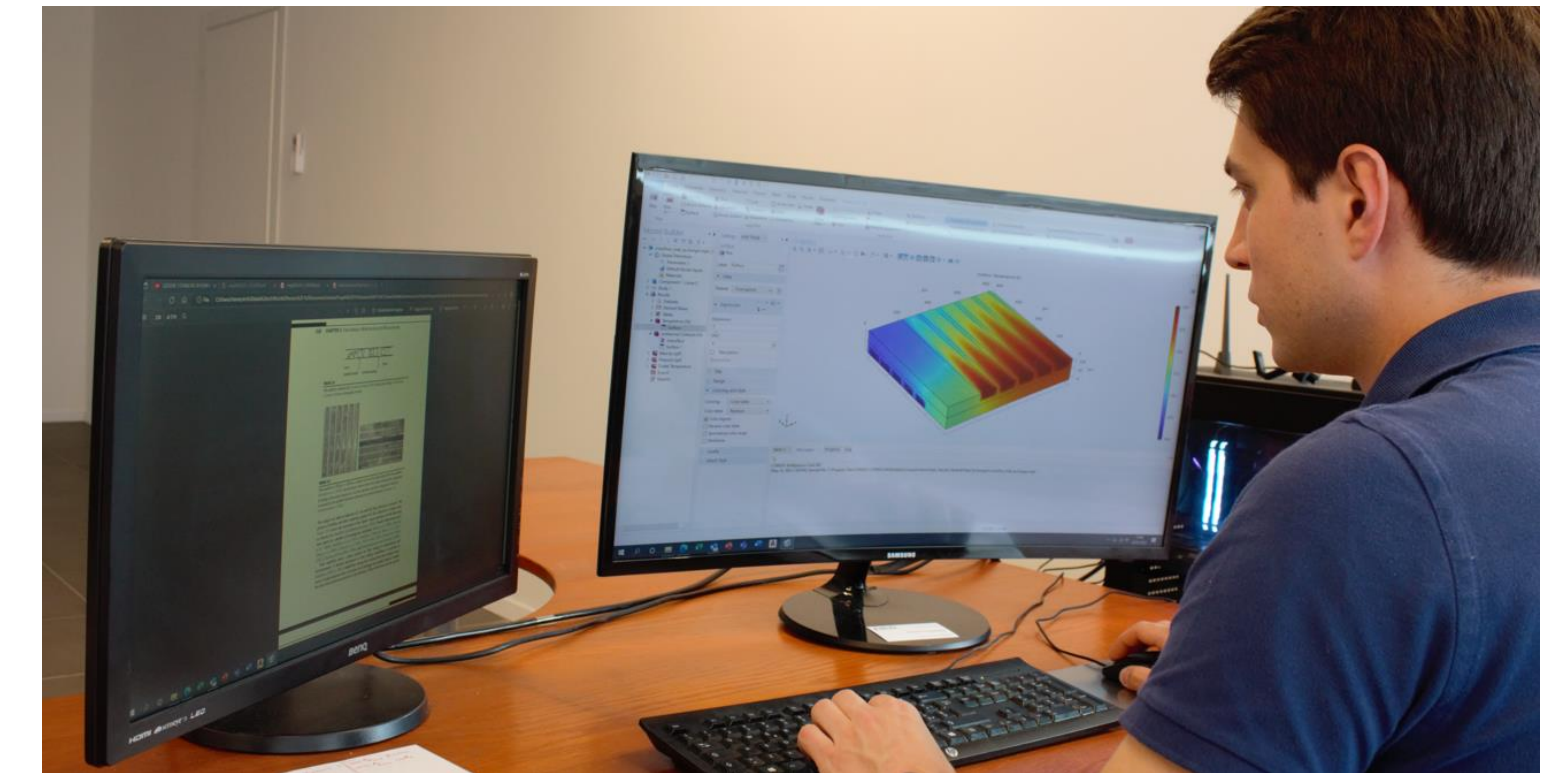
What can we offer

What MCD can offer:

- *hydraulic/thermal/structural design and sizing of microchanneled plates and devices*
- *Manufacturing of microchanneled plates in many materials, up to 850 mm width and 3000mm length, with no or very limited investments*
- *Monolithic cores made of plates welded with Diffusion Bonding*
- *Heat treatment for metallic parts and powder technology in our very large horizontal HIP furnace*

MCD is happy to cooperate with other companies in the field of hydrogen production and utilization/distribution and in the field of any application for decarbonization:

- *To develop new concepts / improve solutions*
- *To produce parts and systems to be introduced into the market*
- *To study new business models, including IoT and servitisation*



THANK YOU

www.microchannel-devices.com



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