



HILAVIS

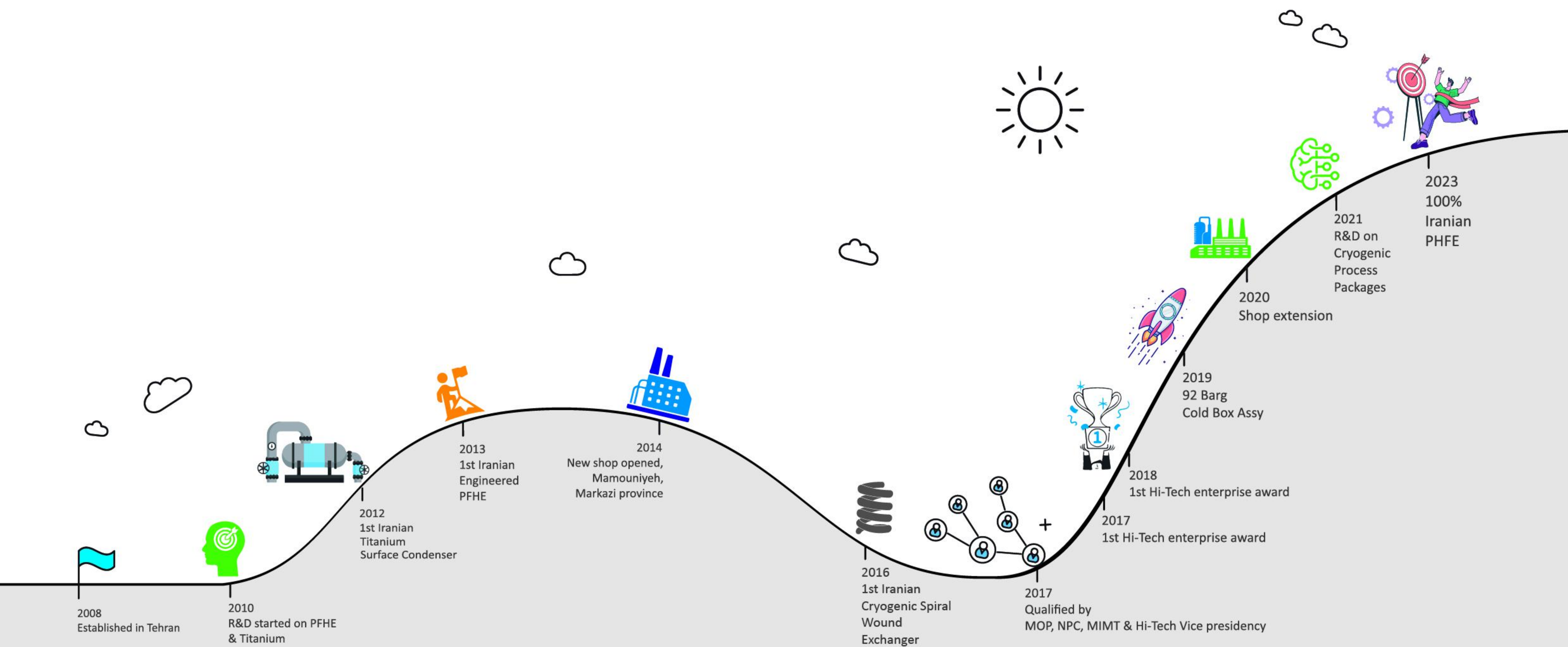
The precision to engineer tomorrow



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History

Milestones



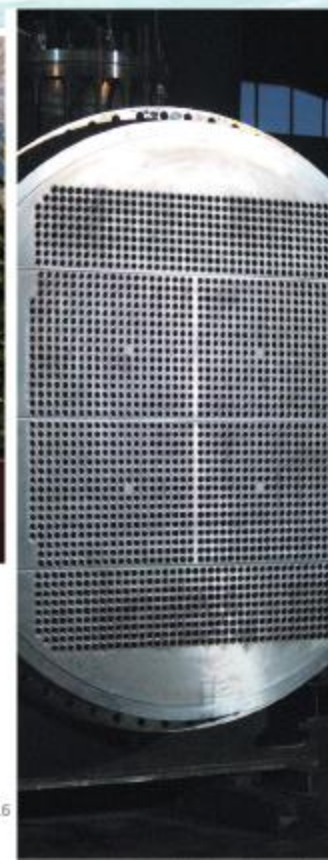
Titanium

Surface Condenser & Heat Exchanger



▲ Titanium Surface Condenser, 1st Iranian made, BIPC Olefin Plant-2012

Titanium is the best response to saline cooling water compared to old copper solutions. Persian Gulf is one of the most saline free waters on the planet and it's worth applying for the right solution.



► Titanium Heat Exchanger, Faravaresh-2016

PFHE Components

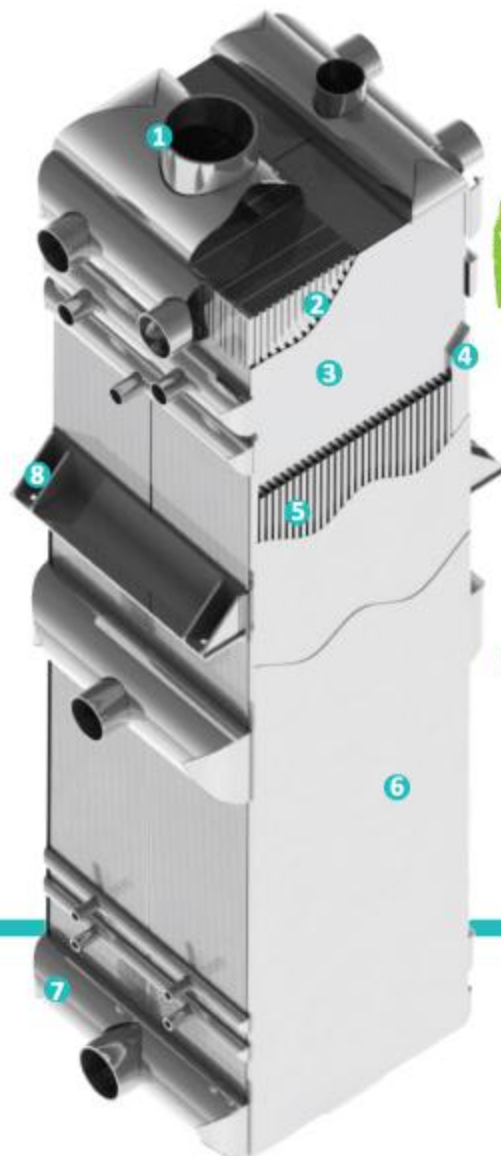
PRESSURE: UP TO 120 Bar

TEMPERATURE: -269 ~ +100 °C

STREAMS: 2 ~ 15

PFHE or BAHX is a compact cryogenic multi-stream heat exchanger, made of layered stack of corrugated planes rigidly bonded by vacuum brazing. Enjoying a very high surface to volume ratio and relatively low pressure drops, it can handle up to 15 streams in a single core.

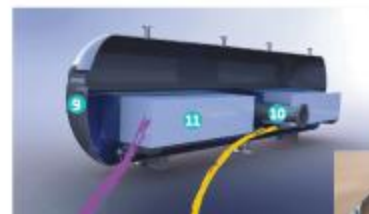
After years of research and continuous work, Hilavis enjoys his matured technics in PFHE design and manufacturing.



- 1 Nozzle
- 2 Distributer Fin
- 3 Parting Sheet
- 4 Side Bar
- 5 Main Fin
- 6 Cap Sheet
- 7 Header
- 8 Support



The assembled unit of PFHE, may include different types of equipment and machineries, depending on the process operation requirements. A continuous purge of 0.5bar Nitrogen inside the box, will provide easy leak detection and protection of the perflite against moisture and ice buildup.



Bi-Clad or Bi-Metallic joints realize durable connection between Aluminum-Stainless pipes under severe thermal loads. The part is manufactured via explosive joining of Aluminum alloy parts to Stainless steel ones, including Nickel buttering.

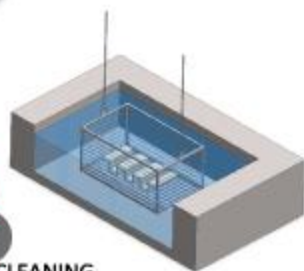
- 9 Pressure Vessel-Kettle
- 10 Bi-Metallic Joint
- 11 PFHE
- 12 Manifold Piping
- 13 Structural Casing
- 14 N2 Blanket Line
- 15 Safety Devices

Fabrication Flowchart

FIN FORMING



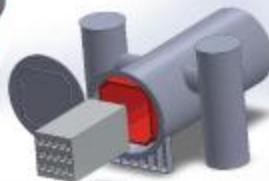
CLEANING



STACKING



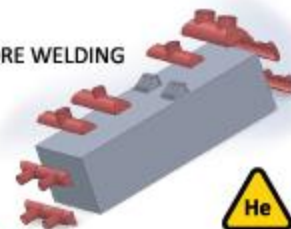
BRAZING



HEADER MAKING



CORE WELDING



FINAL TESTS



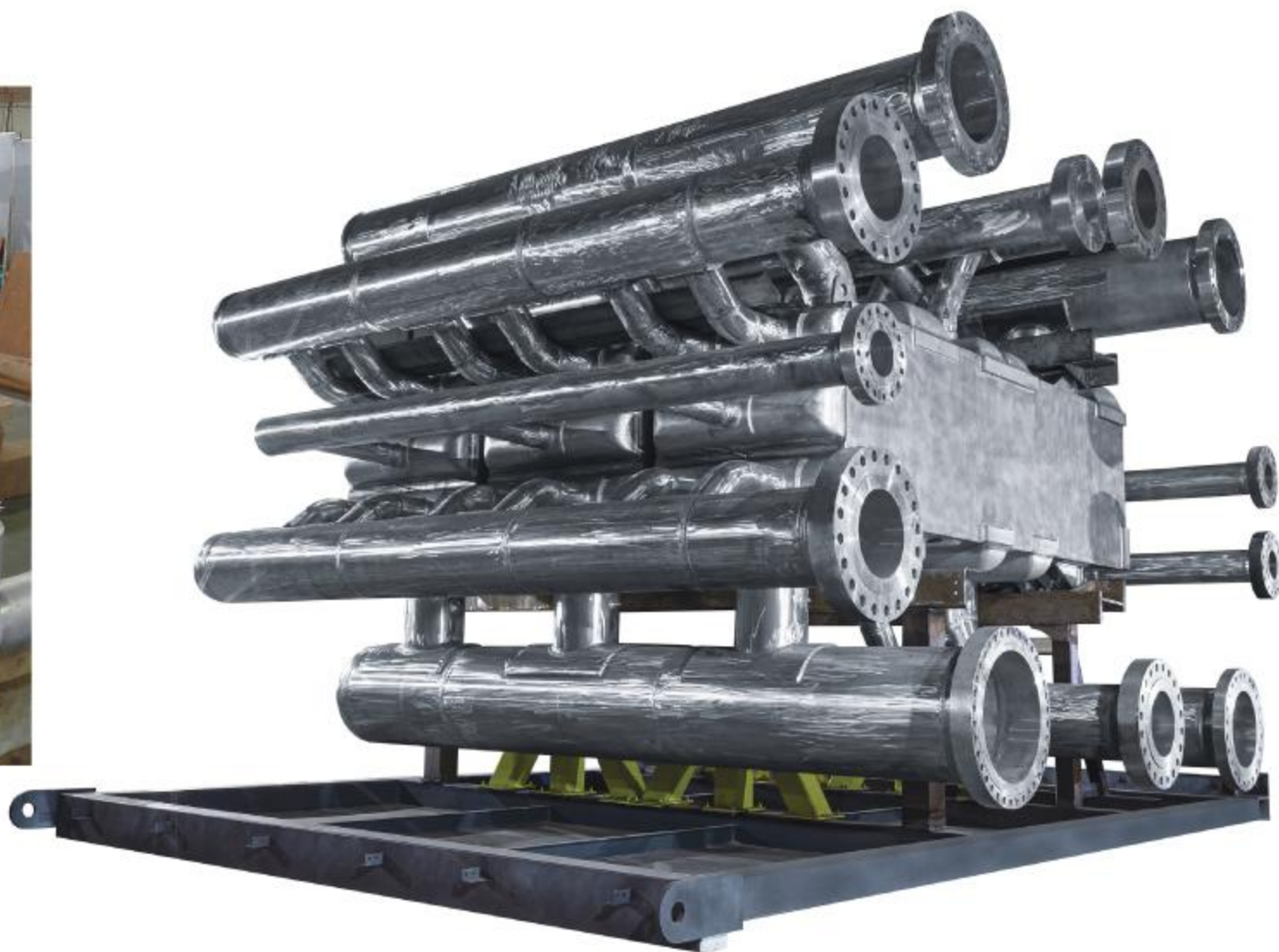
DELIVERY TO NEXT STEPS



Cold Box & PFHE



2013, C2/C3 Rec., BIPC
Nasser Karimian (1982-2020), a close friend and co-founder of PFHE team.



▲ 2015, Olefin



▲ 2019, C2+ Rec., 92 bar



▲ 2021, Argon Rec., 82 bar



▲ 2023, C2+ Rec., 102 bar

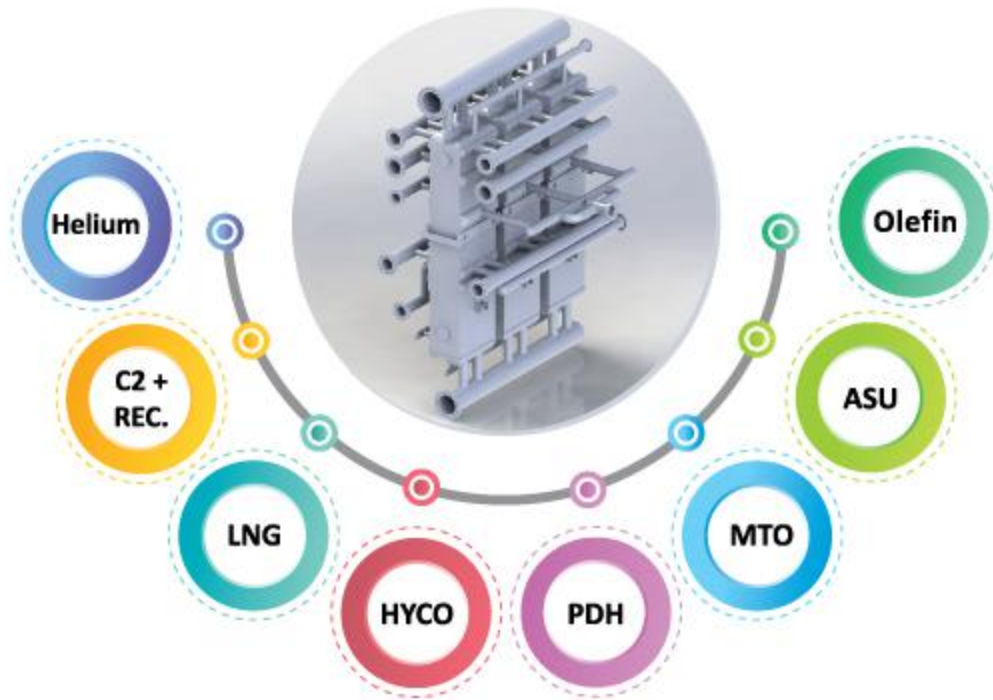


▲ 2023, Olefin, 13 Streams ▲



Cryogenic Units

Gas Separation and Liquefying

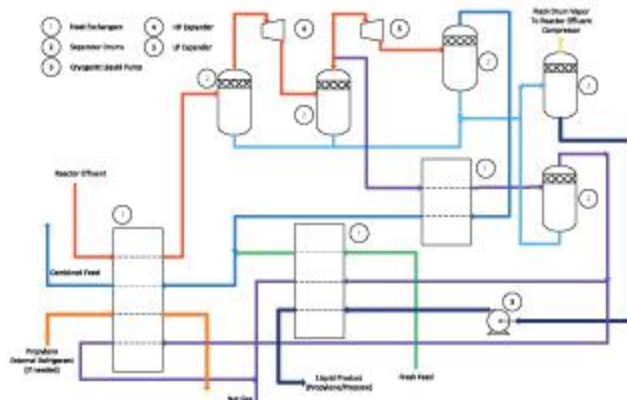


▲ 82 barg PFHE, Argon Recovery Unit, Shiraz Pet. Co., 2021

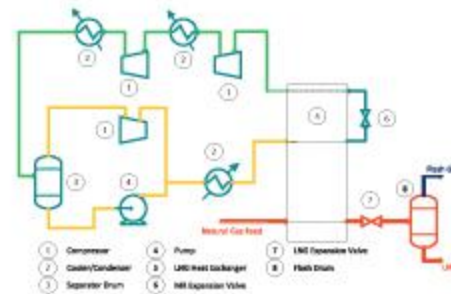
PFHE & SWHE are the key elements of cryogenic separation and gas liquefying units.

PFHE may be applied as single or piped core, in kettle or distillation tower and cold box configurations. The assembly may include different types of equipment and machineries, depending on the process operation requirements.

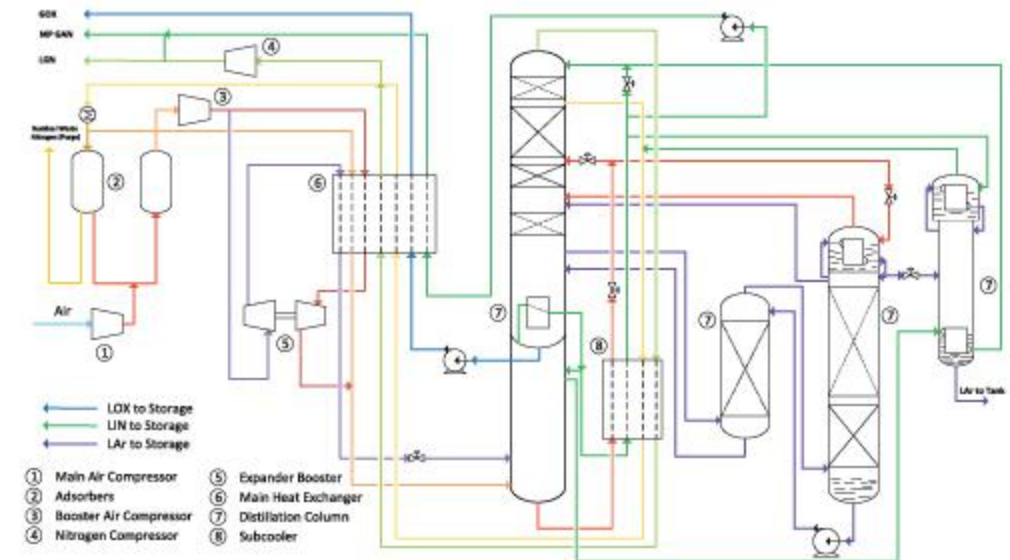
SWHE is a robust alternative to PFHE, with relatively larger footprints though.



PDH cryogenic separation cold box of propane dehydrogenation plant



LNG mixed refrigerant liquefied natural gas plant



ASU O₂/N₂/Ar plant

SWHE

Cryogenic Spiral Wound Heat Exchanger



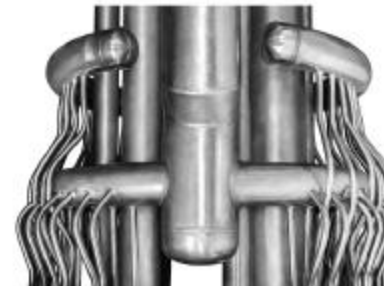
Pressure Range: Up to 400 bar
Temperature Range: -269 ~ +650 °C
Application: Ethylene, Ammonia, LNG,
Tube Material: Stainless Steel, Aluminum

▲ SWHE, SS Tp. 321, Ethylene Unit, Marun Pet. Co., 2016

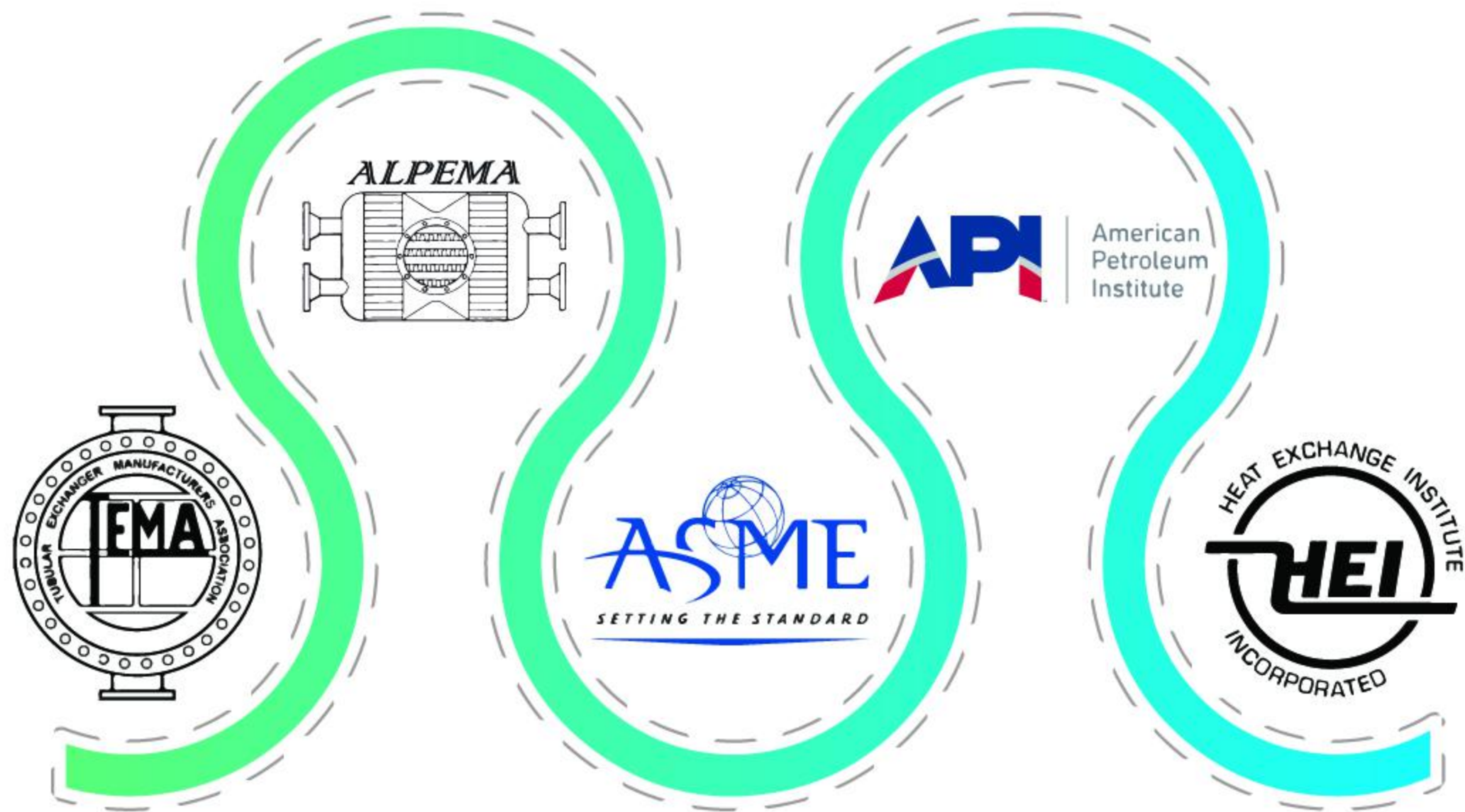
SWHE is among the cryogenic multi-stream exchangers and plays a crucial role in the heat integration of gas processing units.

The multi-layer woven tube arrangement, realizes spotless heat transfer between plenty number of fluids, passing by each another without concerns of thermal shock, cleanliness or phase change complicities.

Stainless Steel & Aluminum tubes are mostly applied for winding the exchanger core. The compact and efficient configuration is employed in Isothermal Reactors as well as Cryogenic applications. The unique geometry of this type of exchanger and the ability to use different materials makes it a suitable option for a wide range of process applications.



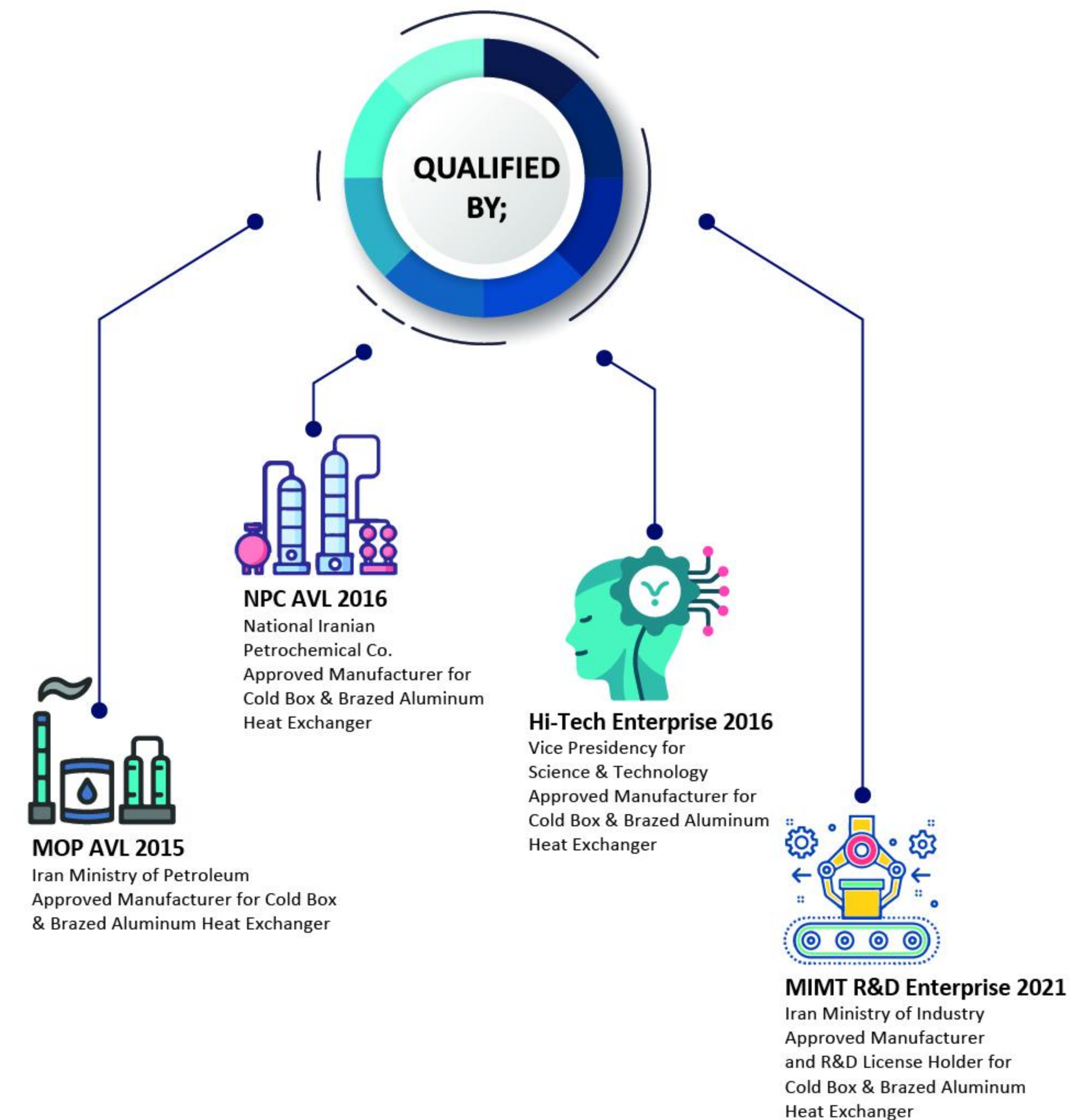
Quality Management



Our QMS is under a non-stop monitoring and improvement process. It covers every stage of the work from design to after sales services. It complies with world-known norms and codes related to our products while admitting the client's special requirements in each single case. Our teammates are well trained and committed to this framework.



Qualifications



CLIENTS

BIPC	BID BOLAND	SPGC	KPRC
MPC	PARSIAN PPS	BAORCO	NISOC
SHIRAZ PC	RAZI PC	LORCO	MOBIN
JAM PC	MEHR PK	IRANOL	HORMOZ PC



Teamwork

Locations



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