



WAVYX

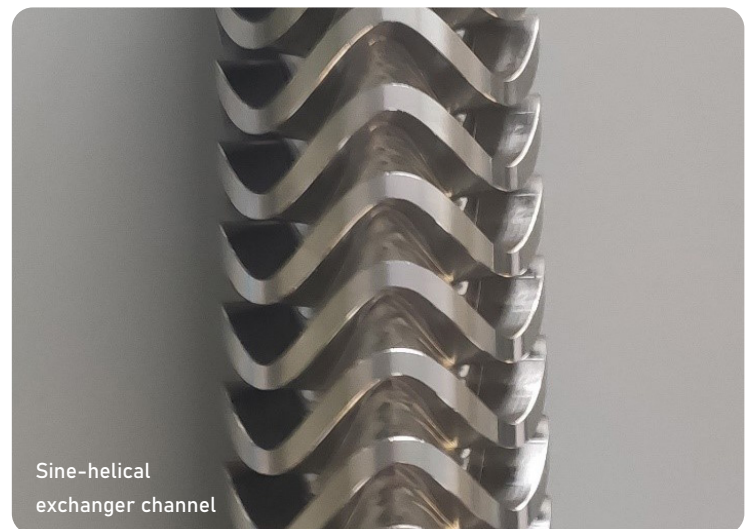
Heat exchangers and reactors

If you want to heat or cool a fluid efficiently, you need to have effective heat exchange with the solid wall with which the fluid is in contact. If the flow does not spread out all along the wall, your system will be much less efficient. WAVYX uses the complex trajectories generated in a sine-helical shaped channel to achieve high heat transfer. A good shake-up provides the basis for effective transfer!

Carnot ISIFoR Institute

Scientific / technological breakthrough

Innovative sine-helical shaped exchangers are the fruit of research conducted by the SIAME lab at Université de Pau et des Pays de l'Adour. They are protected by an International Patent filed in 2020. The research conducted within the framework of Carnot ISIFoR Institute has made it possible to extend the invention's application to a domain of the future – the production of microalgae, which is of great interest for CO₂ capture, effluent decontamination, nutrition, cosmetics and the production of biofuels. We are developing tubular photobioreactors for stepping up production of these microalgae by using the excellent mixing properties of WAVYX technology.



Sine-helical
exchanger channel

Competitive advantage for the economic stakeholders

WAVYX heat exchangers provide a heat transfer gain of 20%-30% when compared to more conventional exchangers. As well as being compact, their dimensions can be optimised for application to each different customer – in the food, wine, energy or transport industries (automotive, rail and aeronautics). Depending on the material used, different design solutions may be envisaged for the sine-helical heat exchangers. And the fact that the gentle forms limit the possibility of clogging is an additional advantage of this WAVYX technology.

