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## SCALE-UP OF MILLISTRUCTURED REACTORS FOR THE IMPLANTATION OF INTENSIFIED REACTORS IN THE CHEMICAL INDUSTRY

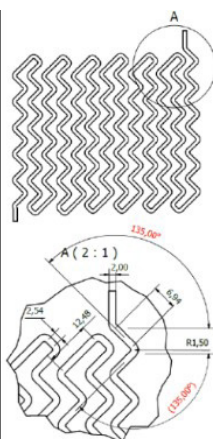
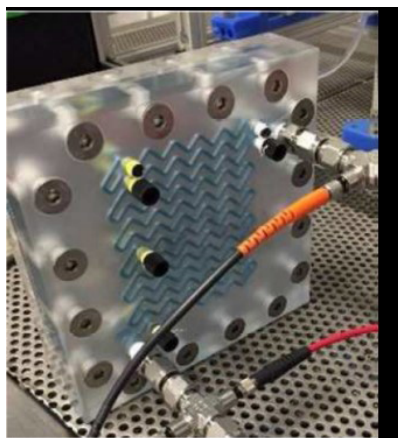
*Extrapolation des réacteurs millistructurés pour l'implantation de réacteurs intensifiés dans l'industrie chimique*

In the process intensification context, new technologies have recently been developed, including milli-heat exchangers reactors. Despite the very successful demonstrations of these devices for the implementation of highly exothermic reactions, their use in industry is still marginal. The main obstacle to the development of these technologies is the low capacity they offer. Scaling-up appears as a relevant strategy for increasing the capacity of intensified reactors.

The main challenge is to identify the size of the device that will provide the best compromise between increasing production and performance degradation.

This work aims at ease the transposition from pilot scale to industrial scale of intensified millistructured reactors using a simple scale-up method based on correlations.

The originality of this work is to provide a scaling-up tool for millistructured heat exchanger reactor based on reliable correlations in a wide range of flow rates, including working beyond laminar flow and with liquid-liquid media.



*Milli-heat exchanger reactor where wavy channel is engraved in a PMMA mock-up*