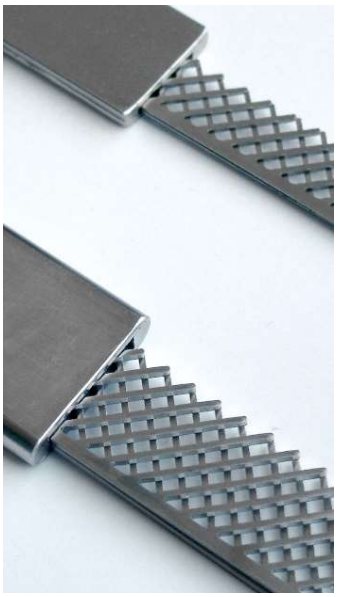
Establishing Micro- and Millireactors worldwide

Process intensification of catalytic hydrogenation



The Miprowa Lab reactor has rectangular channels with a large high surface to volume ratio to create the optimal heat exchange. To even intensify mixing and heat exchange, there are mixing inserts included in every channel. These inserts can be removed and replaced by Pd/CNT catalyst coated metallic open cell foams. Using this foam-based Miprowa millireactor's characteristics, including high mass and heat transfer rates and safety, fully reduced Squalane (>99 %) was obtained at 180 ◦C and 30 bar of H2 for a contact time of 1.45 min. Finally, a scale-up strategy was successfully attempted in our Miprowa pilot-scale reactor that meets further seamless scale-up requirements. A production capacity of 2 kg per day using a commercial intensified reactor with a reacting volume of 43.2 mL was obtained under mild conditions (120 ◦C and 30 bar of H2). Please read about details in the publication.

Lithiation reaction at UCB

UCB is a global biopharmaceutical company focused on neurology and immunology. One of the reactions in their portfolio is a lithiation reaction, which is running successfully in a FlowPlate Lab microreactor on a MMRS base plate including heat exchangers and sensors. Lithiations are very fast and highly exothermic reactions and the lithiated intermediates are highly reactive and unstable. In comparison to batch, where the reaction needs extra low temperatures and several hours of reaction time, a lithiation is running in continuous flow with extremely short residence times because of the fast mixing and the rapid heat exchange.
To avoid and solve clogging issues, you can switch between two reactor setups according to pressure drop variation to ensure continuous production. The second reactor setup is flushed with solvents. So, reactor downtime between switches is typically less than 1 minute.

ACHEMA 2022 - Frankfurt

Please, do not miss the opportunity to meet us again in person. We will be delighted to show you our latest improvements. Place will be the Messe in Frankfurt and you will find us at booth F12 and in the Flow Chemistry Pavilion from 22nd until 26th of August. Have a look at the new designed Miprowa Lab and talk to us about your challenges and requirements.
You don't know, if your process would benefit from the transition to flow chemistry by using microreaction technology? We will assist you with our experience and support you with workshops and proof of principle studies. See you there!

If you have any questions, we will be pleased to answer them by phone, email or in a personal meeting. Visit us under www.ehrfeld.com to obtain an initial impression of our technology.

Or meet us in person at the next events:

ACHEMA, hall 9.1 booth F12
22nd of August – 26th of August in Frankfurt, Germany

In case of further questions, please do not hesitate to contact us:
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Kind regards,
Anne Kaaden

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