

Establishing Micro- and Millireactors worldwide

What are our PhD students doing?

Jan-Niklas Denker and Markus Grabellus support us from the Ruhr University in Bochum and Lucas Schaare from the Hamburg University of Technology. Each is working on a different performance topic and with a different product group.

Jan-Niklas is investigating our Miprowa reactor regarding gas-liquid applications. Recent experimental investigations have shown that in Miprowa reactors, significantly higher kLa values compared to conventional equipment are reached. On top the mass transfer performance strongly depends on the modular static mixing elements, so that mass transfer can be controlled in a targeted manner. In this way, chemical reactions can be specifically accelerated or, conversely, can be reliably controlled in terms of harsh conditions. In consequence, Miprowa reactors are the best solution, when it comes to process intensification and control. For more, please contact: jan-niklas.denker@ehrfeld.com Markus has used the MMRS to further develop a characterization method for continuously operated static mixers using the Villermaux-Dushman test. The Villermaux-Dushman test reaction is a competitive parallel reaction in which the by-product triiodide is formed during slow mixing of the reactants. The concentration of triiodide can be measured inline in the product stream using UV/VIS spectroscopy. He has investigated different material systems and was able to substitute the classically used material system, which contains toxic components, with an easier to handle and less expensive material system. Incredibly quick mixing times were observed, which underline the quality of mixing behavior compared to traditional mixers. For more, please contact: markus.grabellus@ehrfeld.com Lucas' research focuses on the model-based experimental design approach for efficient identification of reaction kinetics in the ART plate reactor, a reactor specially designed for pharmaceutical and fine chemical reactions. The ART plate reactor is characterized by high heat transfer coefficients, narrow residence time distributions, and short mixing times, providing precisely definable process conditions and thus excellent conditions for kinetic studies. By linking the reactor to model-based experimental design, a time- and resource-efficient identification of kinetic models can be realized,



providing crucial information for process design and optimization.
For more, please contact: lucas.schaare@ehrfeld.com

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Christmas time and end of the year

We wish you, your colleagues and your loved ones a very happy Holiday Season and a successful New Year.

Warmest wishes from the Ehrfeld-Team!



Or meet us in person at the next events:

Chemspec europe
24th – 25th of May 2023 in Basel, Switzerland



In case of further questions, please do not hesitate to contact us:

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Kind regards,
Anne Kaaden

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