

FLOW CHEMISTRY

This research area involves the design and test of fixed-bed and monolithic microreactors using organo- and bio-catalysts immobilized on silica or polystyrene as packing materials. The development of continuous-flow processes by the microreactor technology allows for the synthesis of high added-value molecules on the milligram-multigram scale with improved efficiency, sustainability, and lower costs compared to traditional batch processes.

GOALS

- Study of the immobilization strategy of the (bio)organocatalyst.
- Physicochemical characterization of the (bio)material.
- Fabrication of fixed-bed microreactors and monolithic columns.
- Development of new stereoselective carbonylation reactions in flow regime.
- Reaction modeling for process optimization.

INSTRUMENTS AND METHODS

Mass (MS) spectrometry and infrared (FT-IR) spectroscopy. Nuclear magnetic resonance (NMR). Elemental analysis. Chromatographic instruments. Scanning electron microscopy (SEM).

MAIN SUBJECTS

Organic chemistry, biochemistry, analytical chemistry, process chemistry

RESEARCH GROUP

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