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# Immobilized organocatalyst for asymmetric Michael addition in batch/flow: Diastereoselective synthesis of diverse indoloquinolizidines in flow

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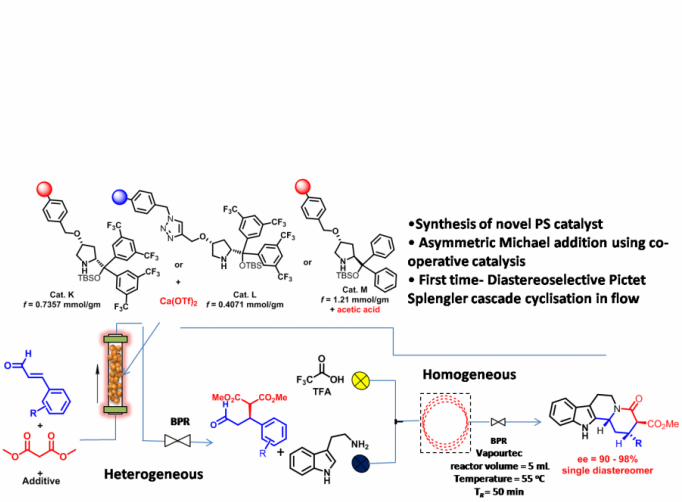
## PURPOSE OF THE ABSTRACT

Asymmetric organocatalysis emerged as a promising approach for variety of challenging transformations. However, due to their expensive, non-recyclable, and unstable nature inspired us to develop its immobilized version which can be reused multiple times. Interestingly, integration of asymmetric immobilized organocatalysts with continuous flow reactor can provide a breakthrough in the chiral revolution with process intensification owing to economic and technical advantages. To this context, we have synthesized immobilized Jørgensen-Hayashi catalysts and employed them for continuous production of asymmetric Michael adduct (precursor for alkaloid).
The produced Michael adducts (aldehyde-ester) employed as a precursor for synthesis of valuable natural products/drugs. To our delight, for the first time, construction of a highly functionalized Indoloquinolizidines was realized via highly diastereoselective Pictet-Splengler cyclisation-lactamization sequence using continuous-flow. Using this approach exclusively cis H1/H12b geometry was obtained via thermodynamic control. In this talk, I will discuss the notable results of our approach.

## FIGURES




## FIGURE 1

Figure

State-of-the-art for construction of indoloquinolizidine using continuous flow

## FIGURE 2


## KEYWORDS

flow chemistry | Immobilized organocatalysis | asymmetric synthesis | alkaloid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