

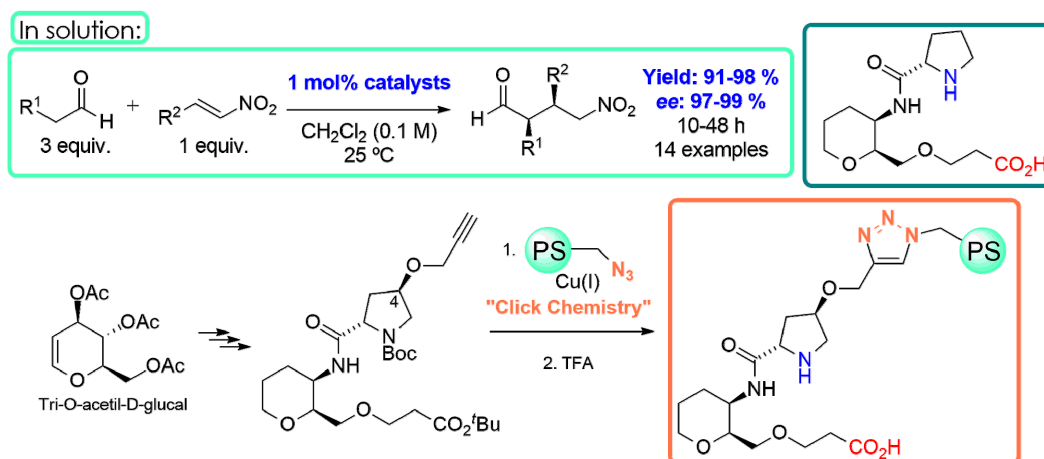
## REUSABLE POLYSTYRENE-SUPPORTED ORGANOCATALYSTS

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Enzymes are catalysts of chemical processes that occur in living beings. Their effectiveness is unquestionable: they work with very low catalytic amounts and high selectivity. However, enzymes are scarce, difficult to purify and structurally very complex, therefore they are not commonly used in synthetic processes. Organocatalysts mimic the catalytic activity of enzymes. One of the challenges of organocatalysis is the recovery of the catalyst, a problem that could be solved by running the reactions in heterogeneous media. The catalyst should then be attached to a solid support, allowing for simple recovery through filtration after reaction completion. Previously, our group synthesized two complementary catalysts, which displayed excellent catalytic activity in solution, even below 1 mol% of catalytic load.[1,2] Considering previous works, we decided that the best solid support could be PS cross-linked with 1 % DVB. In order to anchor organocatalysts on the PS we used "Click Chemistry" between a propargyl ether in the C4 position of the proline and the azidomethylpolystyrene. These immobilized organocatalysts proved to be efficient for conjugate addition reactions of aldehydes to  $\beta$ -nitrosythyrenes and could be reused up to several times without significant loss of enantioselectivity.



Acknowledgements: This research was supported by the Spanish MINECO, cofinanced by the European Regional Development Fund (ERDF) (CTQ2014-59649-P). Congress participation is financed by staff training grant of the ULL by the Ministry of Economy, Industry, Commerce and Knowledge, co-financed by 85% by the European Social Fund.

[1] J. Borges-González, A. Feher-Voelger, F. P. Crisóstomo, E. Q. Morales, T. Martín, *Adv. Synth. Catal.* **2017**, 359, 576-583.

[2] J. Borges-González, I. García-Monzón, T. Martín, *Adv. Synth. Catal.* **2019**, 361, DOI: 10.1002/adsc.201900247.