L. CLOT-ALMENERA, C. RODRÍGUEZ-ESCRICH,\* L. OSORIO-PLANES, M. A. PERICÀS\* (INSTITUTE OF CHEMICAL RESEARCH OF CATALONIA (ICIQ), TARRAGONA AND UNIVERSITAT DE BARCELONA, SPAIN) Polystyrene-Supported TRIP: A Highly Recyclable Catalyst for Batch and Flow Enantioselective Allylation of Aldehydes *ACS Catal.* **2016**, *6*, 7647–7651.

## Allylboration of Aldehydes by Immobilized TRIP



**Significance:** The Pericàs and Rodríguez-Escrich groups report an enantioselective allylboration of aldehydes catalyzed by polystyrene-immobilized TRIP phosphoric acid. The catalyst was prepared by copolymerization of the BINOL derivative **B** with styrene and divinylbenzene, resulting in a functionalization level of 0.20–0.23 mmol/g. The desired homoallylic alcohols were obtained in generally good yields ( $\leq$ 99%), enantioselectivities (er  $\leq$  99:1), and diastereoselectivities (dr  $\leq$  99:1). Interestingly, the scope was explored by using a single sample of the catalyst regenerated by simply washing the resin with a solution of HCl in EtOAc.

**SYNFACTS Contributors:** Benjamin List, Grigory A. Shevchenko Synfacts 2017, 13(01), 0087 Published online: 19.12.2016 **DOI:** 10.1055/s-0036-1589800; **Reg-No.:** B08716SF

2017 © THIEME STUTTGART • NEW YORK

**Comment:** Heterogeneous catalysts offer the advantages of easy recyclability and simplified workup procedures. Although methods for the immobilization of chiral phosphoric acids have been described, immobilization of the most successful acid (**TRIP**) had not previously been achieved. The authors applied their system to the continuousflow catalytic enantioselective allylation of benzaldehyde, giving the corresponding product in 92% yield and an enantiomeric ration of 95.5:4.5 with a turnover number of 282 and a productivity of 2.22 mmol/(h·g<sub>resin</sub>).

## Category

Organo- and Biocatalysis

## Key words

allylboration

homoallylic alcohols

TRIP

immobilization

allylation

aldehydes

