

HETEROGENEOUS CATALYSIS IN FLOW: THE LEACHING OF SOLID PROLINE.

Ashley R. Longstreet, Suzanne M. Opalka, D. Tyler McQuade*, Department of Chemistry & Biochemistry, Florida State University, 95 Chieftan Way Rm. 118 DLC, Tallahassee, FL 32306-4390.

The criteria for reactions that can be performed continuously were once restricted to only homogeneous reactions. Here we demonstrate the use of an insoluble organocatalyst, L-proline, in a packed bed can catalyze the α -aminoxylation in flow with the aid of a thiourea co-catalyst. This is performed by passing a solution of aldehyde and thiourea through a packed-bed of L-proline generating a soluble catalytic species between the aldehyde and L-proline. Thus, a catalytic amount of L-proline is transported for downstream reaction with nitrosobenzene to afford the desired α -aminoxy alcohol after reduction with high enantioselectivity. This method was applied to generating not only soluble species from a packed-bed of L-proline, but also other insoluble reagents, as well.