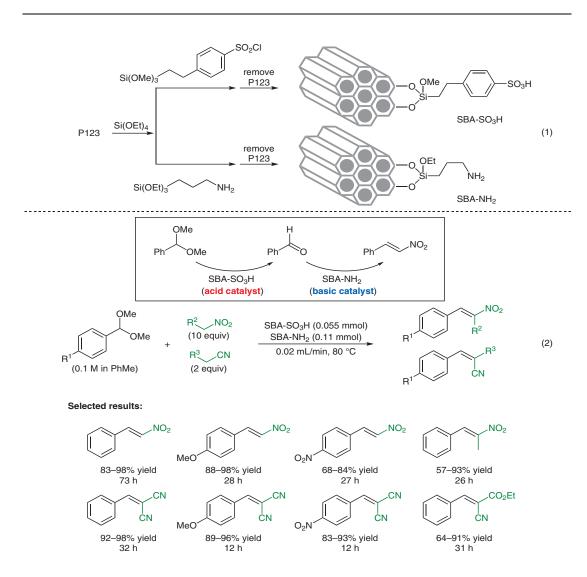
P. BORAH, M. FIANCHINI, M. A. PERICÀS* (THE BARCELONA INSTITUTE OF SCIENCE AND TECHNOLOGY, ICIQ, TARRAGONA, SPAIN)

Assessing the Role of Site Isolation and Compartmentalization in Packed-Bed Flow Reactors for Processes Involving Wolf-and-Lamb Scenarios

ACS Catal. 2021, 11, 6234-6242, DOI: 10.1021/acscatal.1c00889.

Single-Flow System for Acid Hydrolysis and Base Condensation



Significance: Two types of SBA-15-based mesoporous silica bearing sulfonic acid groups (SBA-SO₃H) and amine groups (SBA-NH₂), respectively, were prepared according to equation 1. Acid hydrolysis of acetals and subsequent C–C bond-forming condensation (i.e., a Henry reaction and a Knoevenagel reaction) were achieved in a flow system using a single packed-bed reactor charged with SBA-SO₃H and SBA-NH₂ (eq. 2).

Comment: SBA-SO₃H and SBA-NH₂ were characterized by TEM, FT-IR, N₂ adsorption and desorption, BET, TGA, and TPD analyses. The authors also prepared a catalyst functionalized with both SO₃H and NH₂ groups, SBA- SO₃H/NH₂, but its catalytic activity was inferior to that of a physical mixture of SBA-SO₃H and SBA-NH₂.

SYNFACTS Contributors: Yasuhiro Uozumi, Ryoko Niimi Synfacts 2021, 17(08), 0953 Published online: 20.07.2021 **DOI:** 10.1055/s-0040-1720345; **Reg-No.:** F03121SF

Category

Flow Chemistry

Key words

acid hydrolysis Henry reaction

Knoevenagel

reaction
mesoporous silica

