

SUPPLEMENTARY MATERIALS

Hydrolytic vs. Nonhydrolytic Sol-Gel in Preparation of Mixed Oxide Silica–Alumina Catalysts for Esterification

Atheer Al khudhair ^{1,2,*}, Karim Bouchmella ¹, Pierre Hubert Mutin ¹, Vasile Hulea ¹, Olinda Gimello ¹
and Ahmad Mehdi ^{1,*}

¹ ICGM, University Montpellier, CNRS, ENSCM, 34095, Montpellier, France; karim.bouchmella@umontpellier.fr (K.B.); hubert.mutin@umontpellier.fr (P.H.M.); vasile.hulea@umontpellier.fr (V.H.); olinda.gimelle@umontpellier.fr (O.G.)

² Department of Chemistry, College of Science, University of Kerbala, Karbala 56001, Iraq

* Correspondence: atheer.h@uokerbala.edu.iq (A.A.); ahmad.mehdi@umontpellier.fr (A.M.)

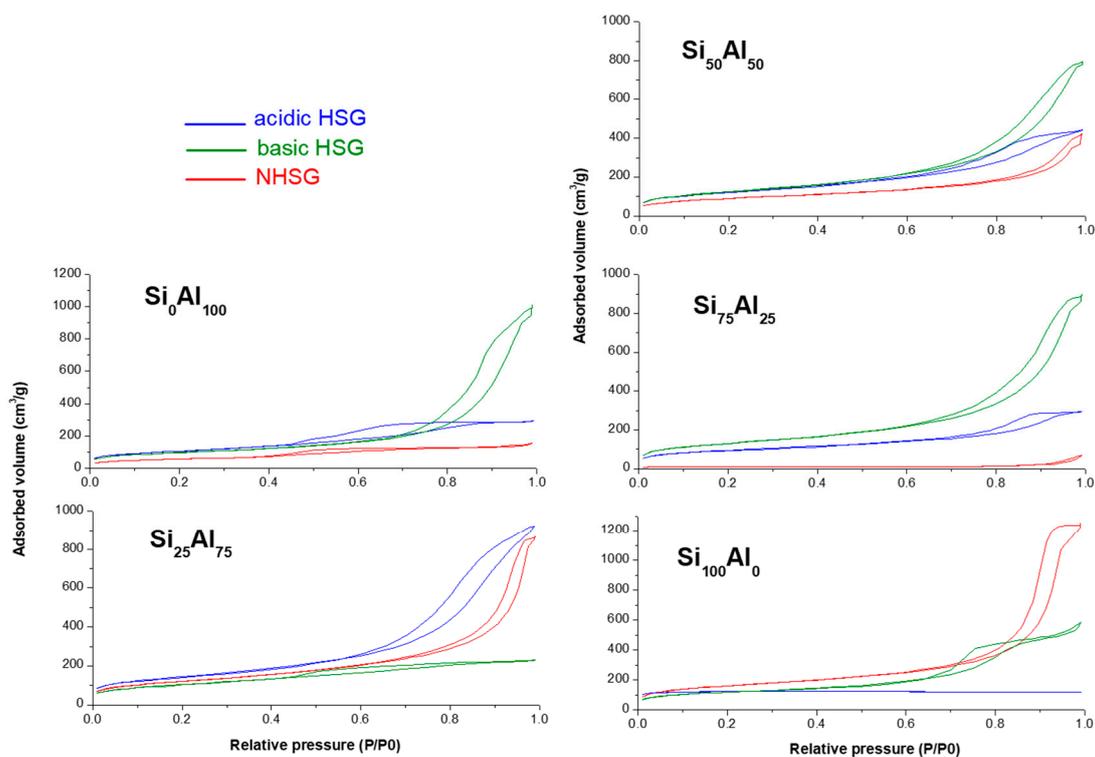


Figure S1. N_2 adsorption–desorption isotherms of Si_xAl_y samples.

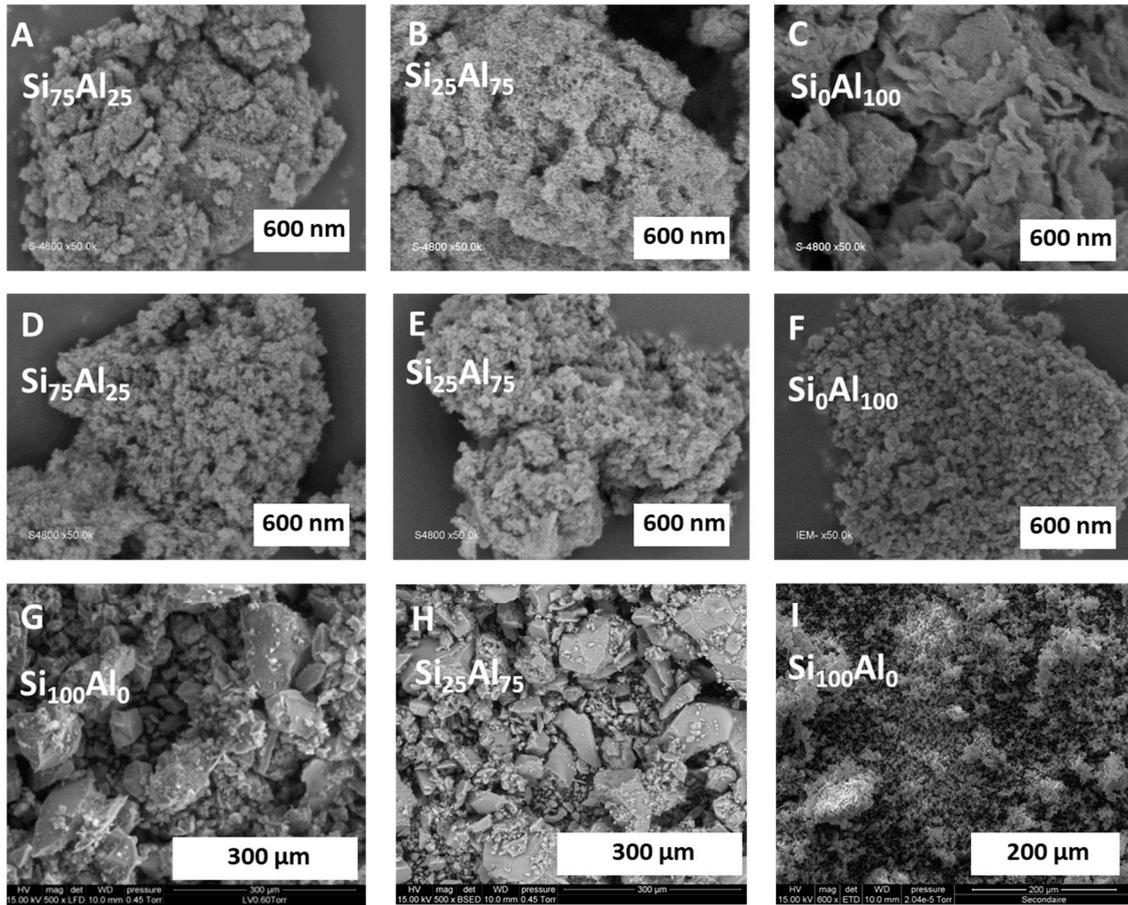


Figure S2: SEM images of samples prepared by acidic HSG (A, B, C), basic HSG (D, E, F) and NHSG (G, H, I).

Table S1: XRD data of γ -Al₂O₃

2θ (deg)	hkl, ICDD: 29-1486, 29-0063, 10-0425
19.58	[111]
34.83	[220]
37.38	[311]
39.40	[222]
41.26	
45.73	[400]
60.85	[511]
66.85	[440]
84.87	[444]