

Understanding the high catalytic activity of propylsulfonic acid-functionalized periodic mesoporous benzenesilicas by high-resolution ^1H solid-state NMR spectroscopy

Renée Siegel,^a Eddy Domingues,^b Rodolphe De Sousa,^c François Jérôme,^c Cláudia M. Morais,^c Nicolas Bion,^c Paula Ferreira,^{b} and Luís Mafra^{a,d*}*

^aDepartment of Chemistry, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal

^bDepartment of Ceramics and Glass Engineering, CICECO, University of Aveiro, 3810-193 Aveiro, Portugal

^cLaboratoire de Catalyse en Chimie Organique, University of Poitiers, 4 rue Michel Brunet, BP633 86022 Poitiers Cedex, France

^dDepartamentos de Química Física y Analítica y Química Orgánica e Inorgánica, Universidad de Oviedo, 33006 Oviedo, Spain

*Corresponding authors. lmafra@ua.pt, +351 234370620 (L. Mafra) and pcferreira@ua.pt, +351 234401419 (P. Ferreira). Fax: +351 234401470 (P.Ferreira; L.Mafra).

Electronic Supporting Information

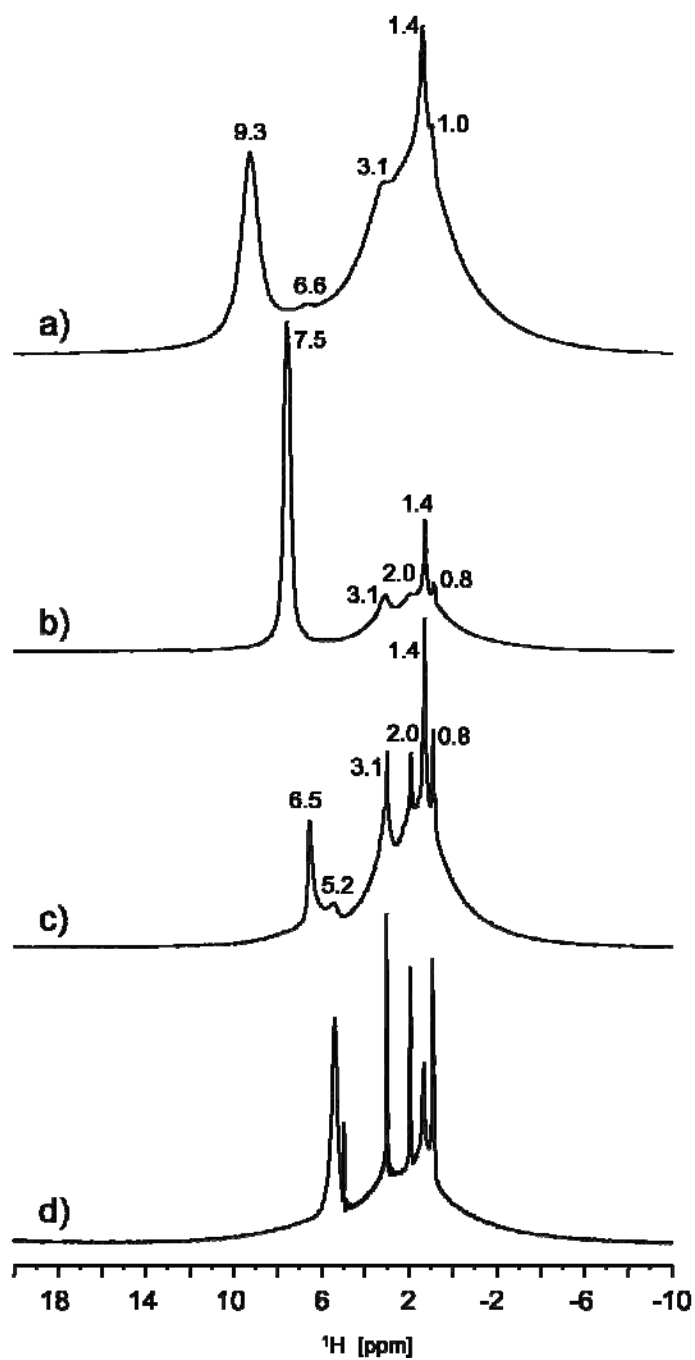


Figure S1 – ^1H MAS NMR spectra of propylsulphonic acid-functionalized ethyl PMO recorded at different deuterium exchange times. **a)** Without deuterium exchange; **b)** after 2 days, **c)** after 4 days and **d)** after 1 week of deuterium exchange.

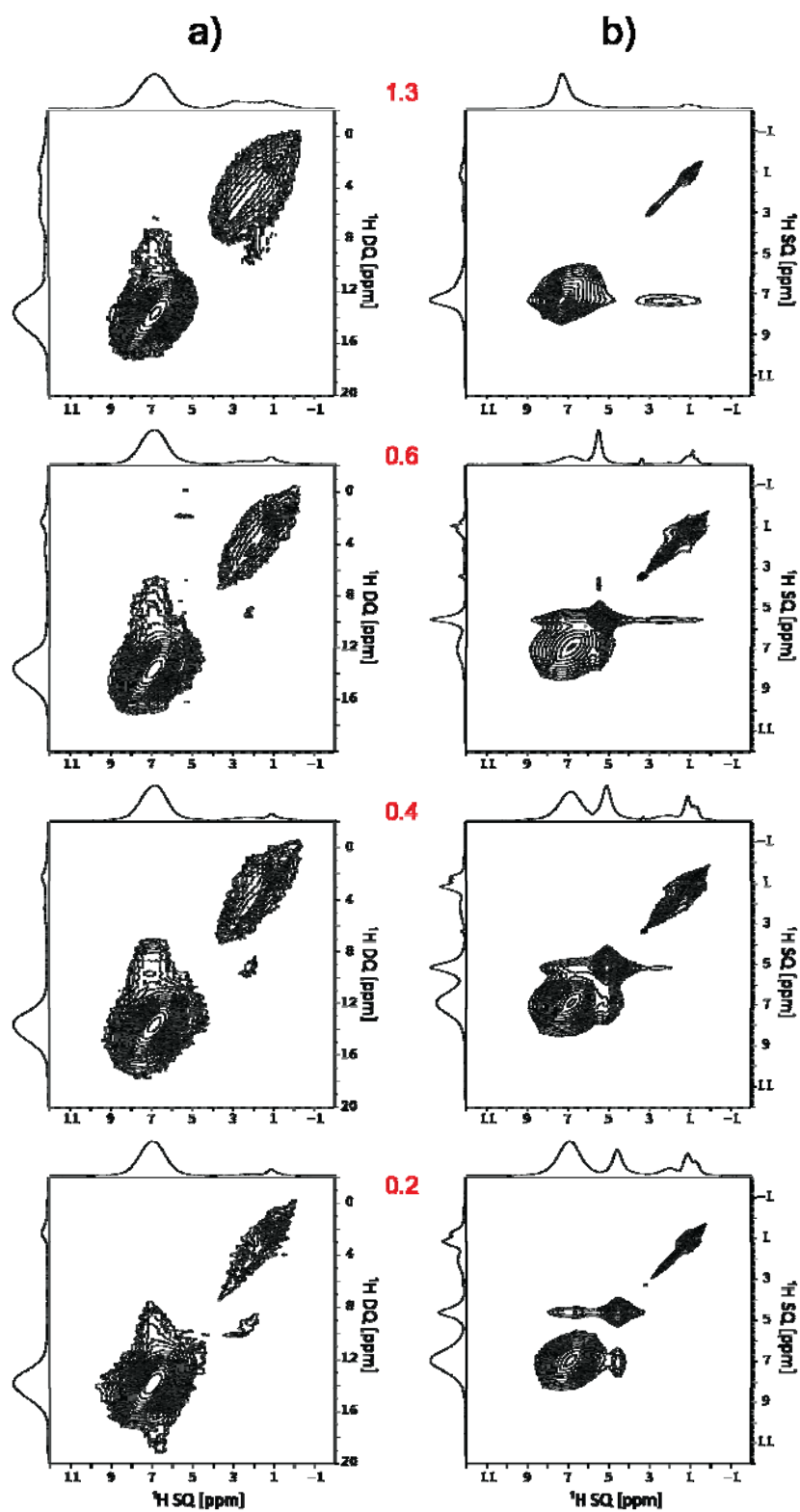


Figure S2 – a) 2D ^1H - ^1H DQ-SQ ^1H MAS NMR and b) 2D ^1H - ^1H spin-exchange NMR spectra of dehydrated propylsulphonic acid-functionalized PMO recorded at the same conditions as the NMR spectra shown in Figures 5 and 6. The NMR spectra were measured to four distinct acid loadings (indicated in the middle in mmol/g).