

## Silica and hybrid silica hollow spheres from imidazolium-based templating agents

Montserrat Trilla,<sup>1</sup> Xavier Cattoën,<sup>2</sup> Christophe Blanc,<sup>3</sup> Michel Wong Chi Man<sup>2,\*</sup> and Roser Pleixats<sup>1,\*</sup>

<sup>1</sup>*Chemistry Department, Universitat Autònoma de Barcelona, Cerdanyola del Vallès, 08193 Barcelona, Spain*

*Fax: (+34)-93-581-1265, e-mail: [roser.pleixats@uab.es](mailto:roser.pleixats@uab.es)*

<sup>2</sup>*Institut Charles Gerhardt Montpellier (UMR5253, CNRS-UM2-ENSCM-UM1) 34296 Montpellier, France. Fax: (+33)-46714-4353, email: [michel.wong-chi-man@enscm.fr](mailto:michel.wong-chi-man@enscm.fr)*

<sup>3</sup>*Laboratoire des Colloïdes, Verres et Nanomatériaux, CNRS, UMR 5587, Université de Montpellier II, 34095 Montpellier, Cédex 05, France.*

## Supporting Information

## Contents

Figure S1	FTIR spectrum of <b>M1</b>
Figure S2	N <sub>2</sub> adsorption-desorption analysis of <b>M1</b>
Figure S3	PXRD of <b>M1</b>
Figure S4	N <sub>2</sub> adsorption-desorption analysis of <b>M2</b>
Figure S5	<sup>29</sup> Si CP-MAS NMR spectrum of <b>H</b>
Figure S6	<sup>13</sup> C CP-MAS NMR spectrum of <b>H</b>
Figure S7	Schematic representation of the mechanism of formation of <b>H</b>

## Figure S1

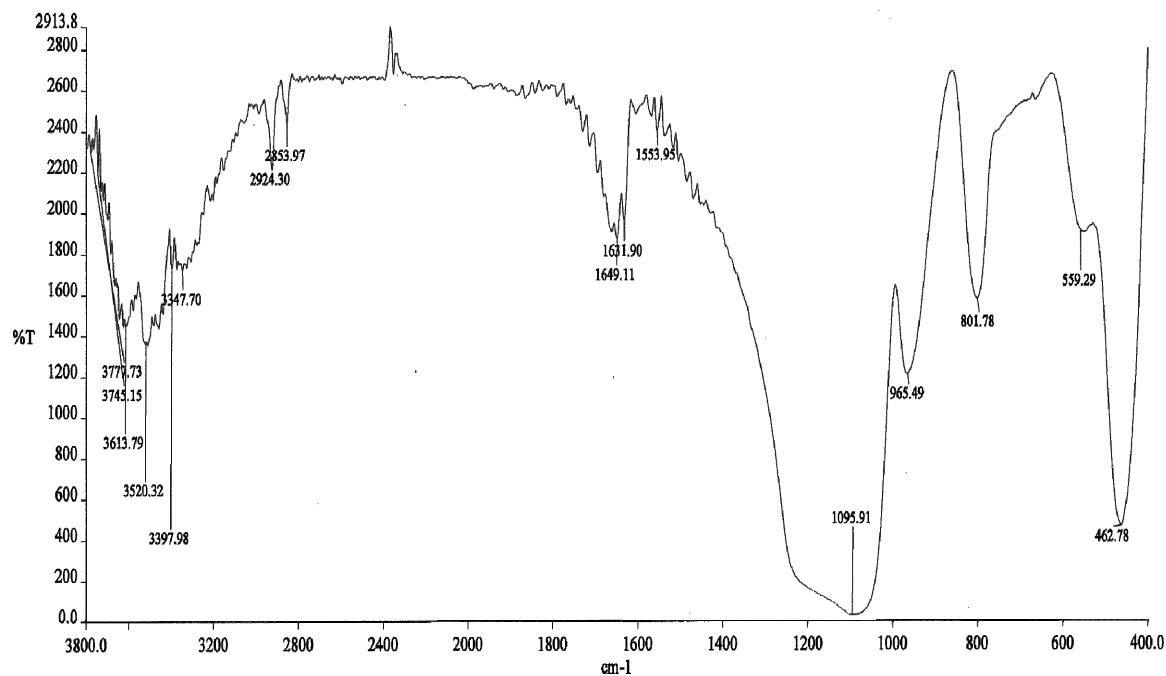


Figure S1: FTIR spectrum of **M1**.

## Figure S2

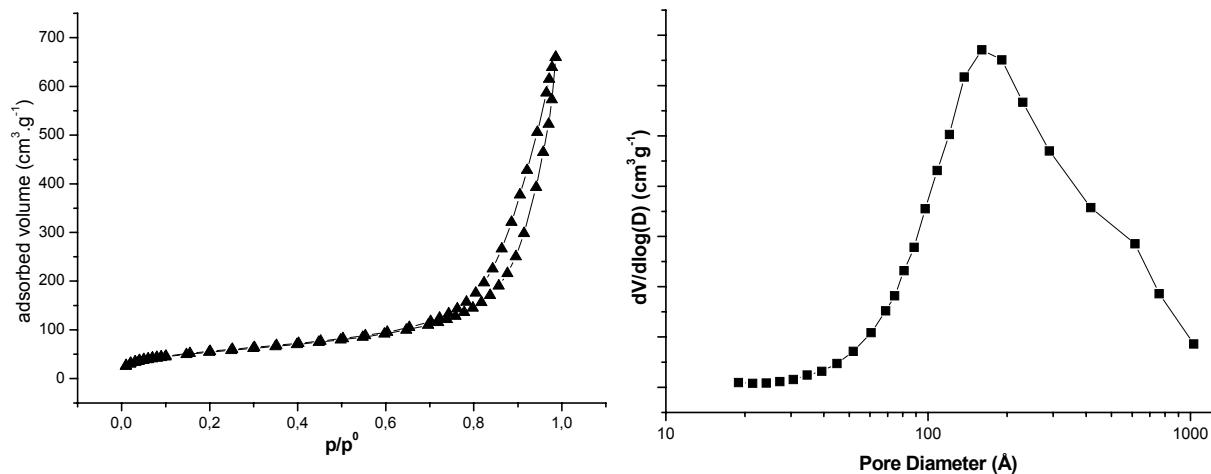


Figure S2: N<sub>2</sub> adsorption-desorption isotherm (left) and pore size distribution (BJH model on the desorption branch) (right) of **M1**.

### Figure S3

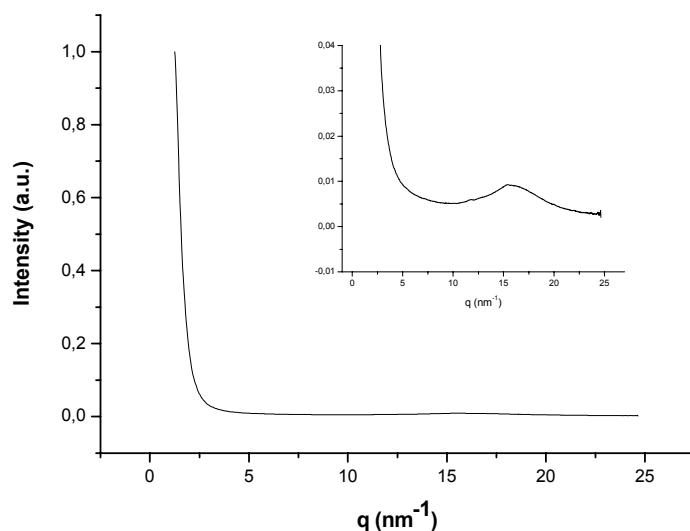


Figure S3: PXRD of silica **M1**.

**Figure S4**

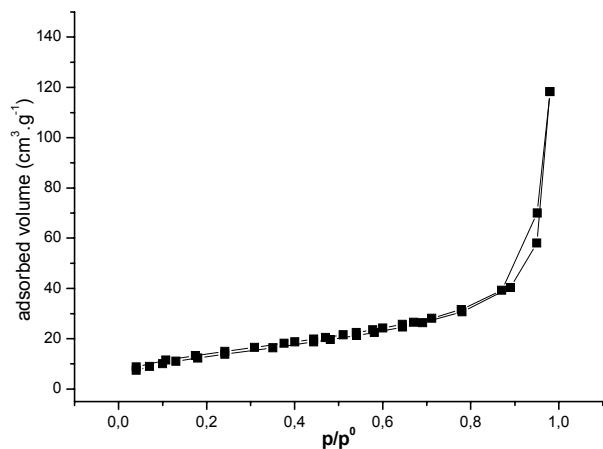


Figure S4: N<sub>2</sub> adsorption-desorption isotherm of **M2**.

## Figure S5

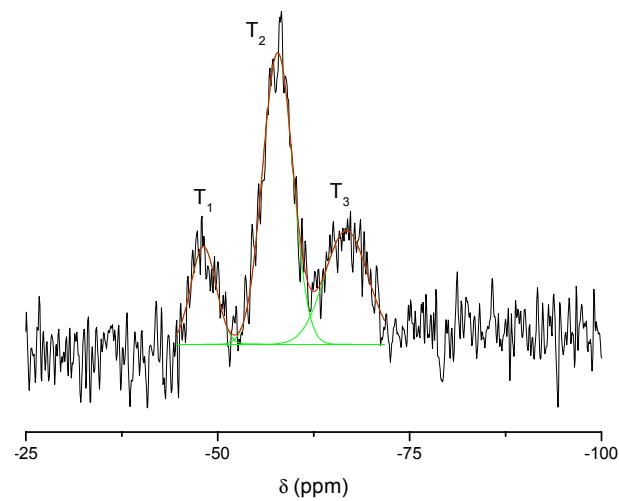


Figure S5:  $^{29}\text{Si}$  solid state CP-MAS NMR spectrum of **H** deconvoluted into 3 components ( $T_1 = \text{C-Si(OH)}_2(\text{OSi})$ ;  $T_2 = \text{C-Si(OH)}(\text{OSi})_2$ ;  $T_3 = \text{C-Si(OSi)}_3$ ).

**Figure S6**

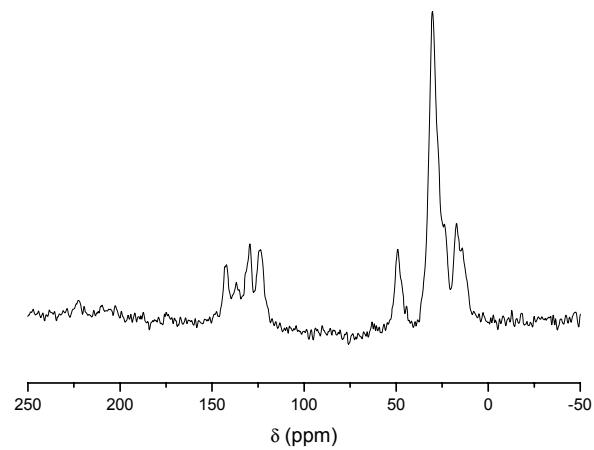


Figure S6: <sup>13</sup>C solid state CP-MAS NMR spectrum of **H**.

## Figure S7

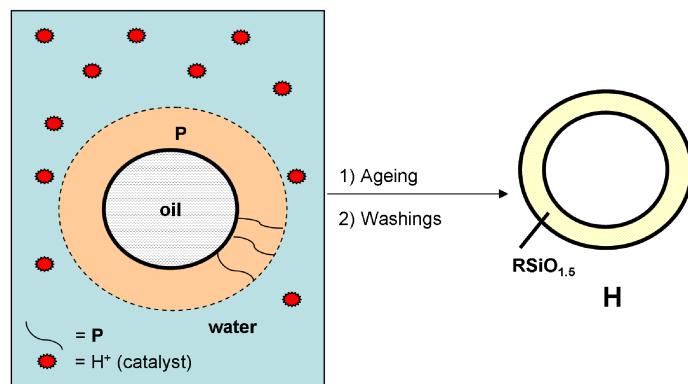


Figure S7: Proposed mechanism of formation of hybrid silica **H**.