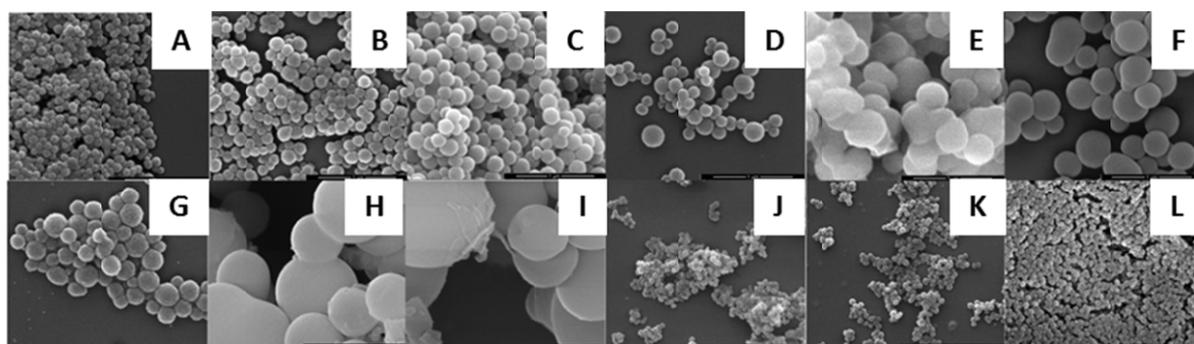


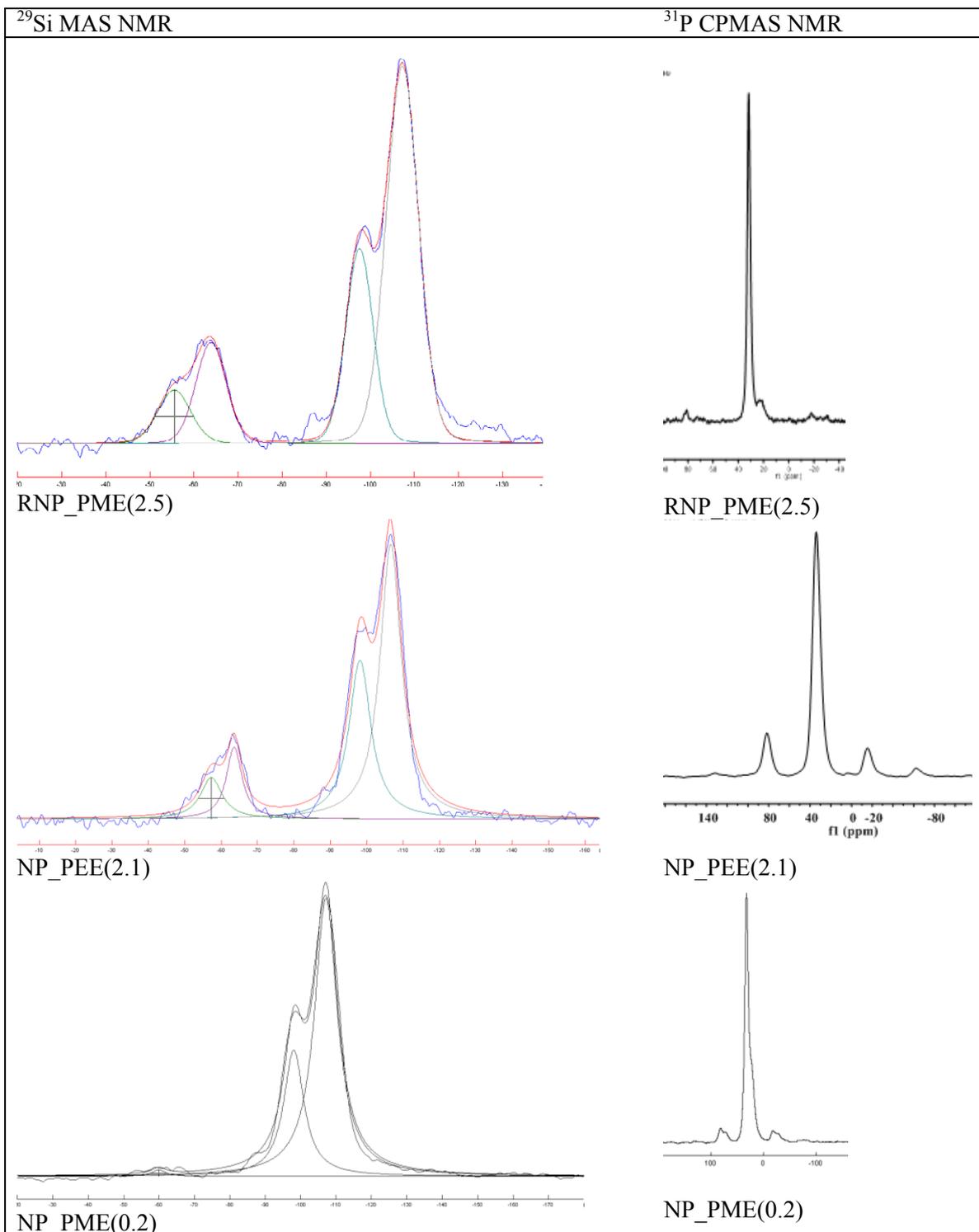
## Supplementary information

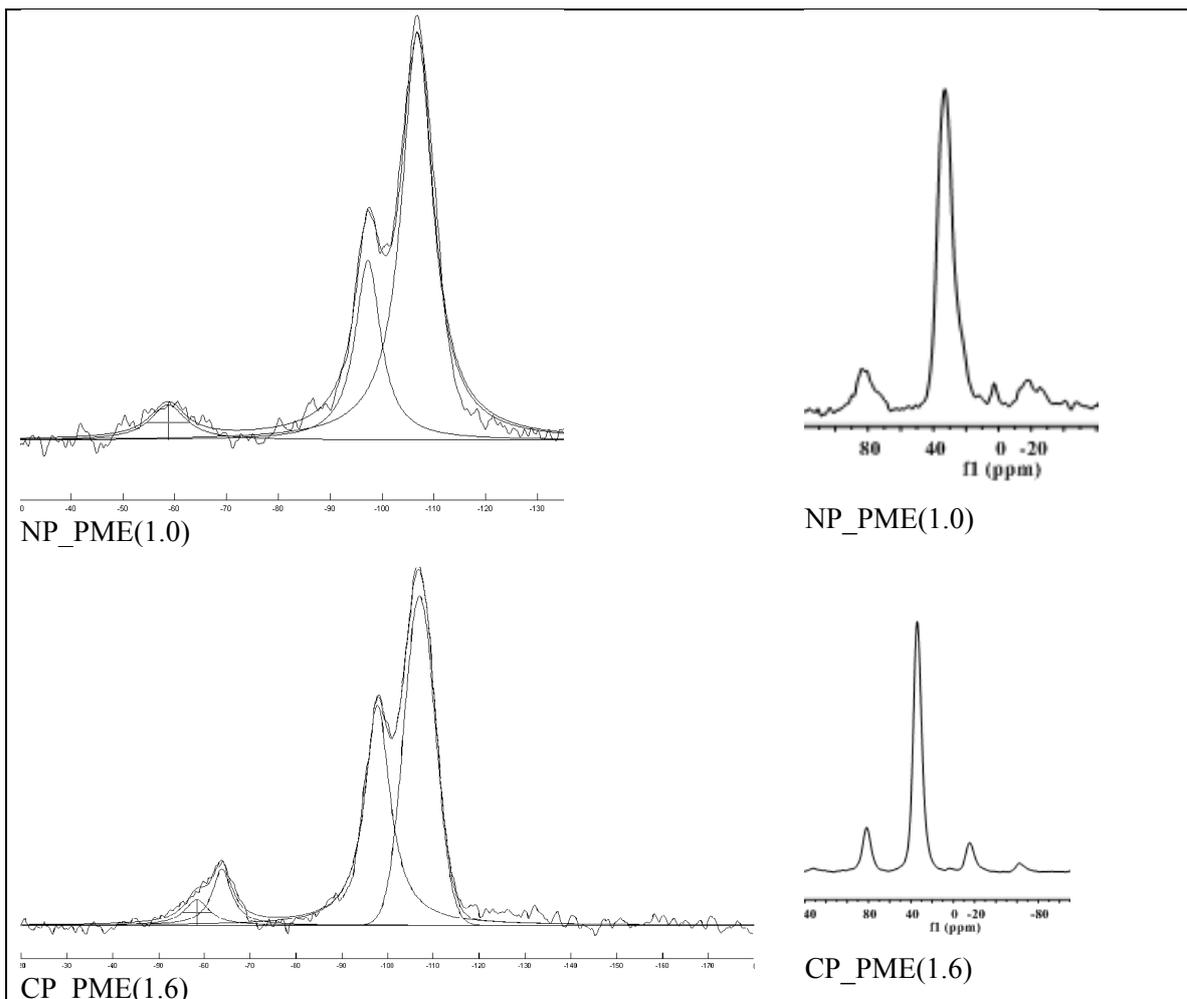
### Supplementary information S1: SEM images of particles produced by variation of formulation 2

A RNP\_PME(2.5), B-D is alternative ethanol mole ratio 0.0, 2.12, 11; E-G alternative reaction temperatures 20, 40, 60°C; H-I alternative CTAB mol ratios 0.05, 0.1; J-L DMPTMS:TEOS was varied from 0.61 in formulation 2 to 0, 0.1, 0.2 (Scale 1  $\mu\text{m}$ )

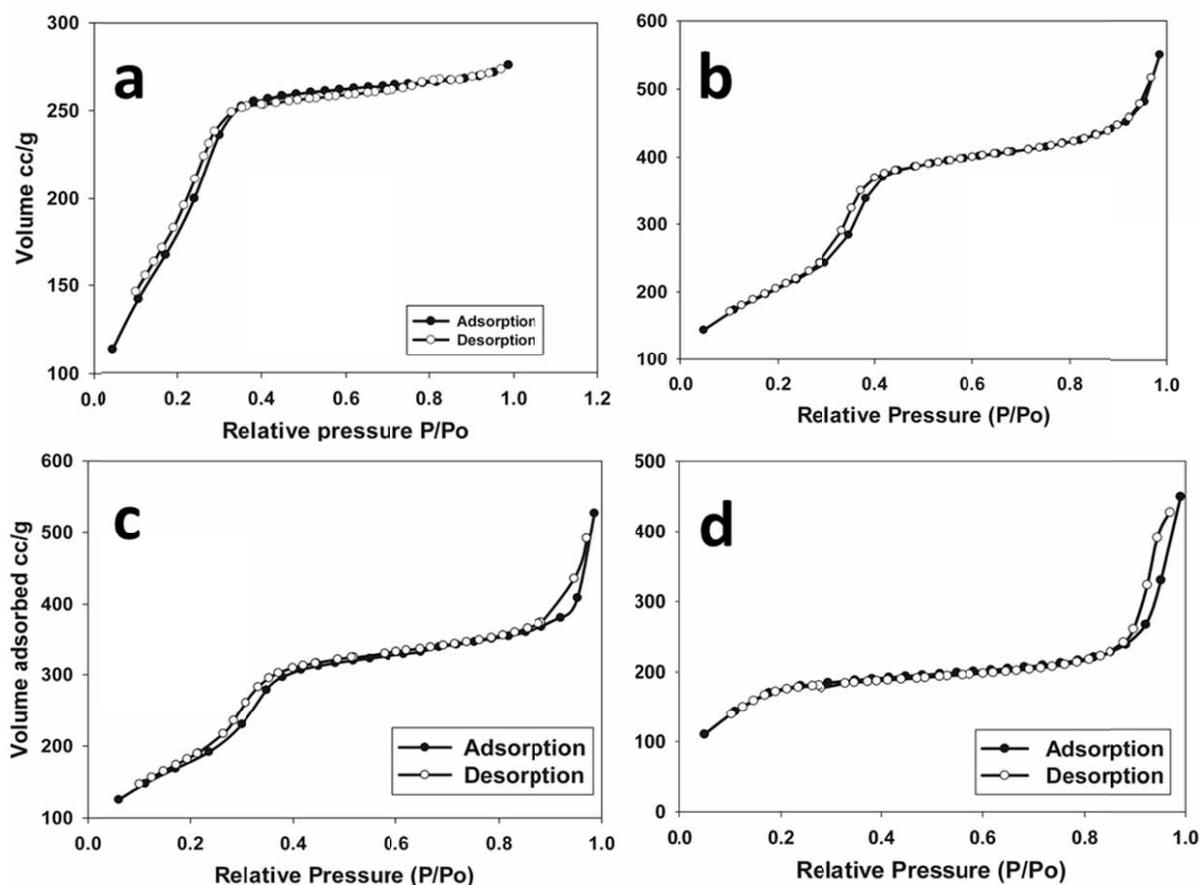


## Supplementary Information S2 Solid state $^{29}\text{Si}$ (showing peak fitting) and $^{31}\text{P}$ NMR

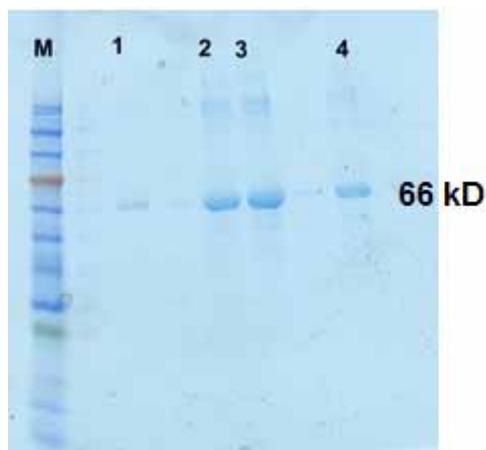




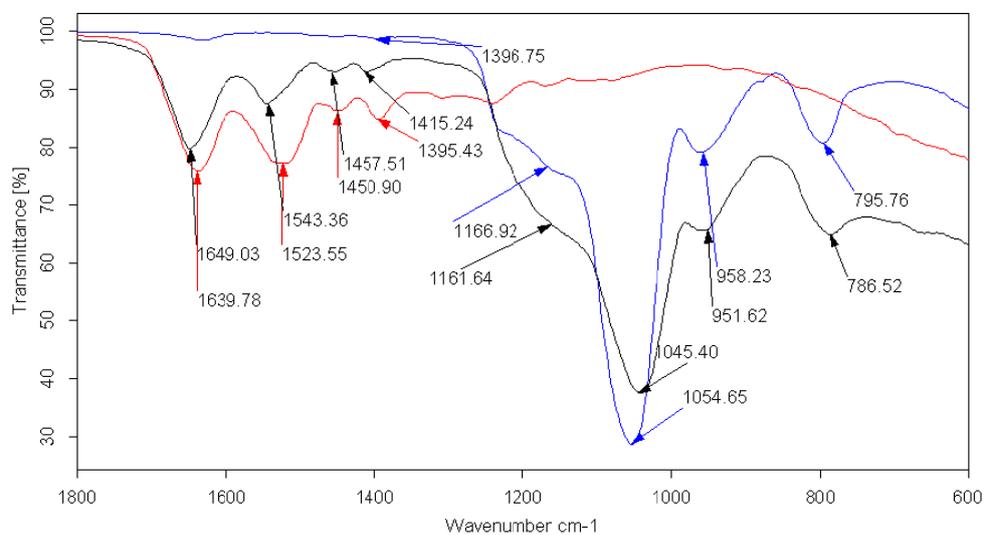
**Supplementary information S3: Nitrogen Adsorption isotherms of**  
**a)CP\_PME(1.6) ; b)NP\_PME(0.2); c)NP\_PME(1.0) d)NP\_PEE(2.1)**



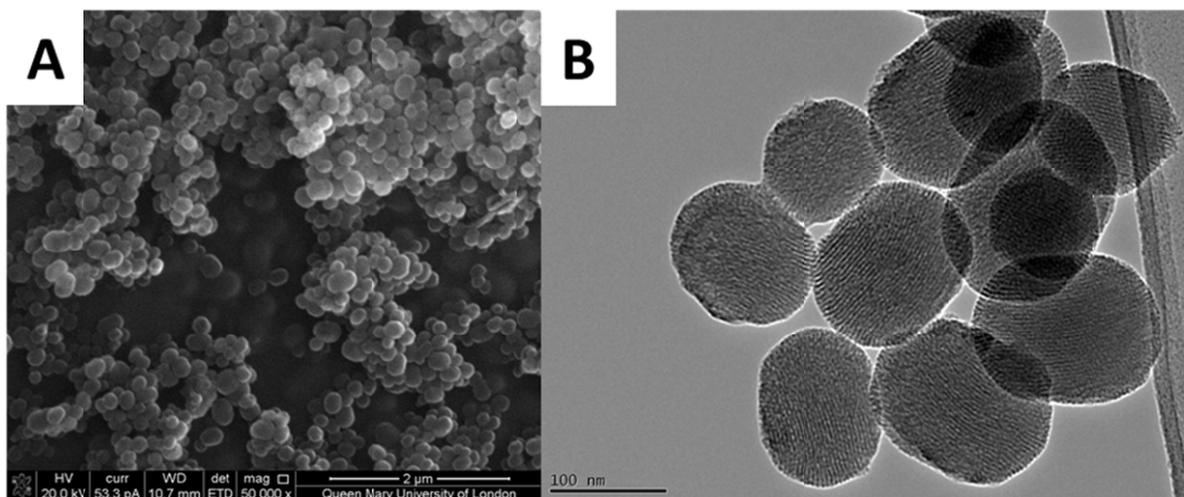
**Supplementary information S4: Gel Electrophoresis of BSA from LHS**  
**Marker(M), 1 BSA, 2 BSA@NP\_PME(0.2); 3 BSA@NP\_PME(1.0); 4**  
**BSA@RNP\_PME(2.5)**



**Supplementary information S5: Infrared spectra of BSA (red) RNP\_PME(2.5) (blue) and BSA@RNP\_PME(2.5) (black)**



**Supplementary Information S6 : SEM (Figure A (Scale 2  $\mu\text{m}$ )) and TEM (Figure B (Scale 100 nm)) of Mesoporous silica nanoparticles(ref 23, main text)**



### Supplementary information S7: Nitrogen sorption isotherm of Mesoporous silica nanoparticles

