SUPPORTING INFORMATION

Table S1: Values from fitting the release data to Korsmeyer-Peppas Equation (**2**).

Sample	*K*	*n*
Free calcein	0.260	0.735
Control	0.226	0.717
DETA	0.178	0.581
TEPA	0.077	0.630
PEHA	0.070	0.678
PAH	0.049	0.613

Table S2: Changing Exponent for Korsmeyer-Peppas Equation with Associated Release Mechanism and DDS Geometry[51]

		Release mechanism		
		Fickian	***Non-Fickian***	***Zero Order***
Geometry	***Thin film***	0.5	0.5<n<1	1
	Cylinder	0.45	0.45<n<1	1
	Sphere	0.43	0.43<n<1	1

Table S3. A summary of physicochemical properties of silica samples tested.

Sample	ζ *mV*	Organic Content[a]	Surface Area[b] *m²/g*	d_{pore}[b] *nm*	Pore volume[b] *cm³/g*
Stöber	-48.7	<2	13	n.a.	0.034
APMSN	+15.4	5	709	2.7	0.49
SAMSN	-22.3	7	474	2.6	0.24
PEHA	+10.8	5	11	broad	0.024
PAH	-18.4	n.d.	55	broad	0.3

[a] *Measured from TGA, reported as wt%.* [b] *Surface area, pore size and pore volume were obtained from nitrogen adsorption and desorption experiments. n.a. indicates not applicable and n.d. stands for not determined.*

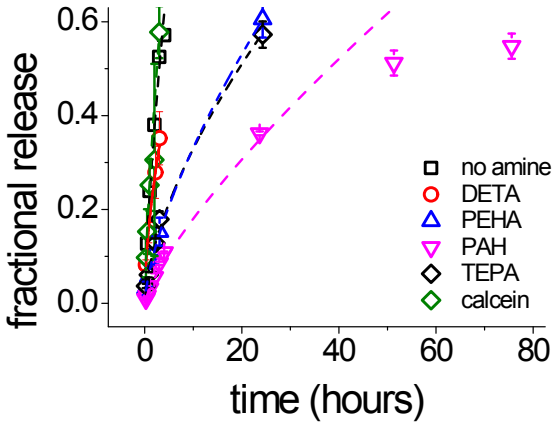

Figure S1. Krosmeyer-Peppas model fitted to 60% of the release data.

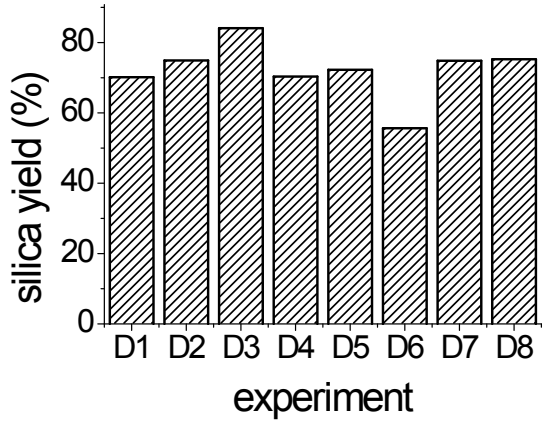

Figure S2. Silica yield obtained from samples prepared in each of the factorial experiments.

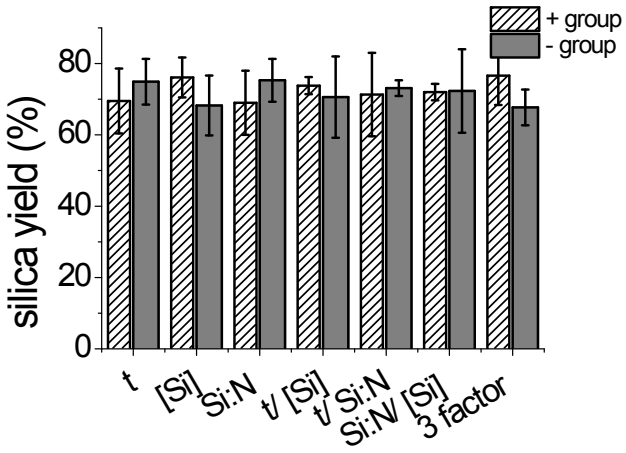

Figure S3. Silica yield obtained in the factorial experiments as a function of synthesis parameters.

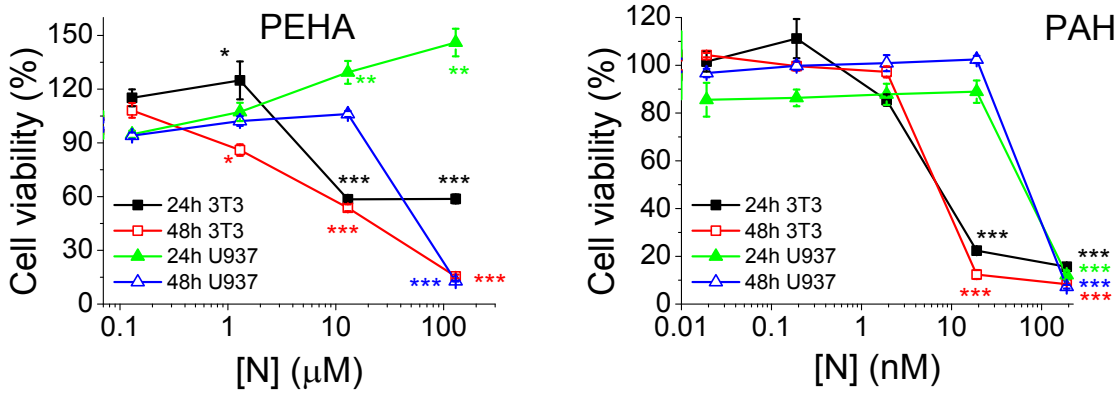

Figure S4. Cell viability after incubation of PEHA (left) or PAH (right) with cell lines 3T3 and U937 (in rested state) after 24 or 48 h.

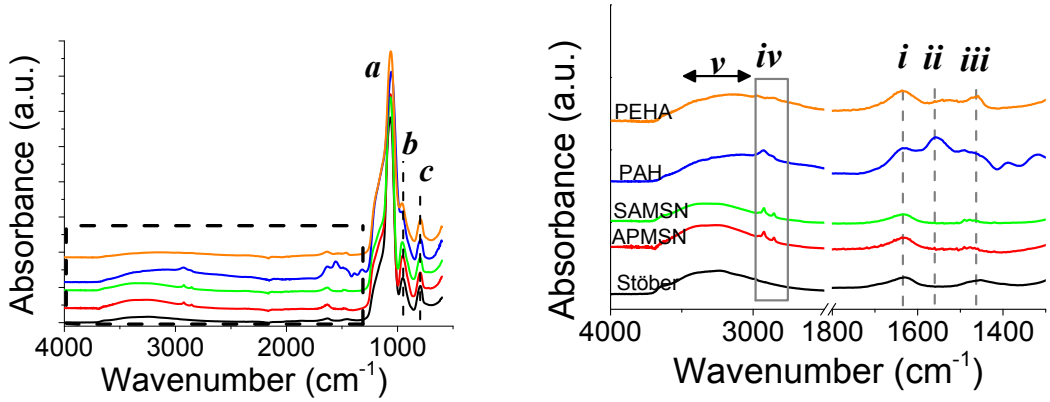

Figure S5. ATR-FTIR spectra for silica samples tested. The region highlighted in the left figure with dashed rectangle is expanded in the figure on right. Silica peaks are marked as follows: **a** Si-O-Si (ν_{as}) ~1080 cm^{-1}, **b** Si-OH 950 cm^{-1}, **c** Si-O-Si (ν_s) 800 cm^{-1}. Following peaks were assigned in the bottom spectra: **i** water ~1635 cm^{-1}, **ii** amines ~1570 cm^{-1}, **iii** C-H / amines 1470 cm^{-1}, **iv** C-H 2930 and 2850 cm^{-1} and **v** –OH from water and Si-OH 3200-3600 cm^{-1}.

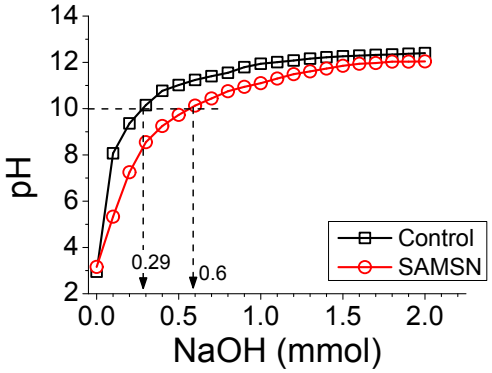

Figure S6. A representative titration result of acidic SAMSN against NaOH. An additional ~0.3 mmol base is required for obtaining same pH in the presence of the SAMSN samples as of the control sample of identical weight, thus confirming the successful acidic functionalisation of MSN.

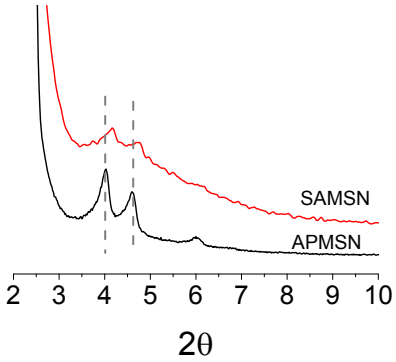

Figure S7. A representative X-ray diffractogram for both MSN samples showing pore structuring. XRD results from other samples did not show any peaks and the data are not shown.

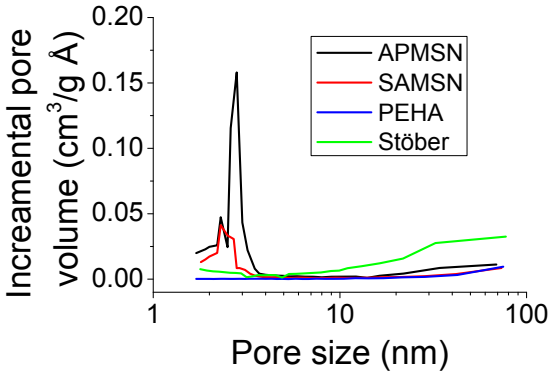

Figure S8. Pore size distribution for selected samples obtained from nitrogen adsorption experiments. GN and Stöber samples exhibit broad distribution and significant amount of inter-particle (external) porosity evident from the presence of macropores.

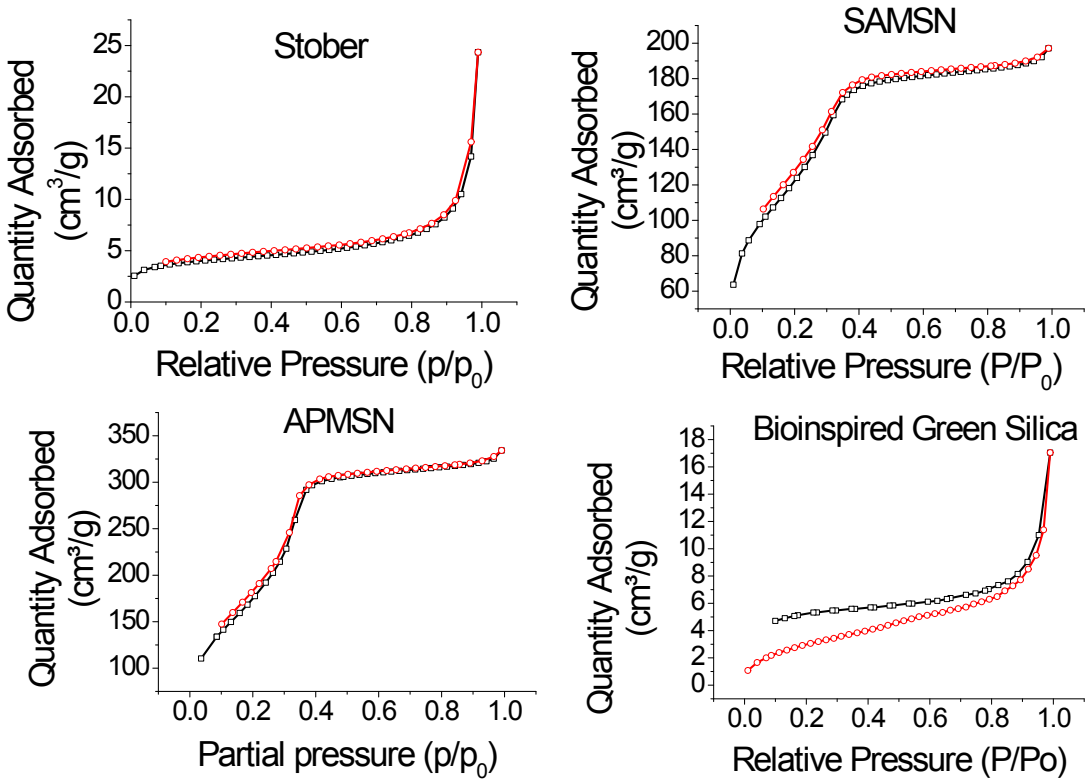

Figure S9. Nitrogen adsorption isotherms for selected silica samples.