Electronic Supplementary Material

Surface hydrophobicity: effect of alkyl chain length and network homogeneity

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Table S1. Details of materials used in experiments.

Compound name	CAS number	Supplier	Product code	Note
Tetraethyl orthosilicate (TEOS)	78-10-4	Sigma Aldrich	131903-1L	Reagent grade, 98%
Trimethoxy(octyl)silane	3069-40-7	Sigma Aldrich	376221-25ML	96%
Triethoxymethylsilane	2031-67-6	Sigma Aldrich	175579-250G	99%
Ethanol	64-17-5	VWR	20821.33	≥99.8%, AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent
Acetone	67-64-1	VWR	20066.330	≥99.8%, AnalaR NORMAPUR® ACS, Reag. Ph. Eur. analytical reagent
Sodium hydroxide	1310-73-2	VWR	28244.295	98.5-100.5%, pellets, AnalaR NORMAPUR® Reag. Ph. Eur. analytical reagent
Cyclohexane	110-82-7	Fisher Chemical	C/8921/15	≥99.8% Analytical reagent grade

Figure S1. Tablet of pristine silica nanoparticle after instantly absorbing the water droplet.

Figure S2. Tablet of methyl-functionalised silica nanoparticle (triethoxymethylsilane : nanoparticle = 200 μL · g^{-1}) after instantly absorbing the water droplet.

Figure S3. Water droplet on tablet of functionalised silica nanoparticle (triethoxymethylsilane : trimethoxy(octyl)silane = 160 μL : 40 μL). The total silane to nanoparticle ratio was kept constant at 200 μL · g^{-1}.

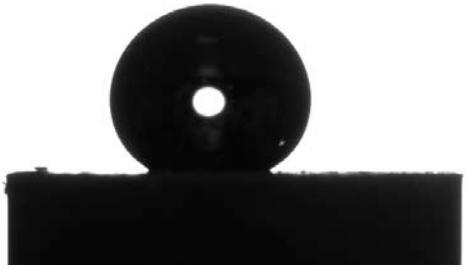

Figure S4. Water droplet on tablet of functionalised silica nanoparticle (triethoxymethylsilane : trimethoxy(octyl)silane = 140 µL : 60 µL). The total silane to nanoparticle ratio was kept constant at 200 $\mu L \cdot g^{-1}$.

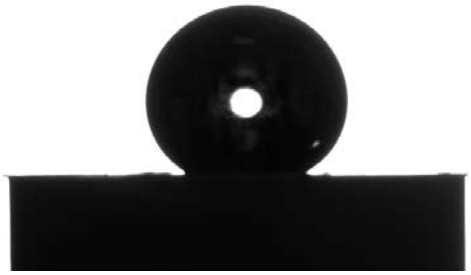

Figure S5. Water droplet on tablet of functionalised silica nanoparticle (triethoxymethylsilane : trimethoxy(octyl)silane = 120 µL : 80 µL). The total silane to nanoparticle ratio was kept constant at 200 $\mu L \cdot g^{-1}$.

Figure S6. Water droplet on tablet of functionalised silica nanoparticle (triethoxymethylsilane : trimethoxy(octyl)silane = 100 µL : 100 µL). The total silane to nanoparticle ratio was kept constant at 200 $\mu L \cdot g^{-1}$.

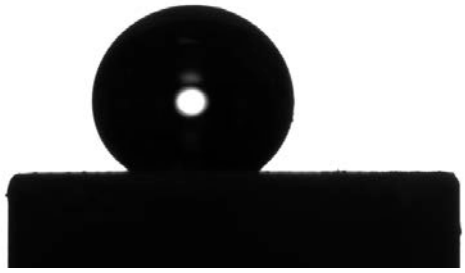

Figure S7. Water droplet on tablet of functionalised silica nanoparticle (triethoxymethylsilane : trimethoxy(octyl)silane = 40 µL : 160 µL). The total silane to nanoparticle ratio was kept constant at 200 $\mu L \cdot g^{-1}$.

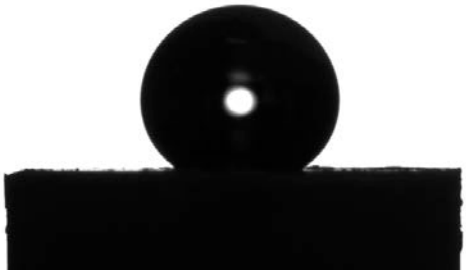

Figure S8. Water droplet on the tablet of octyl-functionalised silica nanoparticle (trimethoxy(octyl)silane : nanoparticle = 200 $\mu L \cdot g^{-1}$)