Electronic Supplementary Information (*ESI*)

Simple N,N′-Dicyclohexylurea adduct of β-alanine can self-assemble to generate nano-morphological versatility in response to different environmental conditions

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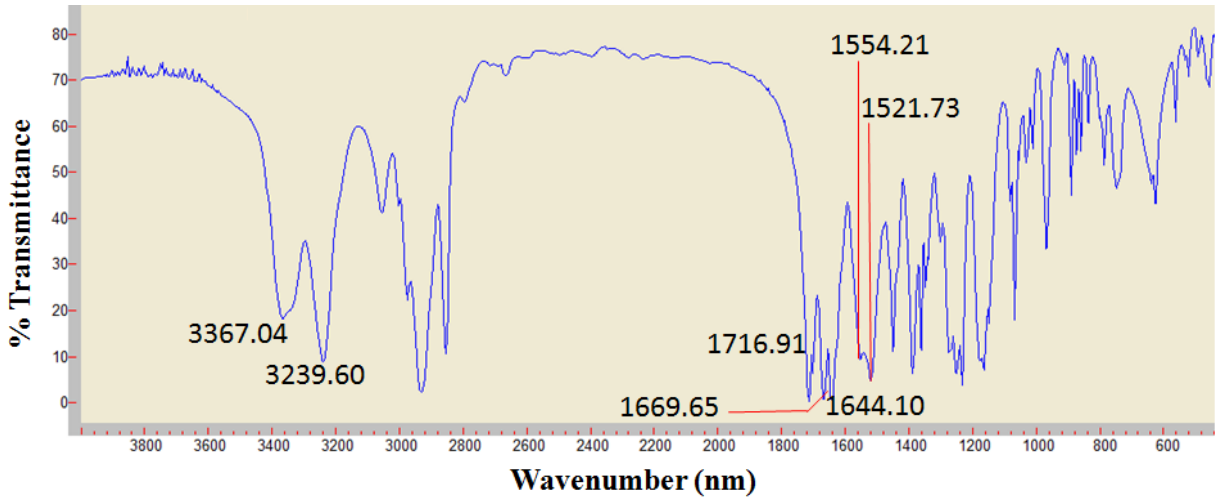
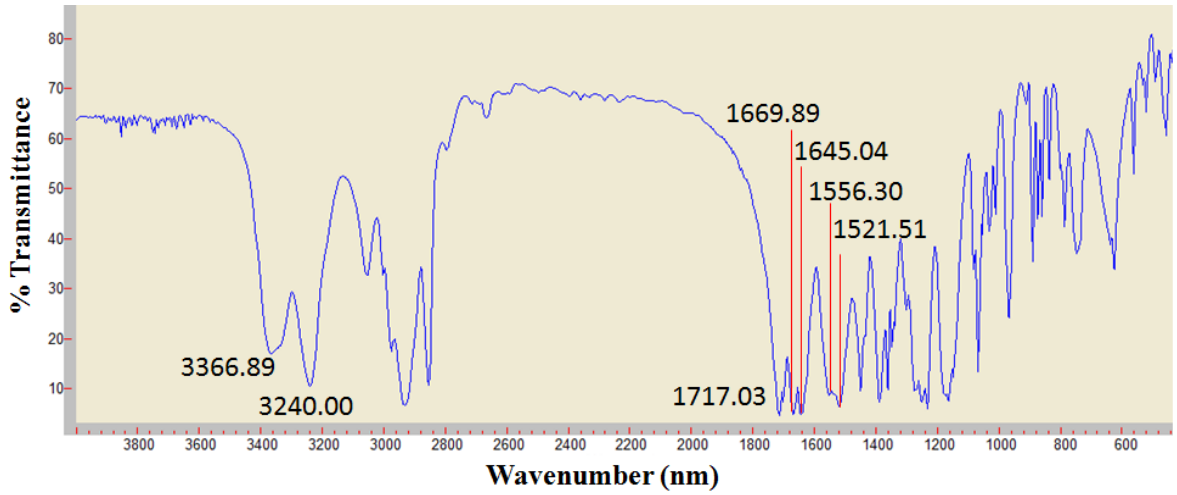


Fourier-transform infrared spectra of as synthesized Boc-β-Ala-N,N′-Dicyclohexylurea.



Fourier-transform infrared spectra of methanol treated Boc-β-Ala-N,N′-Dicyclohexylurea.

Fig. S1 Fourier-transform infrared spectra of as synthesized Boc-β-Ala-N,N′-Dicyclohexylurea and methanol treated Boc-β-Ala-N,N′-Dicyclohexylurea.

Table S1 Contact angle measurement study of de-ionized water on different SAM grown on glass surface.

Type	**Contact angle (^{0})**
-NH2 SAM	50.11
-SH SAM	68.93
-CH_3 SAM	92.06
-C8 SAM	99.4

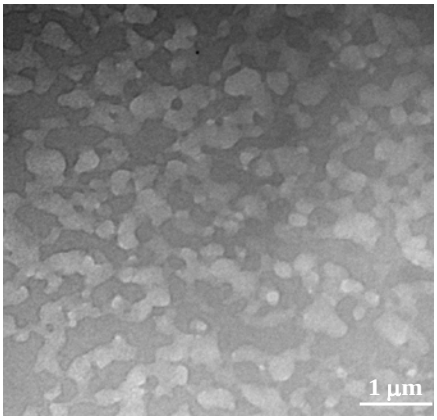
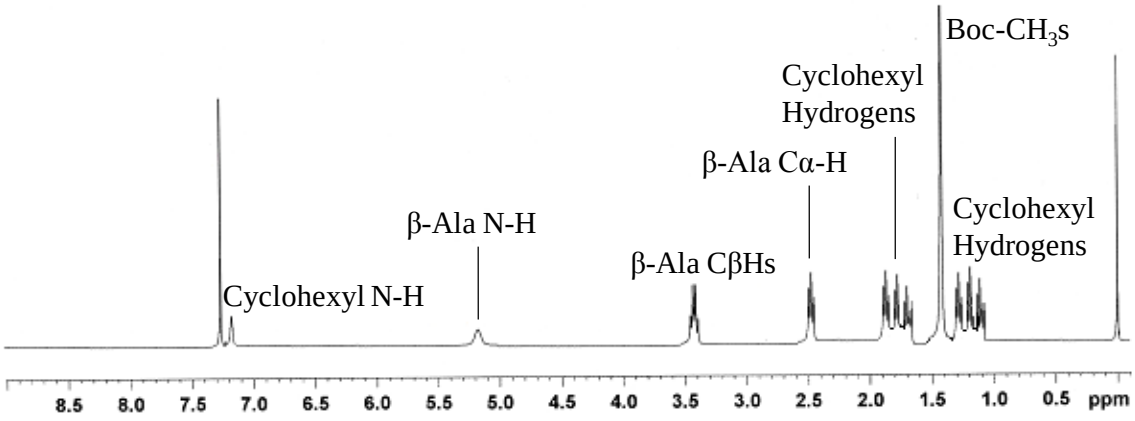
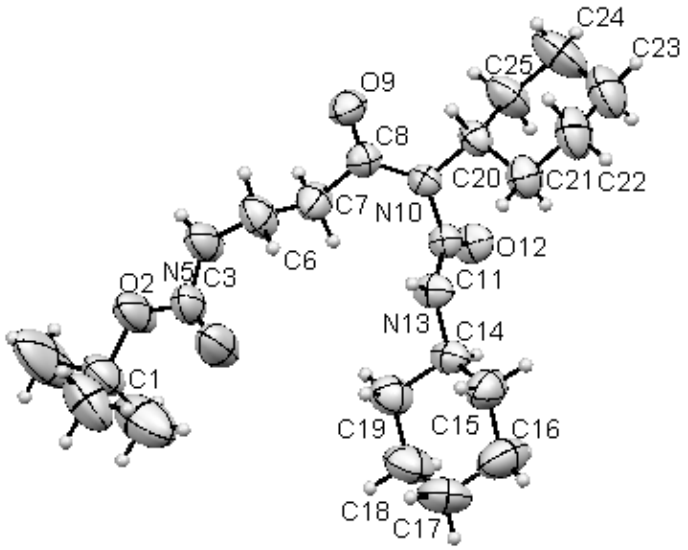


Fig. S2 TEM image showing rupture of Boc-β-Ala-N,N′-Dicyclohexylurea vesicles by addition of bio-compatible Potassium salt (10 mM KCL salt solution).



^{1}H NMR spectrum of Boc-β-Ala-N,N′-Dicyclohexylurea in $CDCl_3$ (300 MHz).

Full crystallographic data of "Boc-β-Ala-N,N′-Dicyclohexylurea" (CCDC 199755) (taken from *J. Chem. Research (S)*, 2003, 502).



An ORTEP representation of the molecular structures of BocNH(CH2)2CON (C6H11)CONH(C6H11), in the solid state. The thermal ellipsoids are shown to the 50% probability level.

***Crystal data*:** C21H37N3O4, Mr = 395.54, monoclinic, *a* = 16.015(10)Å, *b*= 9.068(3)Å, *c* = 17.893(21)Å, β = 114.432(2)°, V = 2365.7(2)Å3, *T* = 294K, space group P21/c, Z = 4, μ = 0.077mm–1, 7459 reflections measured, 3973 unique reflections, *R*int =0.031.

The experimental data were collected at room temperature using a Nonius-Kappa CCD diffractometer with Mo–Kα radiation (λ =0.7107 Å) and the ϕ–ω scan technique [0 ≤ *h* ≤ 18, 0 ≤ 0 ≤ 10, –20 ≤*l* ≤ 18]. The structure was solved by direct methods (SHELXS-97). The non-hydrogen atoms were refined anisotropically using full-matrix least squares on *F*2 (SHELXL-97).The final *R*-value was 0.0624 for 3064 *F*o > 4σ(Fo), wR2 = 0.1813, *S* = 1.066 using 386 parameters and no restraints. The weighting scheme, *w* = 1 / [σ2(*F*o2) + (0.0828* *P*)2 + 0.87 **P*] where *P* = (Max (*F*o 2, 0) + 2 * *F*c 2)/ 3 gave satisfactory analysis of the variance.