

ELECTRONIC SUPPLEMENTARY INFORMATION.

Shaping the molecular assemblies of native and
alkali-modified agars in dilute and concentrated
aqueous media *via* microwave-assisted extraction

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Figure S1. 2D ^1H - ^{13}C HSQC NMR spectrum of NA in D_2O (data obtained at 80 °C with the following conditions: 0.19 s acquisition time, 1.5 s relaxation delay, a spectral width of (5000; 20000) Hz and an average of 128 scans).

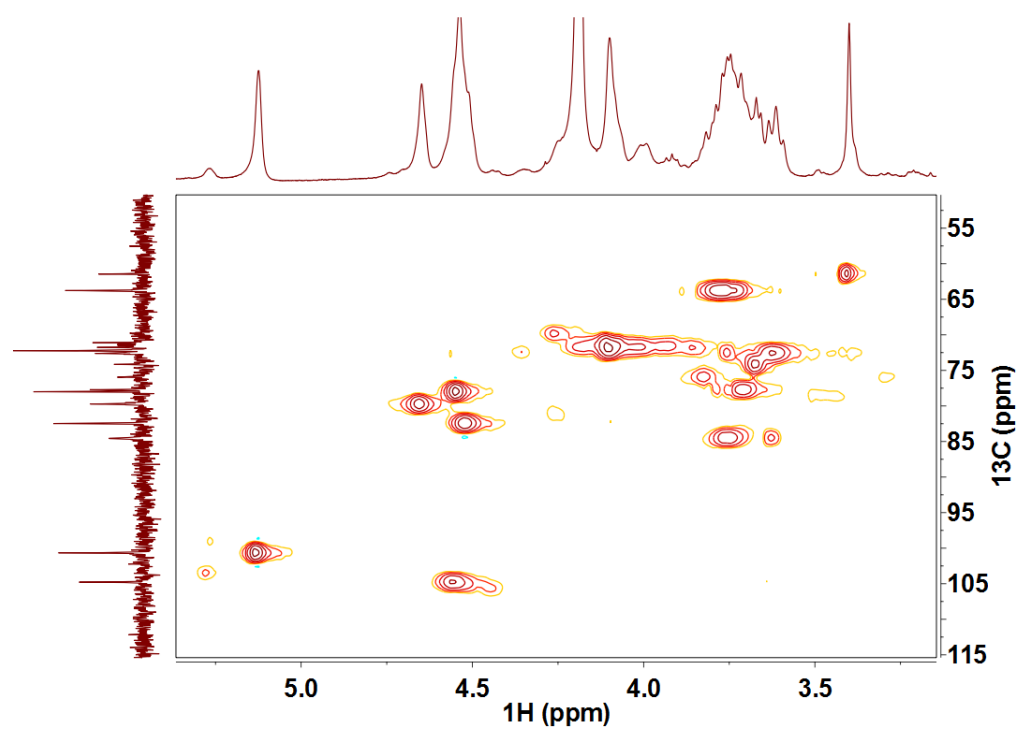


Figure S2. 2D ^1H - ^{13}C HSQC NMR spectrum of AA1 in D_2O (data obtained at 80 °C with the following conditions: 0.19 s acquisition time, 1.5 s relaxation delay, a spectral width of (5000; 20000) Hz and an average of 128 scans).

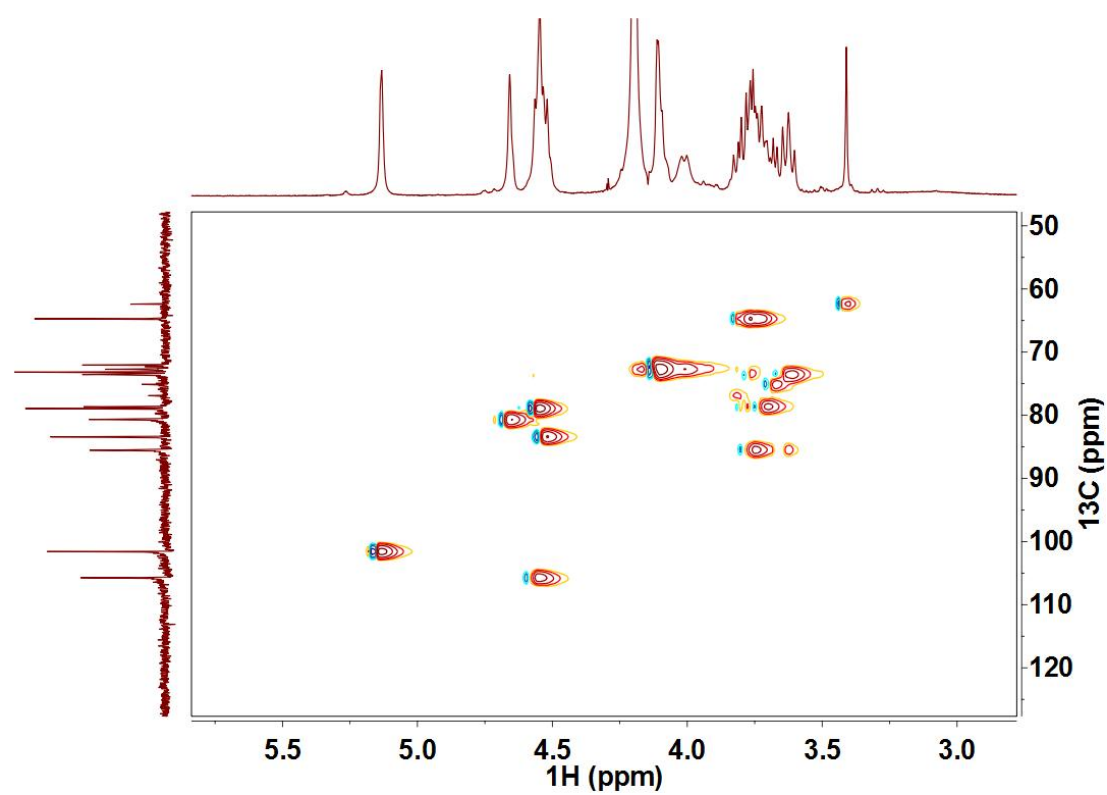


FIGURE S3. 2D ^1H - ^{13}C HSQC NMR spectrum of AA2 in D_2O (data obtained at 80 °C with the following conditions: 0.19 s acquisition time, 1.5 s relaxation delay, a spectral width of (5000; 20000) Hz and an average of 128 scans).

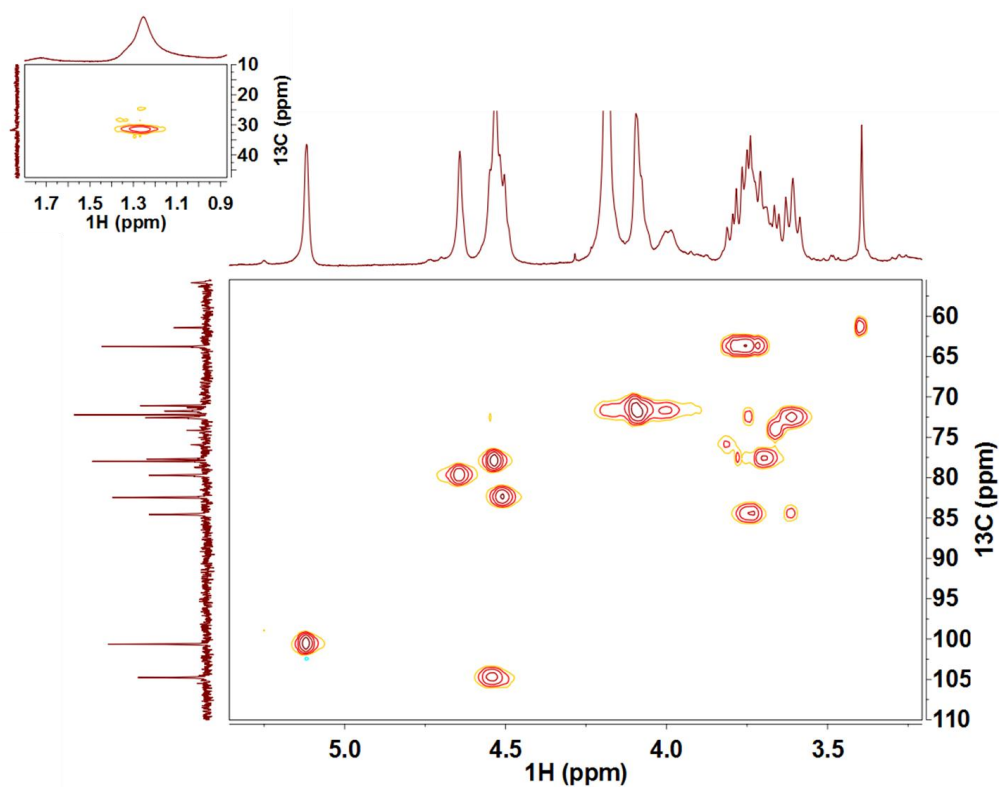


Figure S4. 2D ^1H - ^{13}C HMBC NMR spectrum of AA2 in D_2O (data obtained at 80 °C with the following conditions: 1.42 s acquisition time, 2.0 s relaxation delay, a spectral width of (5000; 23000) Hz and an average of 72 scans).

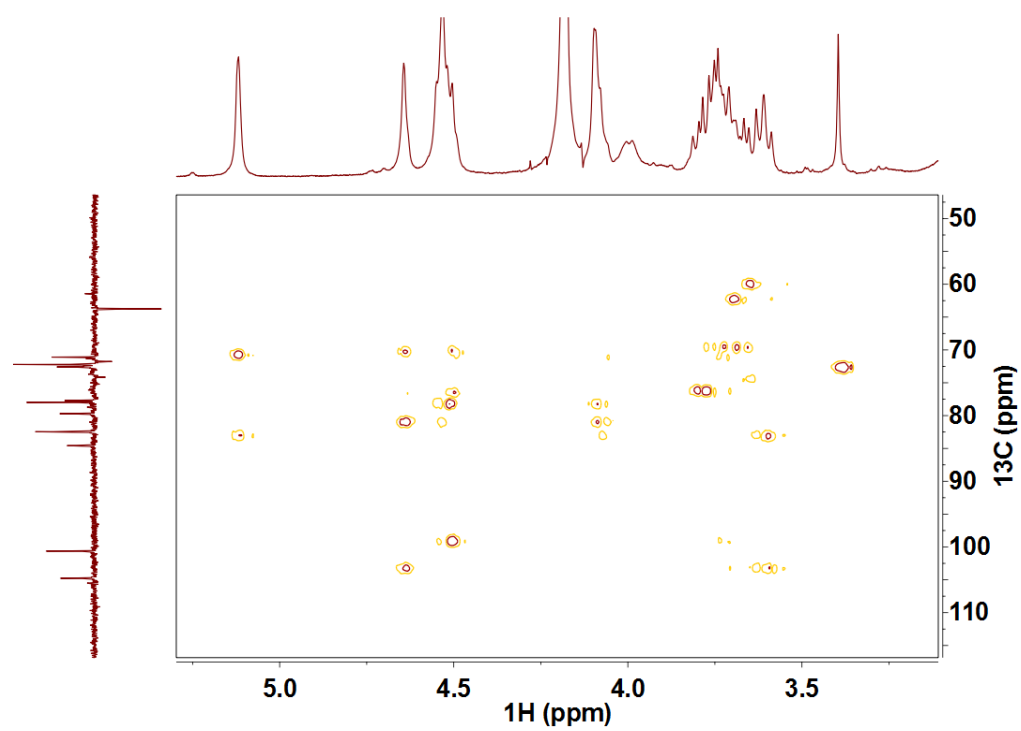


Figure S5. FTIR spectra of NA, AA and commercial agars. Bands assigned to total sulfate esters (1250 cm^{-1} ; a) and LA (930 cm^{-1} ; b) used in the A_{930}/A_{1250} calculation, are marked accordingly.

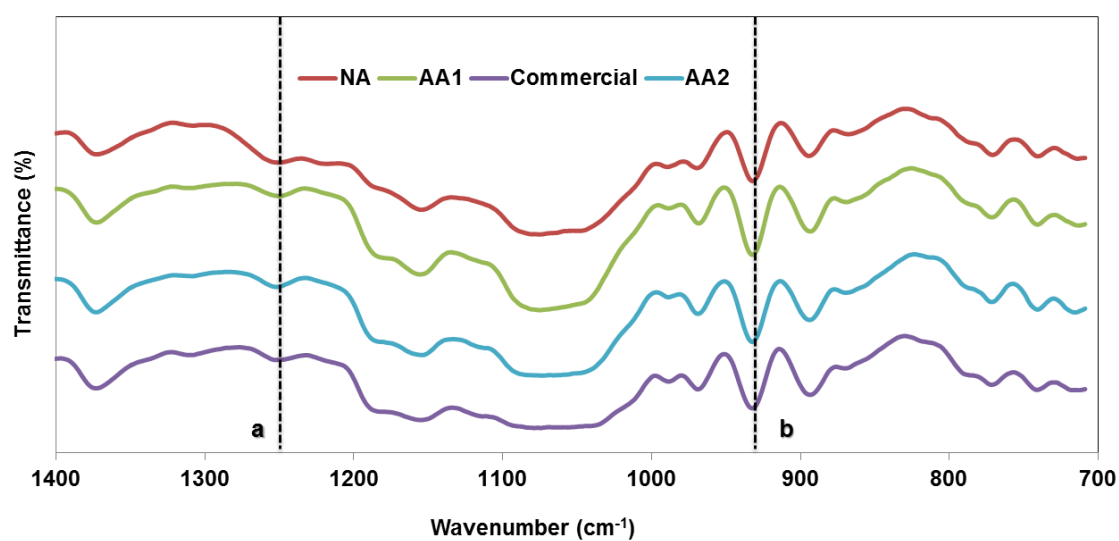


Figure S6. Topographical (**A**) and amplitude (**B**) AFM images of NA structures formed on the 50 $\mu\text{g/mL}$ dilute aqueous solutions when deposited onto mica and air dried. The image size is 5 $\mu\text{m} \times 5 \mu\text{m}$. Examples of NA aggregates are identified by number 1.

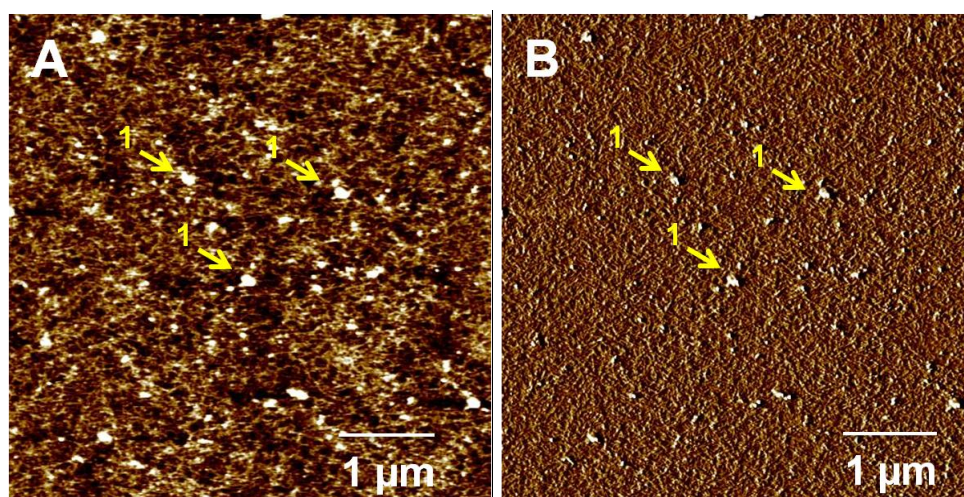


Figure S7. Topographical (A) and amplitude (B) AFM images of AA1 structures formed on the 50 $\mu\text{g/mL}$ dilute aqueous solution deposited on mica and air dried. The image size is 5 $\mu\text{m} \times 5 \mu\text{m}$. Examples of AA1 aggregates are identified by number 1.

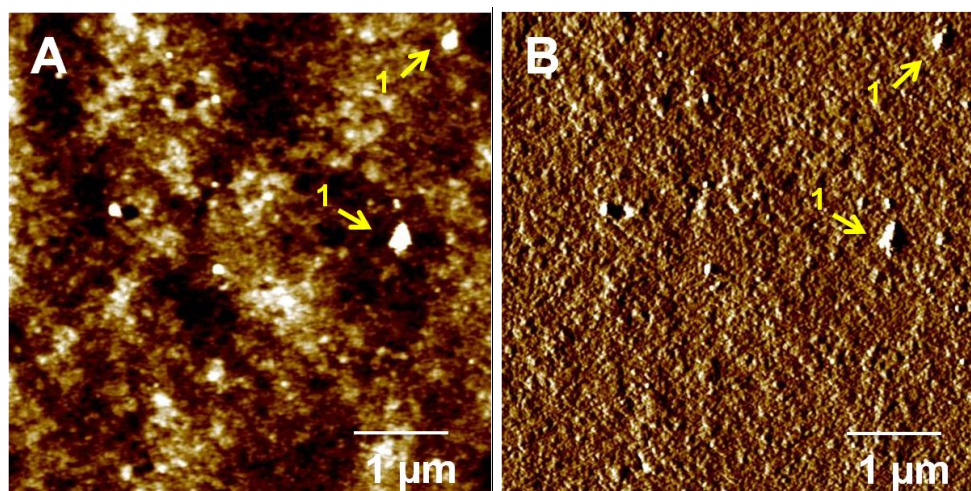


Figure S8. Topographical (A) and amplitude (B) AFM images of AA2 structures formed on the 50 $\mu\text{g/mL}$ dilute aqueous solution deposited on mica and air dried. The image size is 5 $\mu\text{m} \times 5 \mu\text{m}$. Example of AA2 aggregates are identified by number 1.

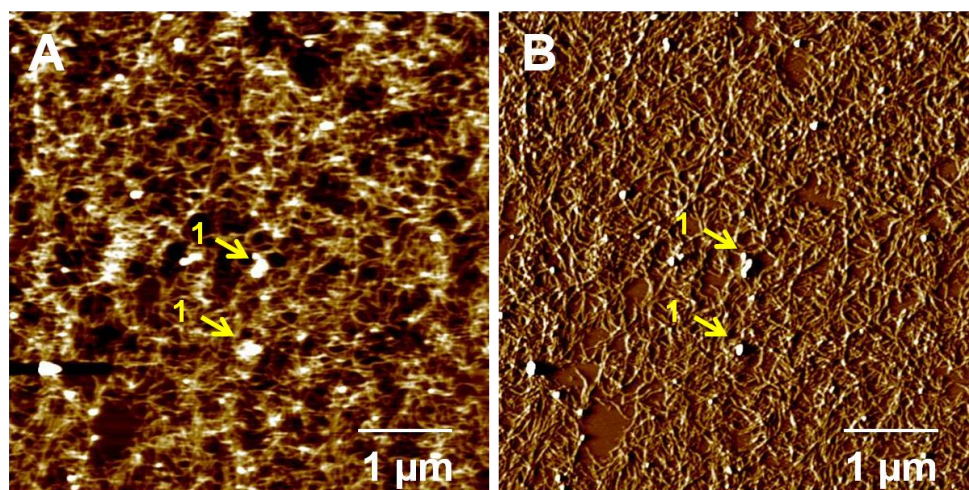


Figure S9. Height profile corresponding to structures along the straight line over the topographic AFM image of NA for the 5 $\mu\text{g/mL}$ solution displayed in Figure 6A/B of the manuscript.

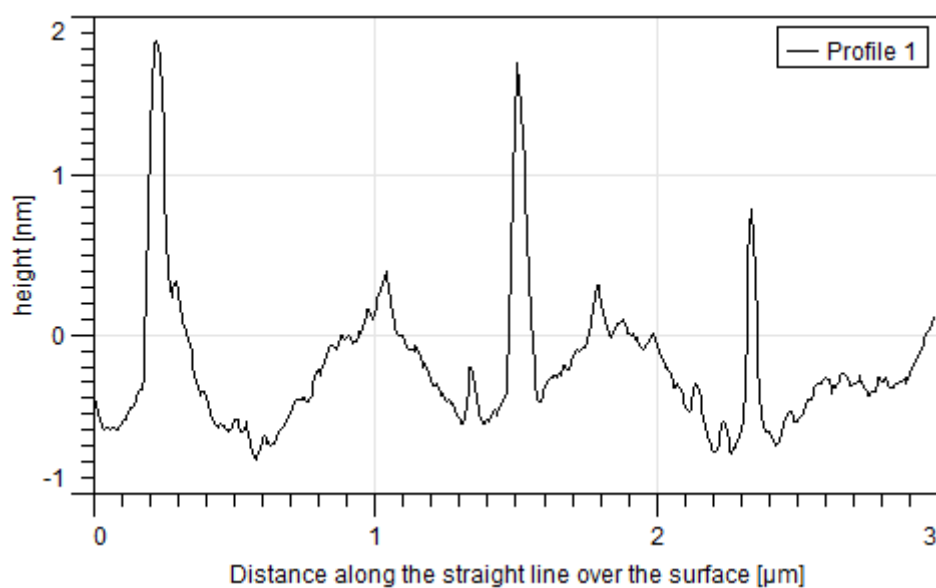


Figure S10. Height profile corresponding to the structures along the straight line over the topographic AFM image of AA1 for the 5 $\mu\text{g}/\text{mL}$ solution displayed in 6C/D of the manuscript.

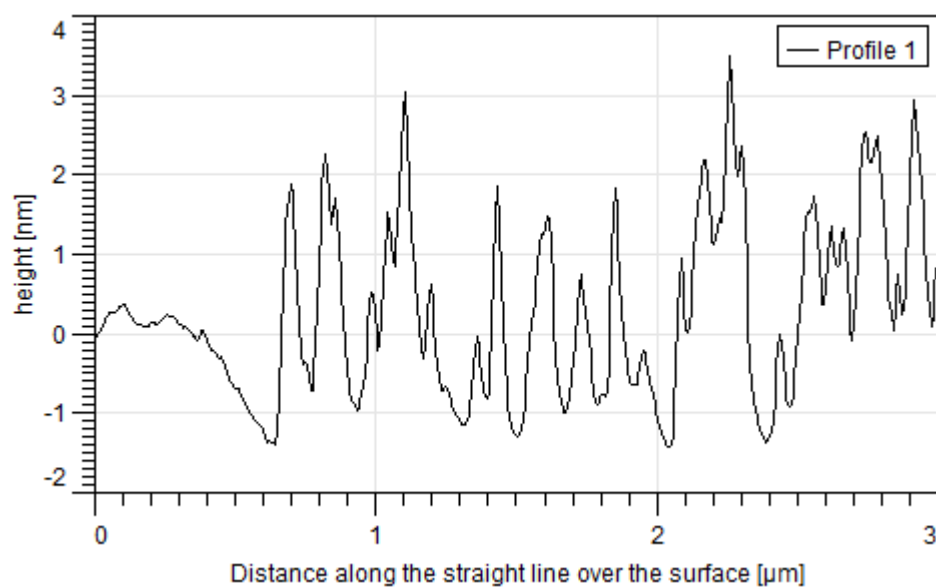


Figure S11. Height profile corresponding to the structures along the straight line over the topographic AFM image of AA2 for the 5 $\mu\text{g}/\text{mL}$ solution displayed in Figure 6E/F of the manuscript.

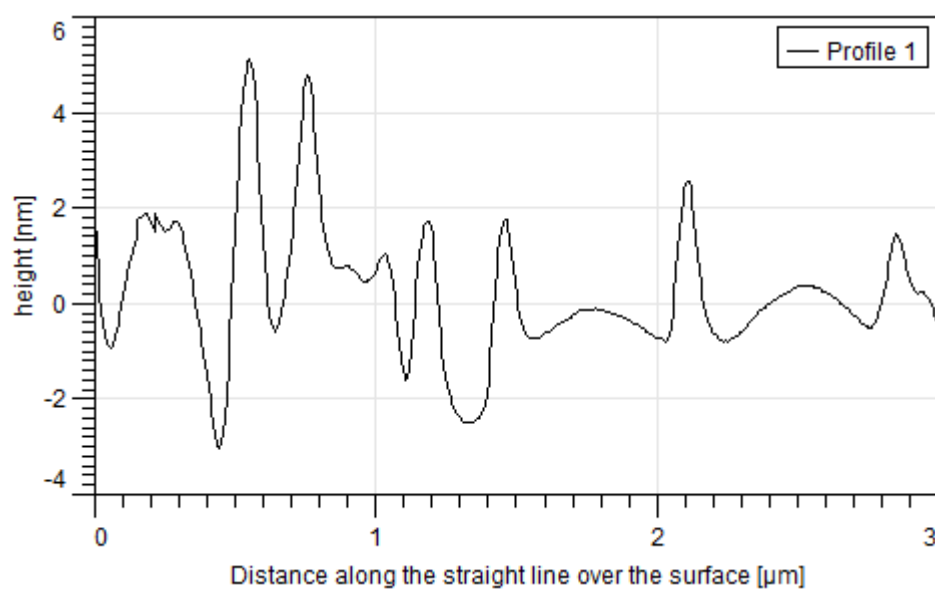


Figure S12. Topographical (A) and amplitude (B) AFM images of NA structures formed on the 10 $\mu\text{g/mL}$ dilute aqueous solution when deposited on mica and air dried. The image size is 3 $\mu\text{m} \times 3 \mu\text{m}$.

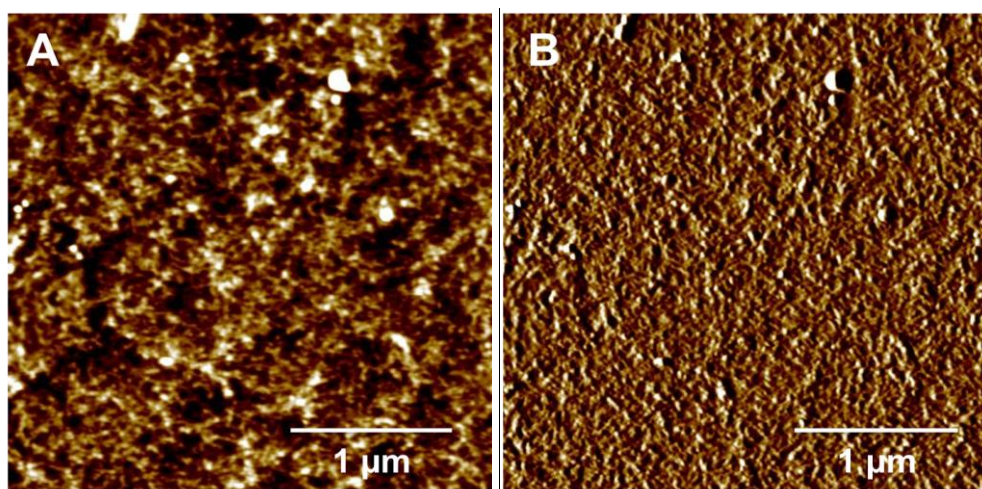


Figure S13. Topographical (A) and amplitude (B) AFM images of AA1 structures formed on the 10 $\mu\text{g/mL}$ dilute aqueous solution when deposited on mica and air dried. The image size is 3 $\mu\text{m} \times 3 \mu\text{m}$.

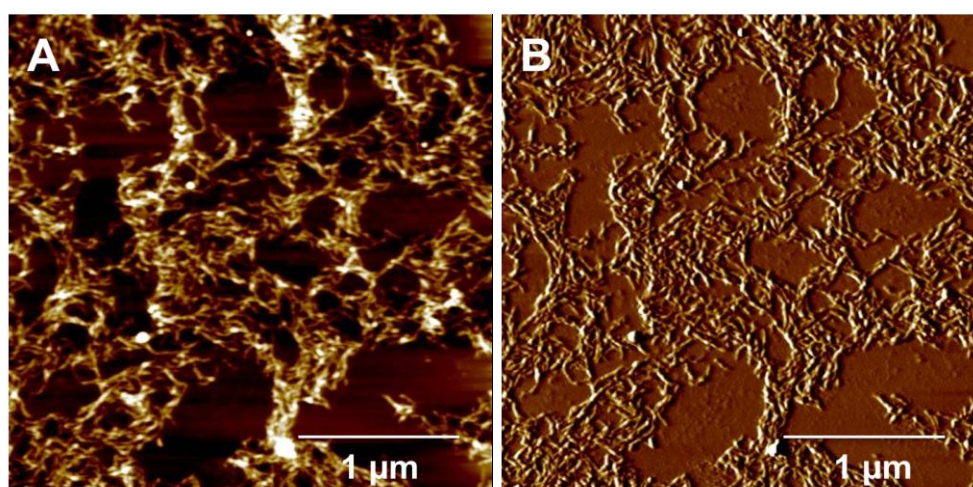


Figure S14. Topographical (A) and amplitude (B) AFM images of NA structures formed on the 100 $\mu\text{g}/\text{mL}$ dilute aqueous solution when deposited on mica and air dried. The image size is 3 $\mu\text{m} \times 3 \mu\text{m}$.

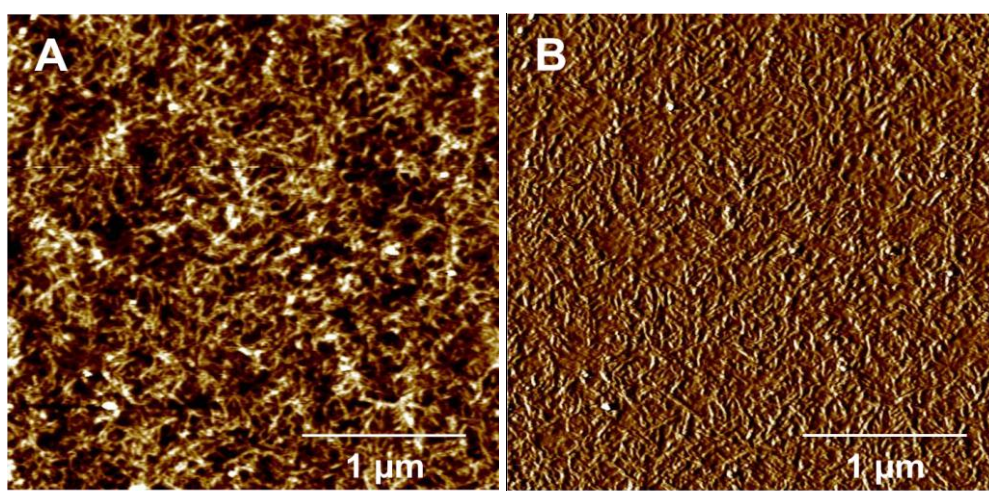


Figure S15. Topographical (A) and amplitude (B) AFM images of AA1 structures formed on the 100 $\mu\text{g/mL}$ dilute aqueous solution when deposited on mica and air dried. The image size is 3 $\mu\text{m} \times 3 \mu\text{m}$.

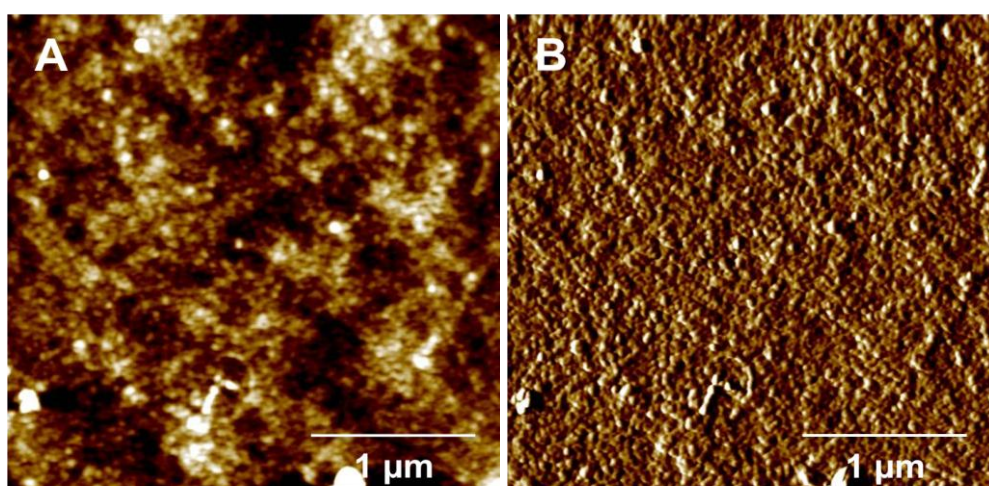


Figure S16. Topographical (A) and amplitude (B) AFM images of AA2 structures formed on the 100 $\mu\text{g}/\text{mL}$ dilute aqueous solution deposited on mica and air dried. The image size is 3 $\mu\text{m} \times 3 \mu\text{m}$.

