

Dimensional Control of Supramolecular Assemblies of Diacetylene-Derived Peptide Gemini Amphiphile: From Spherical Micelles to Foamlike Networks

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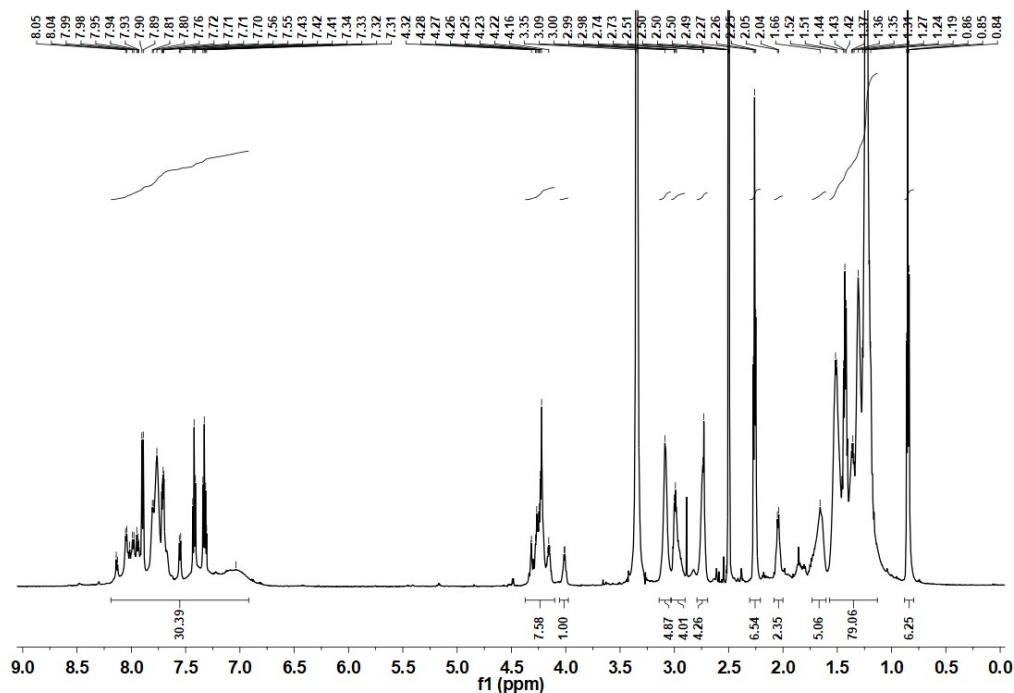


Figure S1. ¹H NMR of DA₂P-Fmoc in DMSO-d₆ recorded at 600 MHz.

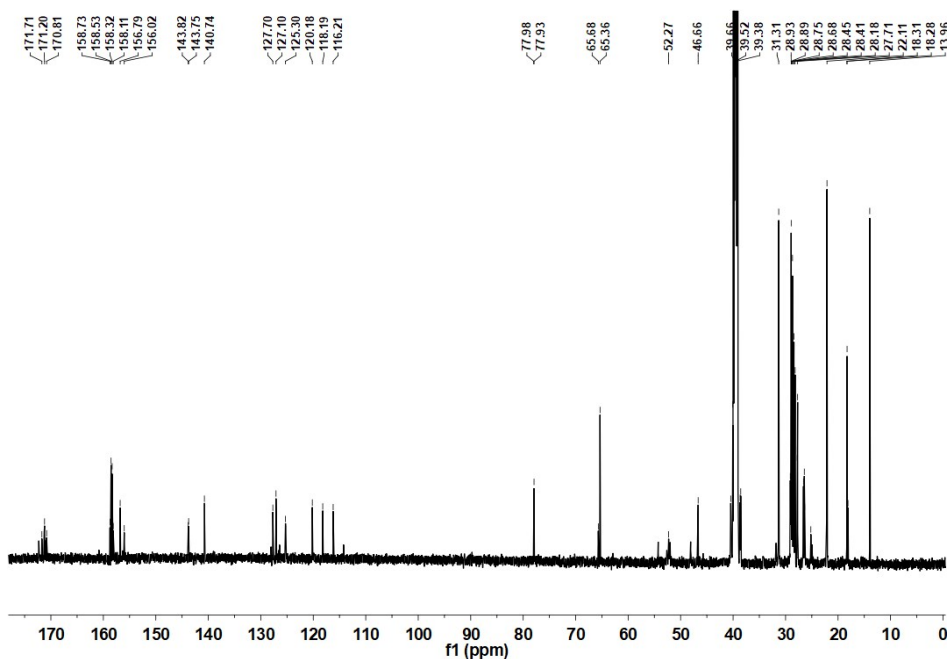


Figure S2. ¹³C NMR of DA₂P-Fmoc in DMSO-d₆ recorded at 151 MHz.

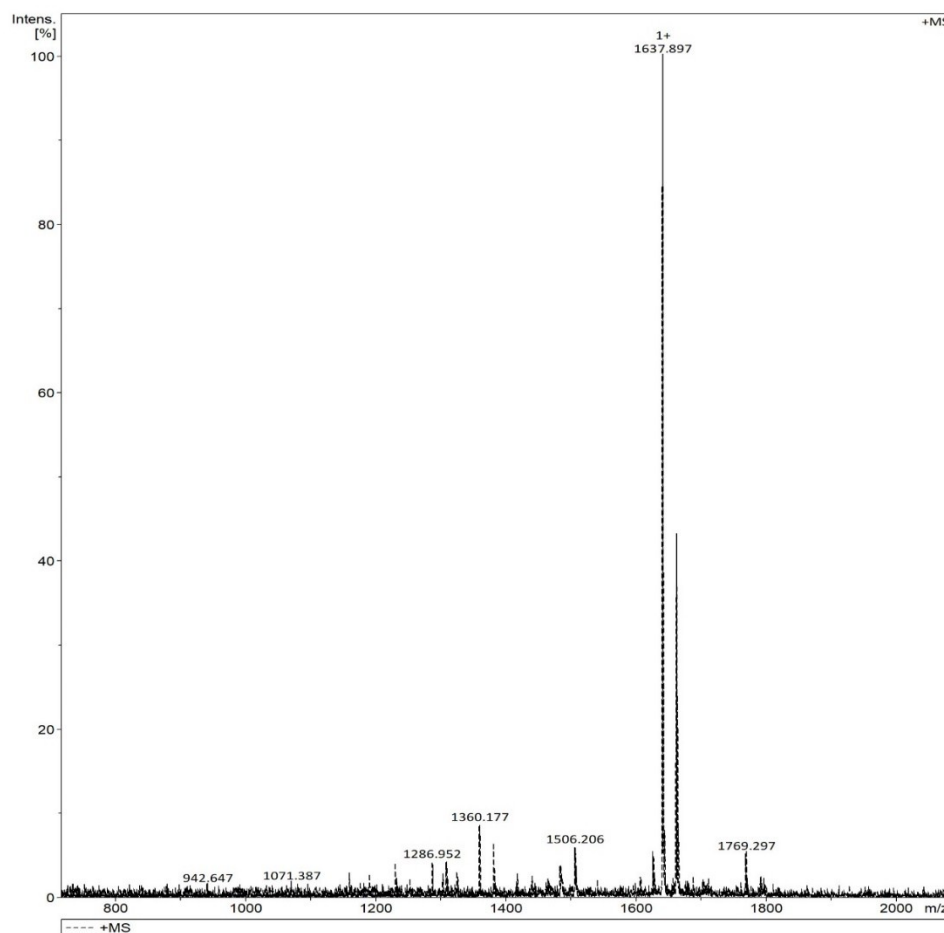


Figure S3. MALDI-TOF-MS spectrum of **DA₂P-Fmoc** m/z calculated for C₉₃H₁₅₀N₁₆O₉ 1636.29, found [M + H]⁺ 1637.90.

Sample preparation for AFM and TEM measurements

AFM images were obtained in tapping mode using a NanoDrive Controller with an Innova Scanning Probe Microscope (Veeco Germany, Mannheim) and N-type silicon cantilever (AC 160TS OLYMPUS). A drop of prepared sample solution (6 μ L, pure water or methanol) was placed on freshly cleaved mica and then spin-coated at a speed of 3000 rad/min for 2 min. The AFM data were analysed using Gwiddion-2.20 software. TEM images were obtained using a CM 200 FEG (Phillips Company). A drop of prepared sample solution was placed on 400-mesh formvar copper grid coated with carbon. After 2 min, the grid was tapped with a

filter paper to remove remaining solvent from the surface. Negative staining was performed by addition of a drop of an aqueous solution of uranyl acetate (2%) onto the copper grid. After 1 min, the liquid on the surface of the grid was removed by tapping it with a filter paper.

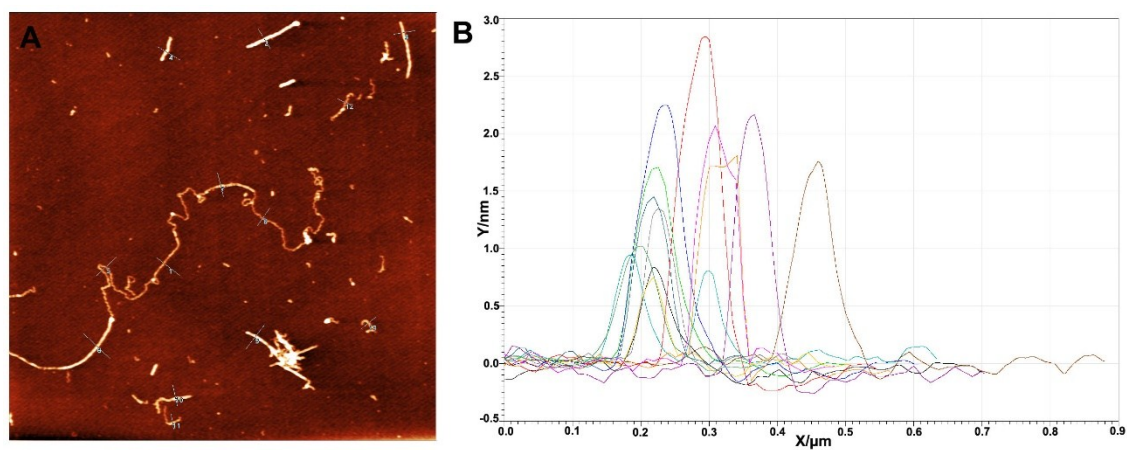


Figure S4. (A) Height image and (B) section analysis of AFM measurement of **DA₂P-Fmoc** assemblies at the concentration of 0.2 mM with an aging time up to 1 month.

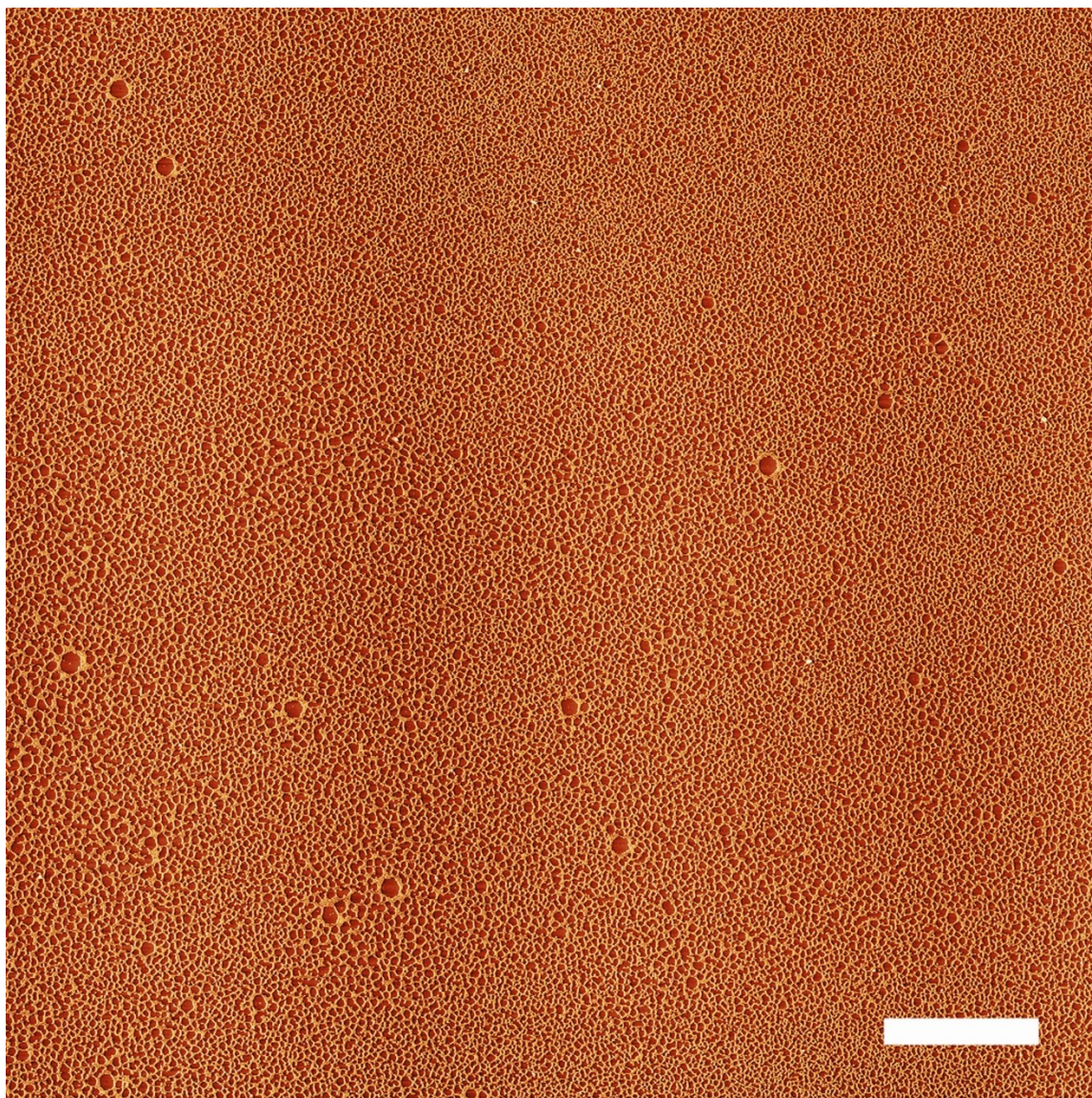


Figure S5. (A) AFM image in a large area ($70 \times 70 \mu\text{m}$) of **DA₂P-Fmoc** assemblies at the concentration of 1 mM in methanol with an aging time of 10 days. Scale bar is 10 μm .

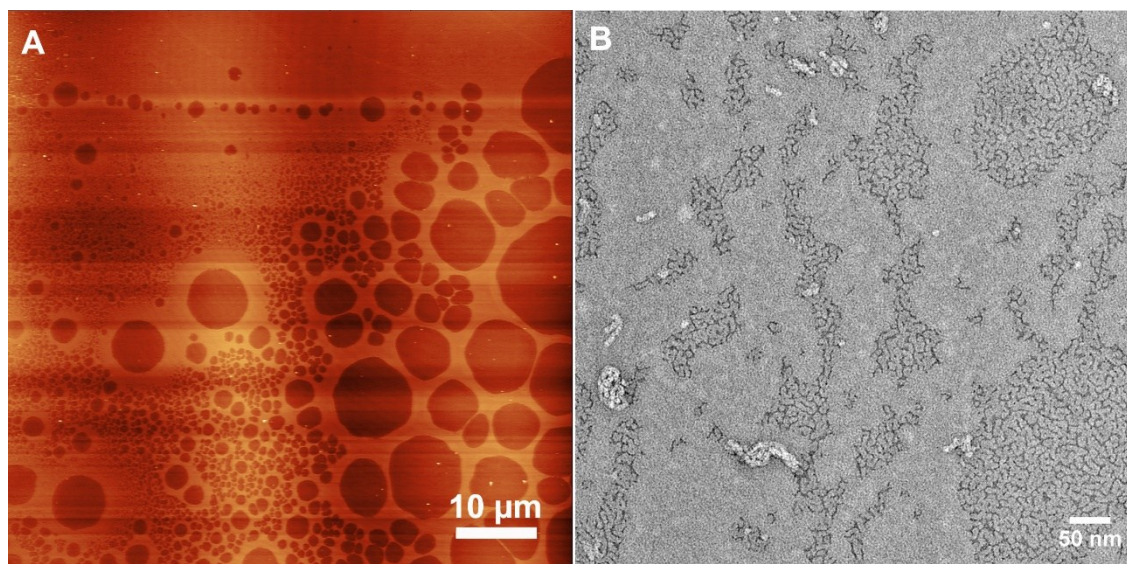


Figure S6. (A) AFM image of **DA₂P-Fmoc** assemblies in the outer region of spin-coated film and (B) TEM image of drop-casted film at the concentration of 1 mM in methanol with an aging time of 10 days.

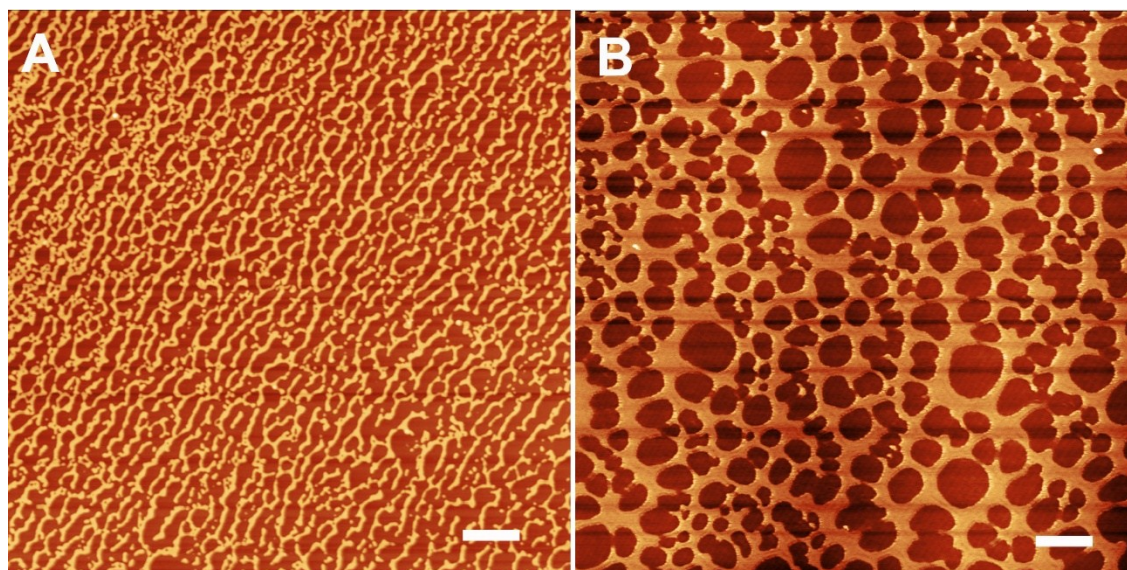


Figure S7. AFM images of **DA₂P-Fmoc** assemblies at the concentration of (A) 0.05 mM and (B) 0.2 mM in methanol with the aging effect. Scale bars are 1 μm .