Materials and methods

Materials. Peptides were purchased from Bankpeptide Biological Technology and were used without further purification.

Preparation of fibrils. Lyophilized powders of peptides were dissolved in 1,1,1,3,3,3 hexafluoro-2-propanol (HFIP) at the concentration of 1 mg/ml, then diluted F10 HFIP solution five times with HFIP, and allow it to self-assemble at ambient temperature for a duration of thirty minutes.

SEM. After nanostructure formation treatment, 10 µl of each compound was deposited on silicon wafer, dried at room temperature, and coated with Au. SEM images were obtained using a FE-SEM (Phenomenon LE, Phenom-World, Netherlands) operating at 10 KV.

AFM. After nanostructure formation treatment, 10 µl of each compound was deposited on silicon wafers and then dried at room temperature. Experiments were carried out using a commercial AFM (Multimode 8, Bruker, U.S.A).

CD spectroscopy. CD spectra were collected with a Chirascan spectrometer (Applied Photophysics, UK). Following nanostructure formation treatment, samples were diluted to 0.25 mg/ml and data acquisition was performed in 1 nm increments at a range of 190–260 nm with a spectral bandwidth of 1.0 nm. Spectra were baseline corrected with ultra-pure water. The spectrum of each sample was collected thrice and averaged.

FTIR measurements. The infrared spectra were measured using a Nicolet 5700 spectrometer (Thermo, US). 20 µL of the sample solutions were dropped onto CaF_2 plates and dried at room temperature. All samples were scanned over a range of 4000 to 400 cm^{-1} at a resolution of 4 cm^{-1}.

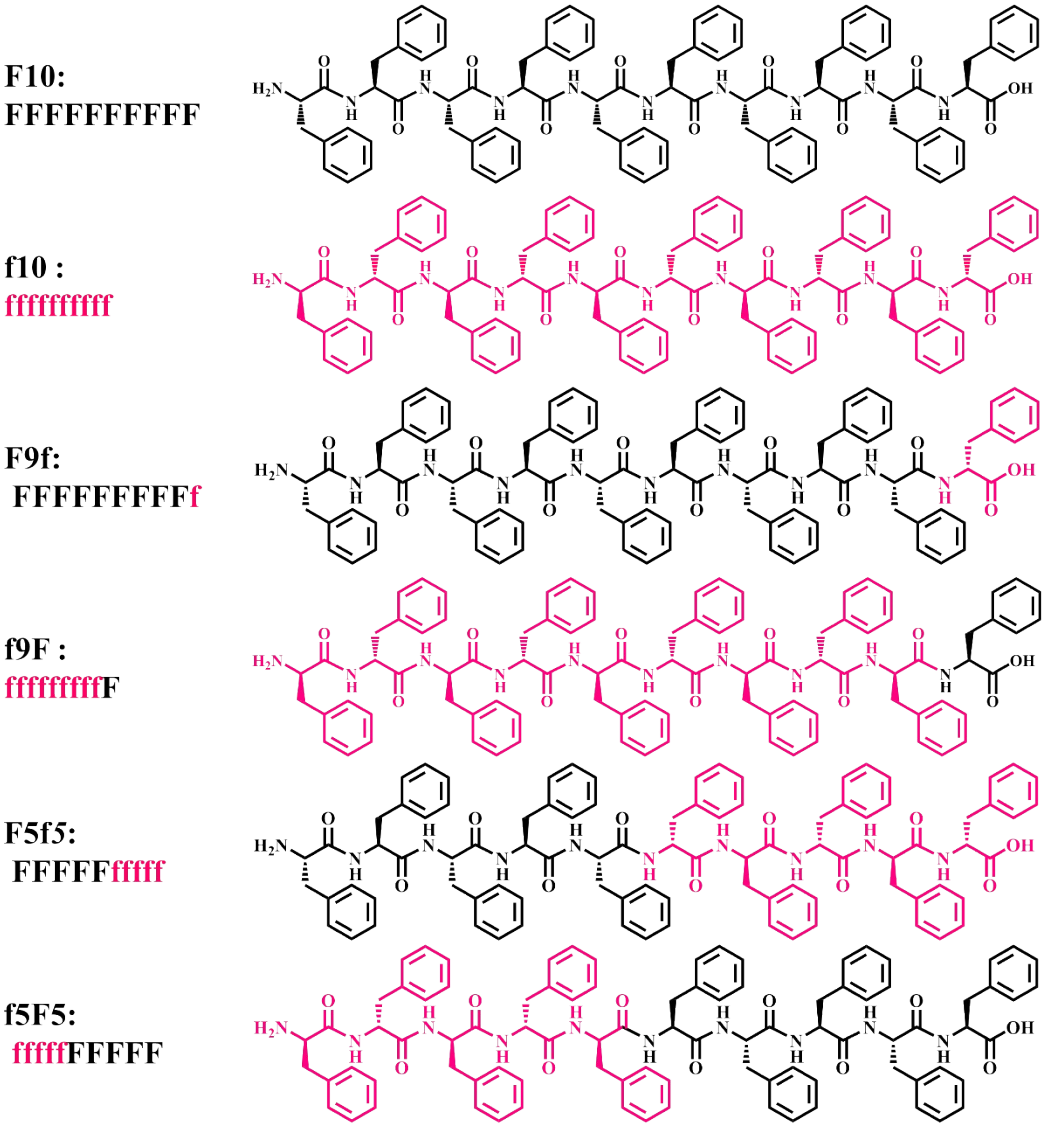

Figure S1. The sequences of the peptides.

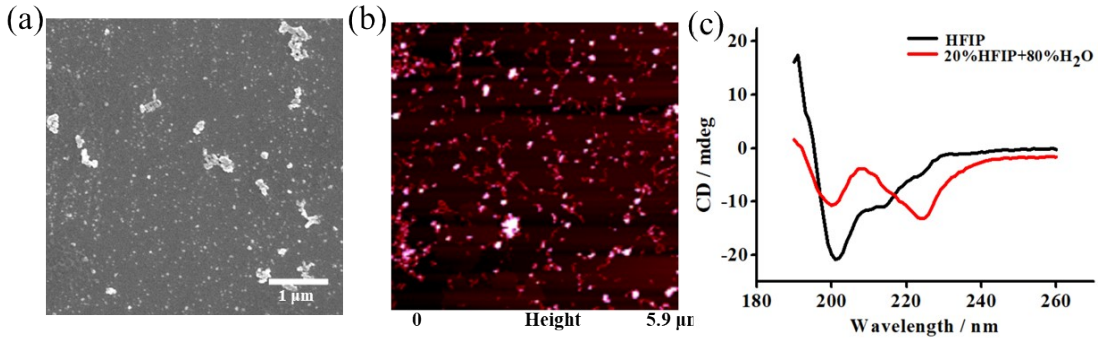

Figure S2. SEM (a) and AFM (b) images of F10 self-assembled structures in HFIP/H_2O. CD spectra of F10 (0.2 mg/ml) in HFIP and HFIP/H_2O.

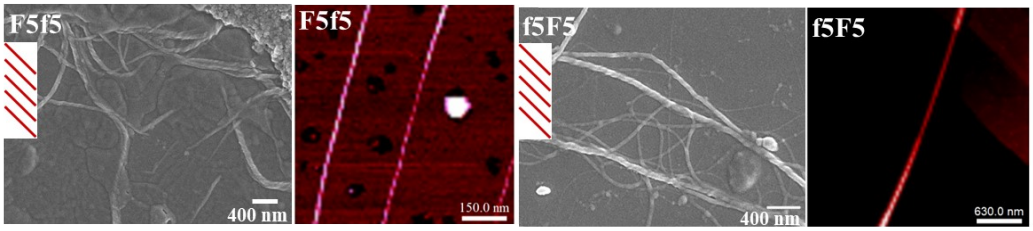

Figure S3. SEM and AFM images of F5f5 and f5F5.