Electronic Supplementary Information (ESI)

Aligning 3D nanofibrousnetworks from self-assembled phenylalanine nanofibers

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Nanofiber formation from Phe self-assembly

At millimolar concentrations, Phecan self-assembleinto nanofibers.[1, 2]Fig. S1a-d present the FE-SEM images ofself-assembledPhenanofibersprepared from different concentrations of Phe solutions, indicating that nanofibers with diameters of 50-400 nmcan be formed at various Phe concentrations. Concentrations higher than 150 mM were not investigated due to solubility issues. Typical topography of self-assembled Phenanofiberswas also obtained using AFM (Fig.S1e). Fig.S1f shows the diameter distribution histogram of Phenanofibers obtained from a Phe concentration of 100 mM, which reveals that the average diameter of the nanofibers was 160 nm, and most (over 75%) Phenanofibers were in the range 100-200 nm.

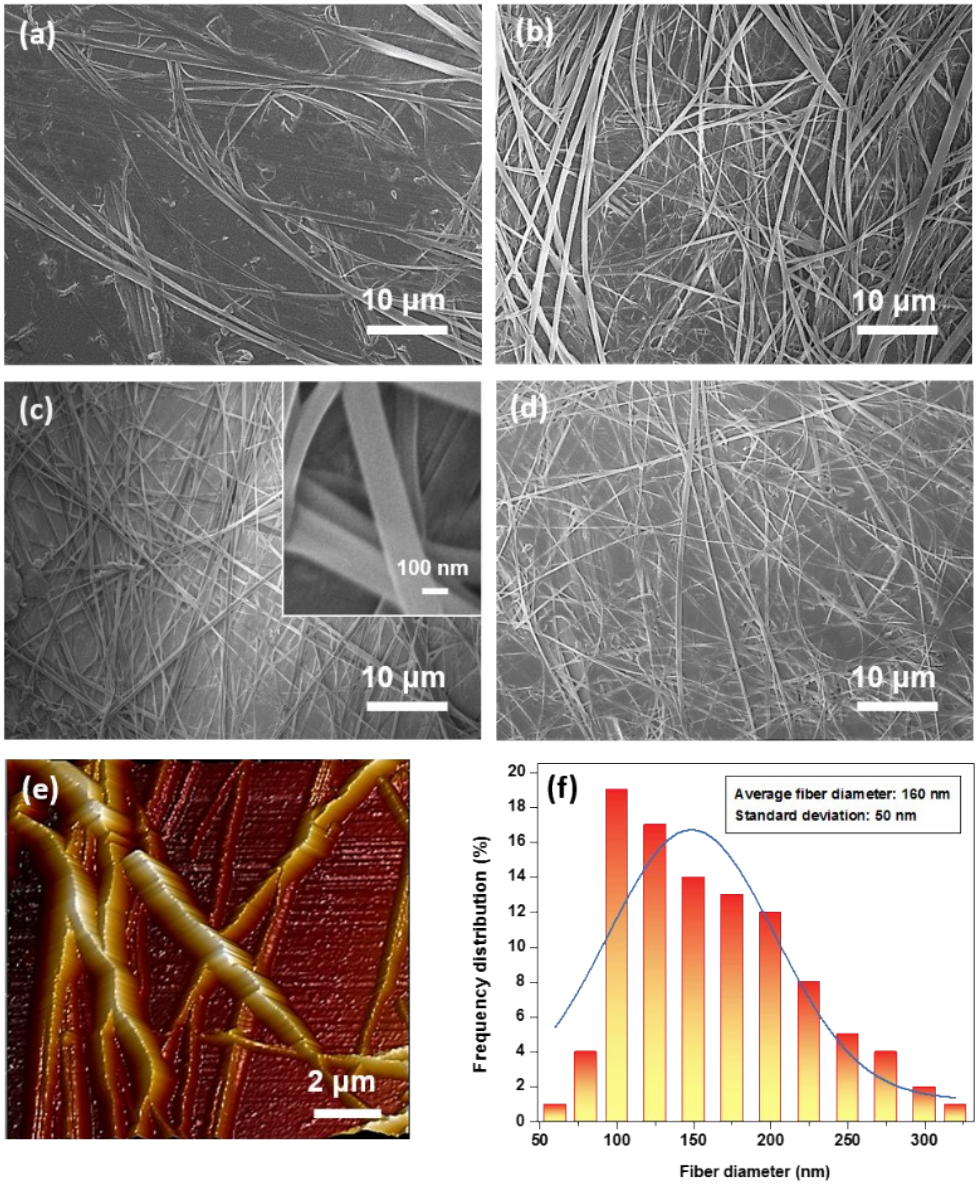

Fig. S1.(**a-d**) FE-SEM images of Phenanofibers obtained by conventional drop-casting of Phe solution at a concentration of (**a**) 25, (**b**) 50, (**c**) 100, and (**d**) 150 mM, respectively. Inset shows a high magnification image. (**e**) AFM image of Phenanofibers from (c). (**f**) Diameter distribution of Phenanofiber presented in (c).

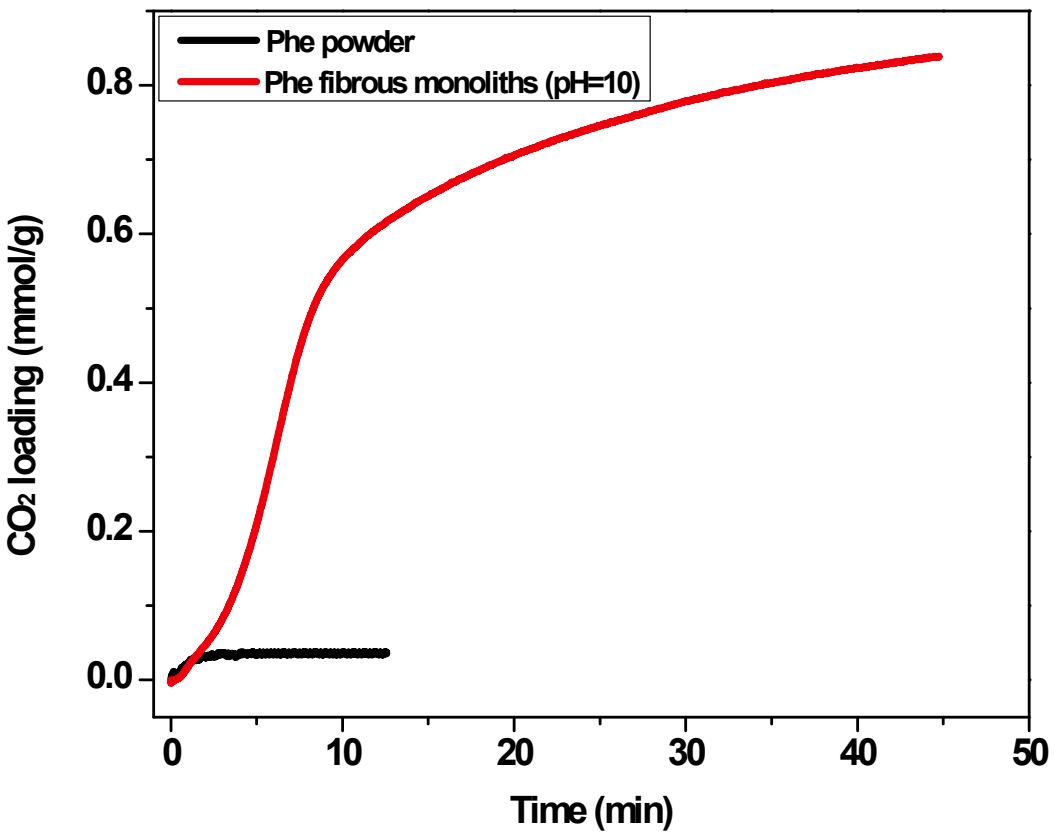

Fig. S2. CO_2 capture performance of Phe nanofibrous monoliths obtained from a Phe solution of pH10 and Phe powders.

References

1.S. Perween, B. Chandanshive, H. C. Kotamarthi and D. Khushalani, *Soft Matter*, 2013, **9**, 10141-10145.
2.L. Adler-Abramovich, D. Aronov, P. Beker, M. Yevnin, S. Stempler, L. Buzhansky, G. Rosenman and E. Gazit, *Nat. Nanotechnol.*, 2009, **4**, 849-854.