

Assembly of silica aerogels within silica nanofibers: Towards a super-insulating flexible hybrid aerogel membrane

Hongxia Zheng ^{a,‡}, Haoru Shan ^{a,‡}, Xianfeng Wang ^{a,b,c,*}, Lifang Liu ^a, Jianyong Yu ^c and Bin

Ding ^{a,b,c,*}

^a Key Laboratory of Textile Science & Technology, Ministry of Education, College of Textiles, Donghua University, Shanghai 201620, China.

^b State Key Laboratory for Modification of Chemical Fibers and Polymer Materials, College of Materials Science and Engineering, Donghua University, Shanghai 201620, China.

^c Nanomaterials Research Center, Modern Textile Institute, Donghua University, Shanghai 200051, China

* Corresponding author: Dr. Xianfeng Wang; Bin Ding (E-mail: wxf@dhu.edu.cn; binding@dhu.edu.cn)

‡ These authors contributed equally to this work.

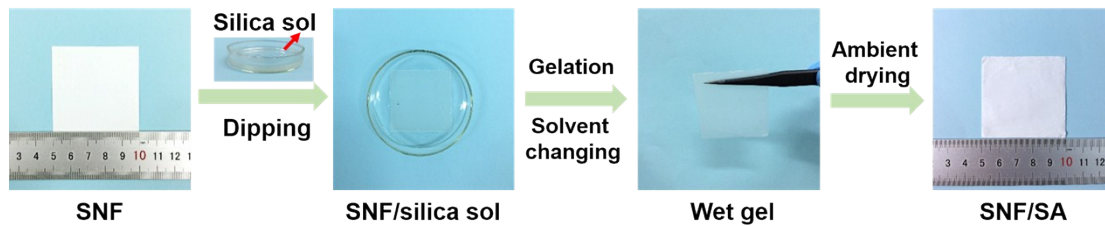


Fig. S1 Optical images of the preparation of hybrid SNF/SA membranes.

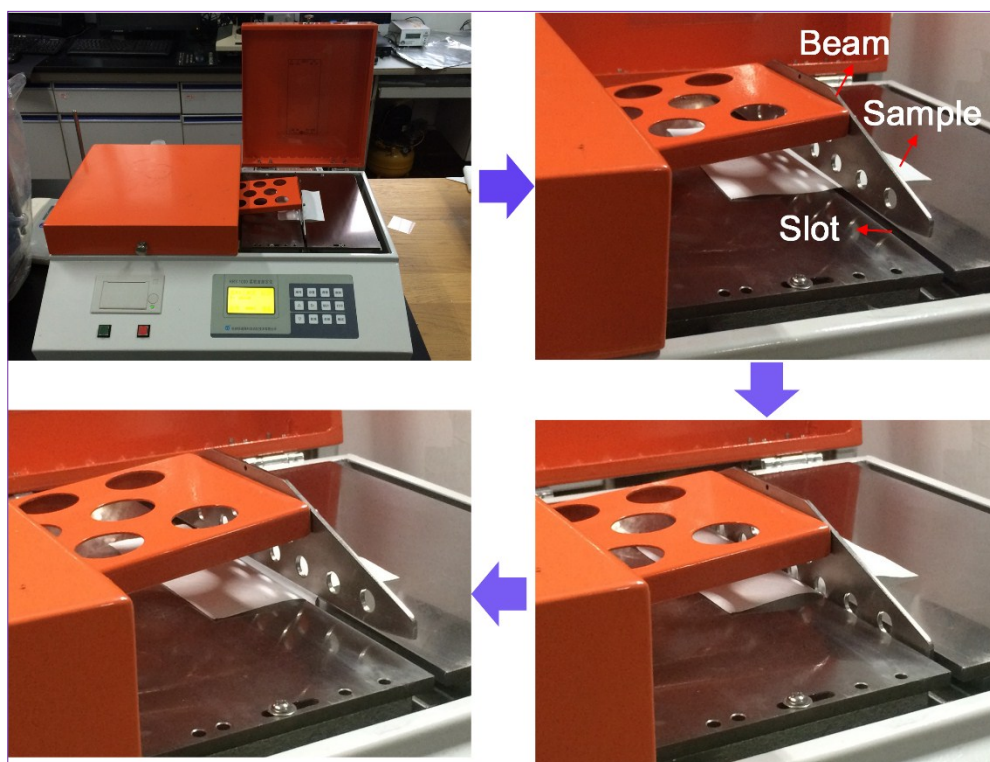


Fig. S2 Optical images presenting process of the three-point flexural bending test on a softness tester.

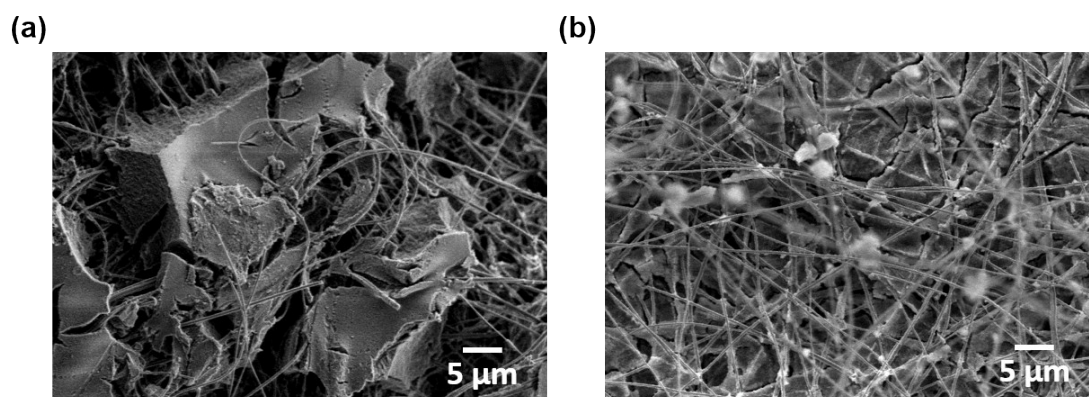


Fig. S3 FE-SEM images of the as-prepared SNF/SA membranes (a) without TMCS modification, and (b) with TMCS modification.

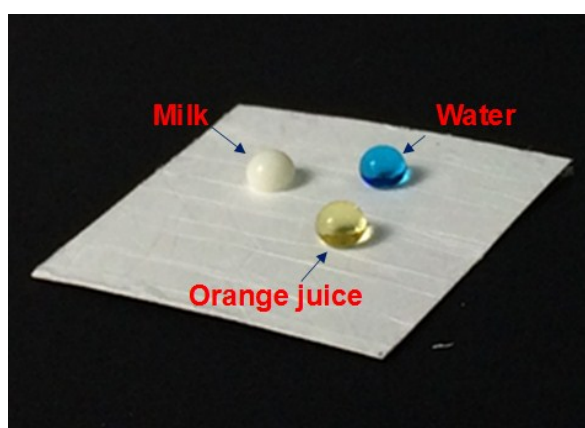


Fig. S4 Droplets of water, milk and orange juice on a hybrid SNF/SA-4 membrane.

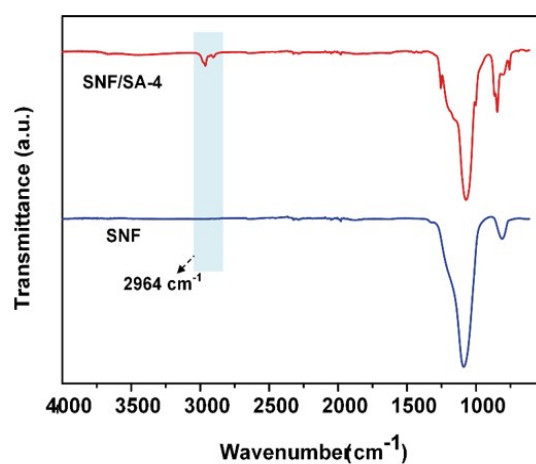


Fig. S5 FT-IR spectra of SNF, and SNF/SA-4 membranes.