

Supporting Information

for

A renewable biomass-derived honeycomb-like aerogel as robust oil absorbent with double way reusability

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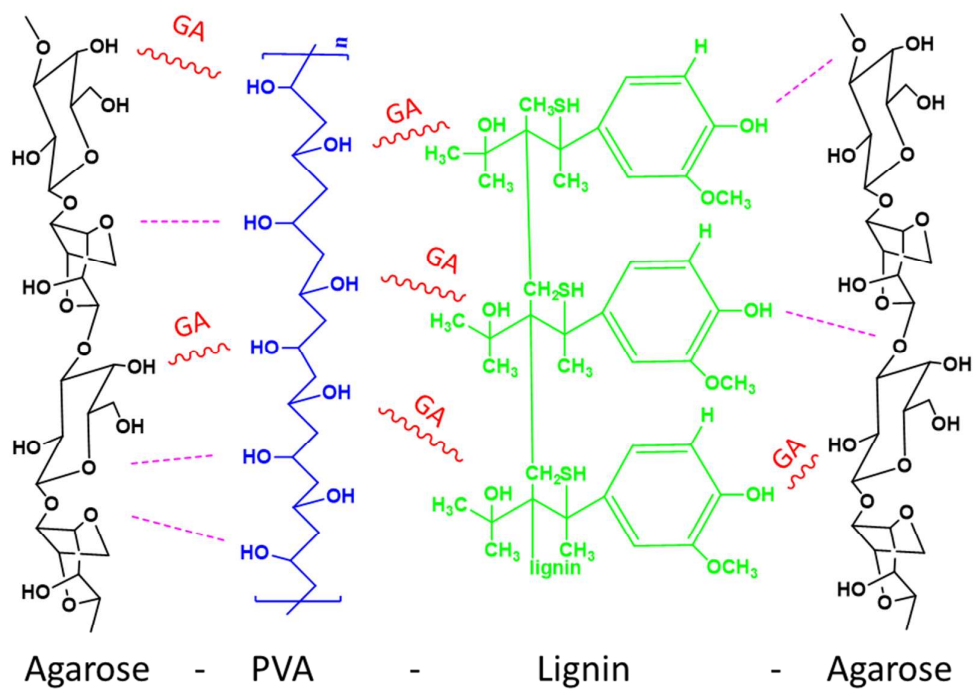
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Scheme S1. Supposed schematic of cross-linked chemical structure for the biomass-derived aerogel.¹⁻² Detailed mechanism still needs to be explored.



Figure S1. Optical image of aerogels with diverse shapes.

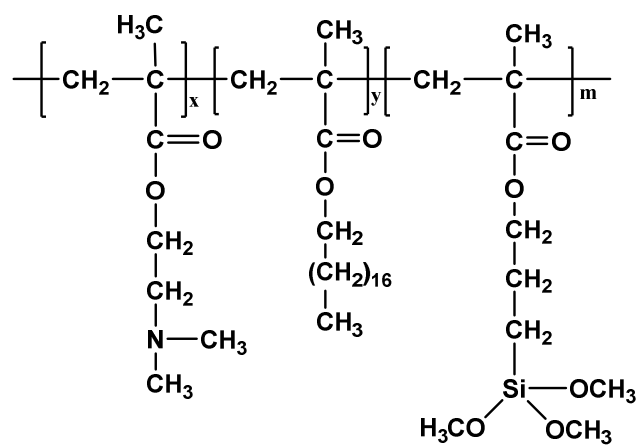


Figure S2. Chemical structure of synthesized copolymer p(SMA-DMAEMA-KH570)

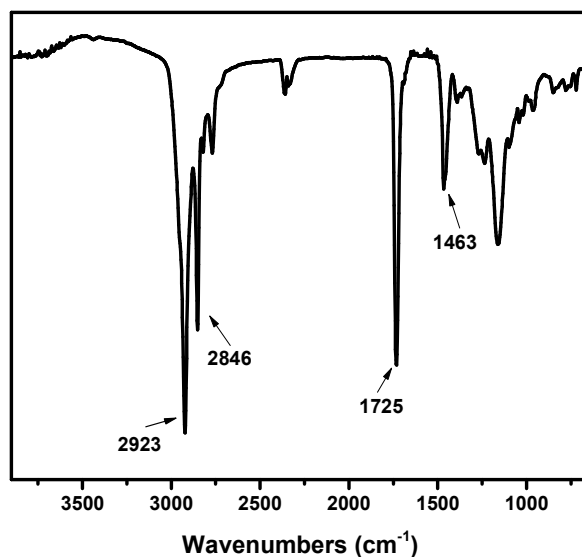


Figure S3. FTIR spectrum of synthesized copolymer p(SMA-DMAEMA-KH570)

Figure S3 showed the FTIR spectrum of the synthesized copolymer p(SMA-DMAEMA-KH570). As can be seen from Figure S3, the characteristic peak at around 1630 cm^{-1} which was attributed to the stretching vibration of --C=C-- was disappeared, indicating the completely polymerization of reactants. Peaks at 2923 and 2846 cm^{-1} were ascribed to stretching vibrations of --CH_3 and --CH_2 groups, which were abundant in the chemical structure of the synthesized copolymer. The appearance of peak at 1725 cm^{-1} suggested the vibration of the C=O bond. And the bands at 1463 cm^{-1} indicated C-N stretching vibrations, which was belonging to the component of pDMAEMA.

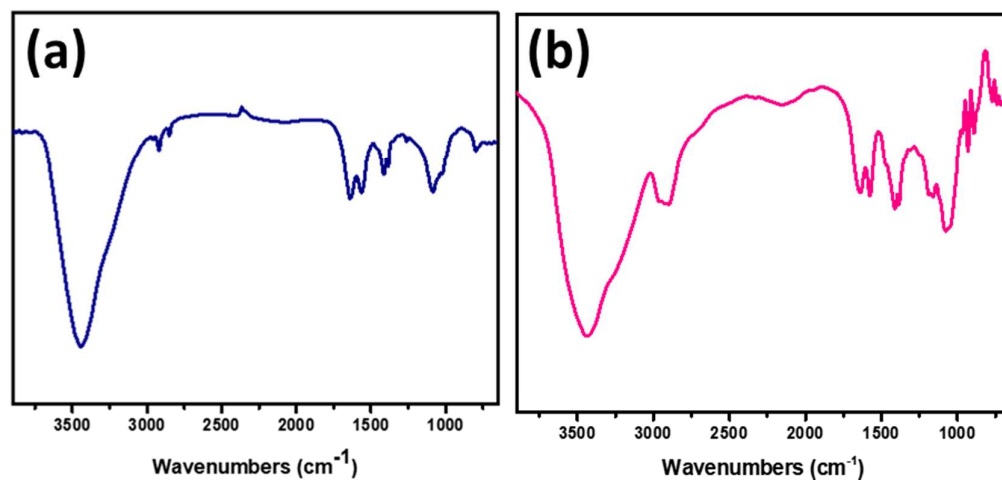


Figure S4. FTIR spectra of (a) lignin and (b) agarose

REFERENCES

1. Chaudhary, J. P.; Nataraj, S. K.; Gogda, A.; Meena, R. Bio-based superhydrophilic foam membranes for sustainable oil – water separation. *Green Chem.* **2014**, *16* (10), 4552-4558.
2. Chaudhary, J. P.; Vadodariya, N.; Nataraj, S. K.; Meena, R. Chitosan-Based Aerogel Membrane for Robust Oil-in-Water Emulsion Separation. *ACS Appl. Mater. Interfaces* **2015**, *7* (44), 24957-24962.