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Ambient-temperature fabrication of melamine-based sponges coating with hydrophobic lignin shells by surface dip adsorbing for oil/water separation

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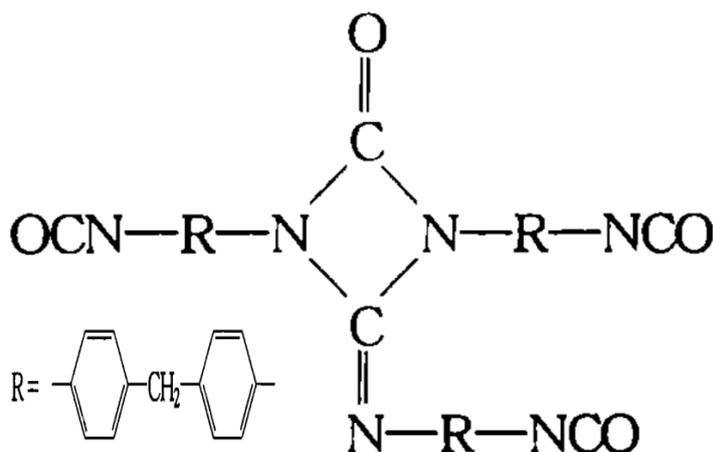


Fig. S1. The structure of carbodiimide modified diphenyl methane di-isocyanate (MMDI).

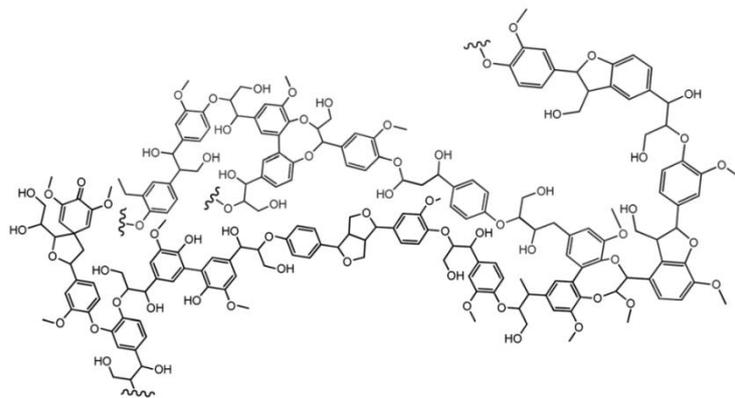


Fig. S2. The typical structure of Lignin.

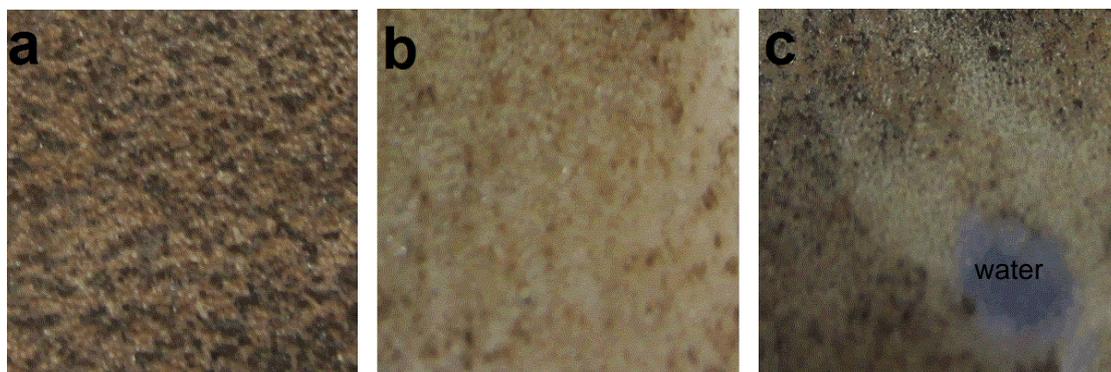


Fig. S3. Photos of LMF sponges prepared by: (a) 0.01 g/mL of Lignin and 0.01 g/mL of MMDI, (b) 0.005 g/mL of Lignin and 0.005 g/mL of MMDI, (c) 0.01 g/mL of Lignin and 0.005 g/mL of MMDI.

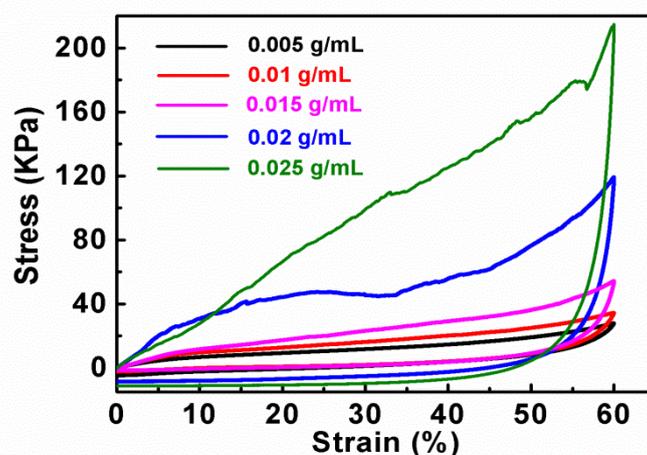


Fig. S4. Compressive stress-strain curves of LMF sponges at different concentrations of lignin.

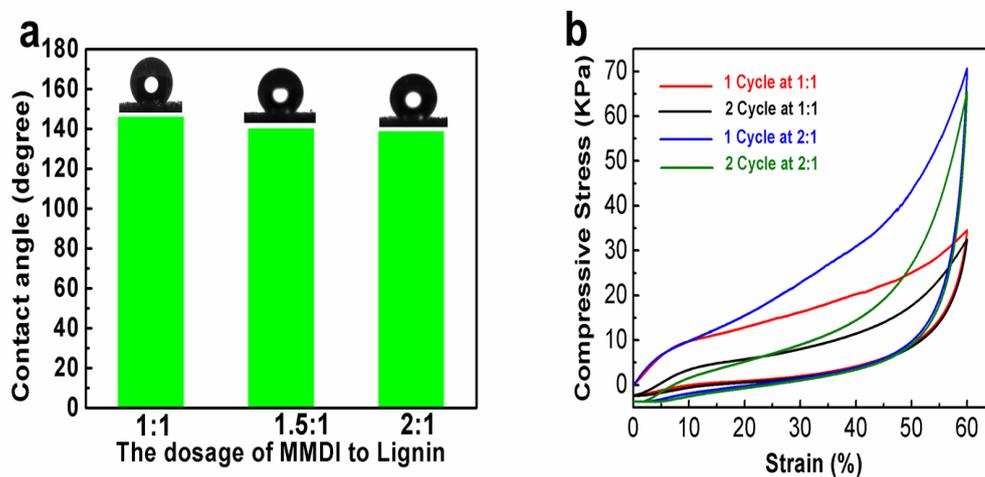


Fig. S5. The water contact angles (a) and Compressive stress-strain curves (b) of LMF sponges at different usages of MMDI to lignin.

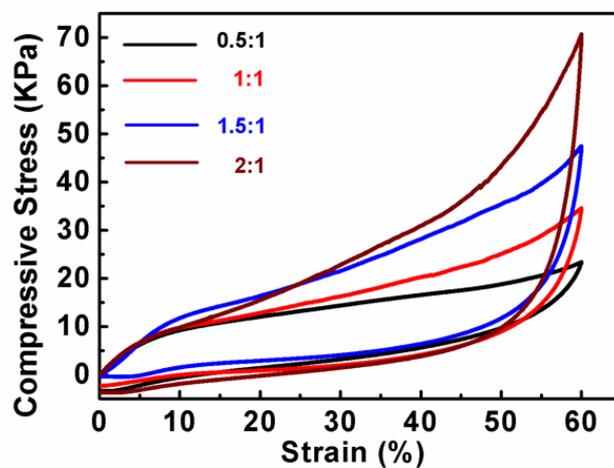


Fig. S6. Compressive stress-strain curves of LMF sponges at different usages of MMDI to lignin.



Fig. S7. Mirror-like phenomenon can be observed on the LMF sponge in the water after 1000 cycles of compression testing at the strain value of 60%.