

Supporting Information

Sustainable Superhydrophobic Lignin-Based Polyurethane Foam: An Innovative Solution for Oil Pollutant Adsorption

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Supplementary Caption

Table S1. LLP formulations with different amounts of lignin.

Table S2. Formulations of LPUFs with Different Lignin Content in LLPs.

Table S3. The hydroxyl values of LLPs obtained using ^{31}P -NMR analysis.

Fig. S1. 30-cycle compression curve of LPUF30-0.

Fig. S2. Self-cleaning test of LPUF30-2.

Fig. S3. Photographs of LPUF30-2 degradation in methanol-0.2 mol/L sodium hydroxide aqueous solution (60 °C) over time

Video S1. The Video of adsorption process of toluene on water surface using LPUF30-2.

Video S2. The Video of adsorption process of dichloromethane under water by LPUF30-2.

Video S3. The video of LPUF30-2 performing oil-water separation for a chloroform and water mixture.

Video S4. The Video of adsorption process of crude oil under solar radiation by LPUF30-2.

Table S1. LLP formulations with different amounts of lignin.

	PEG-400/g	Glycerol/g	Lignin/g	Sulfuric acid/g
LLP15	80	20	15	2.25
LLP22.5	80	20	22.5	3.375
LLP30	80	20	30	4.5
LLP37.5	80	20	37.5	5.625

Table S2. Formulations of LPUFs with Different Lignin Content in LLPs.

	Lignin-based polyols (g)	DBTDL (g)	Water (g)	HDI (g)
LPUF15	20.0	0.2	0.06	13.85
LPUF22.5	20.0	0.2	0.06	12.83
LPUF30	20.0	0.2	0.06	12.16

Table S3. The hydroxyl values of LLPs obtained using ^{31}P -NMR analysis.

	hydroxyl values/mmol/g
LLP15	7.9
LLP22.5	7.3
LLP30	6.9
LLP37.5	6.7

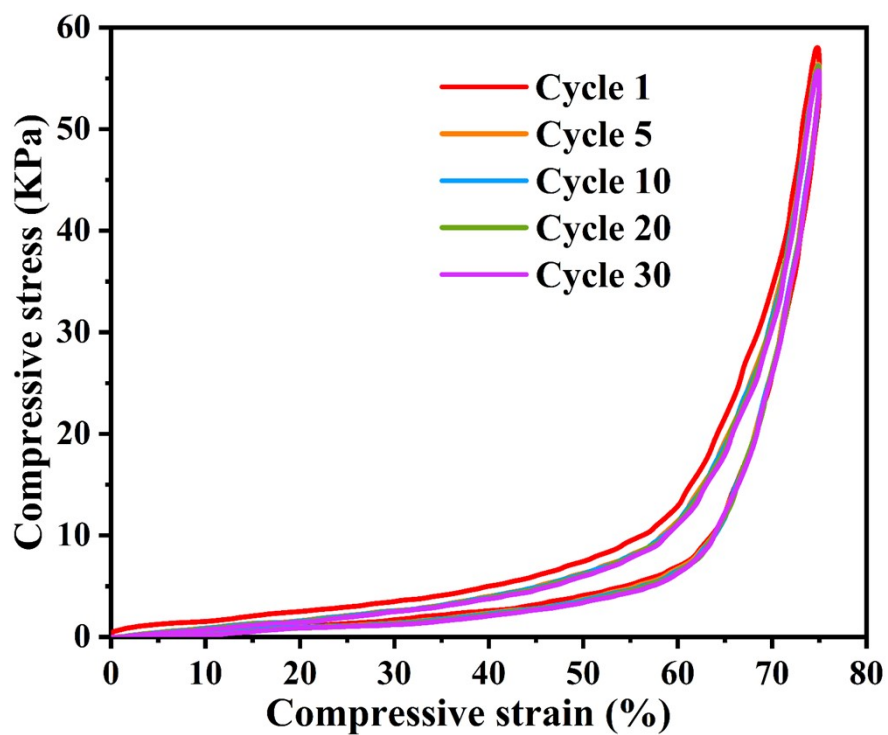


Fig. S1. 30-cycle compression curve of LPUF30-0.

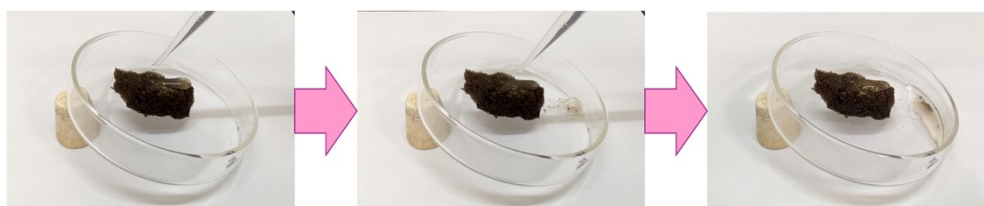


Fig. S2. Self-cleaning test of LPUF30-2.

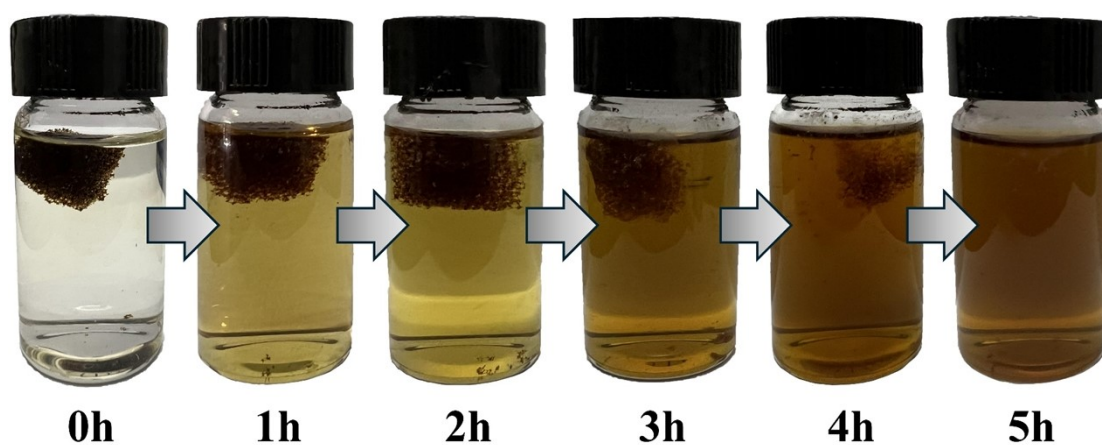


Fig. S3. Photographs of LPUF30-2 degradation in methanol-0.2 mol/L sodium hydroxide aqueous solution (60°C) over time.