

Supporting Information

Lignin assembled zirconium-based PNA nanofiber for catalytic transfer hydrogenation of furfural into furfuryl alcohol

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1. Supplementary Table

Table S1. Zirconium content of fresh and spent ZrNPs-lignin/PAN by ICP-OES.

Entry	Catalyst	Zirconium content, %
1	Fresh ZrNPs-lignin/PAN	17.35
2	Spent ZrNPs-lignin/PAN	17.08

2. Supplementary Figures

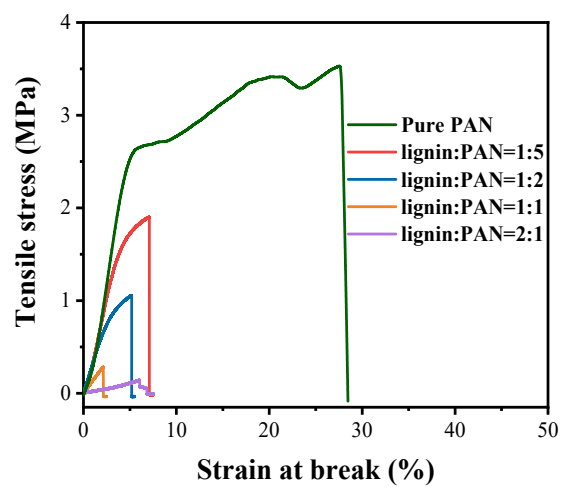


Figure S1. Mechanical properties of the prepared nanofibers with different ratio between lignin and PAN.

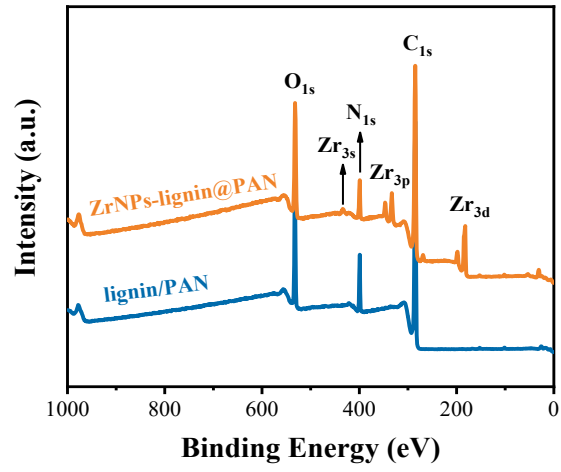


Figure S2. XPS survey scan of lignin/PAN and ZrNPs-lignin/PAN.

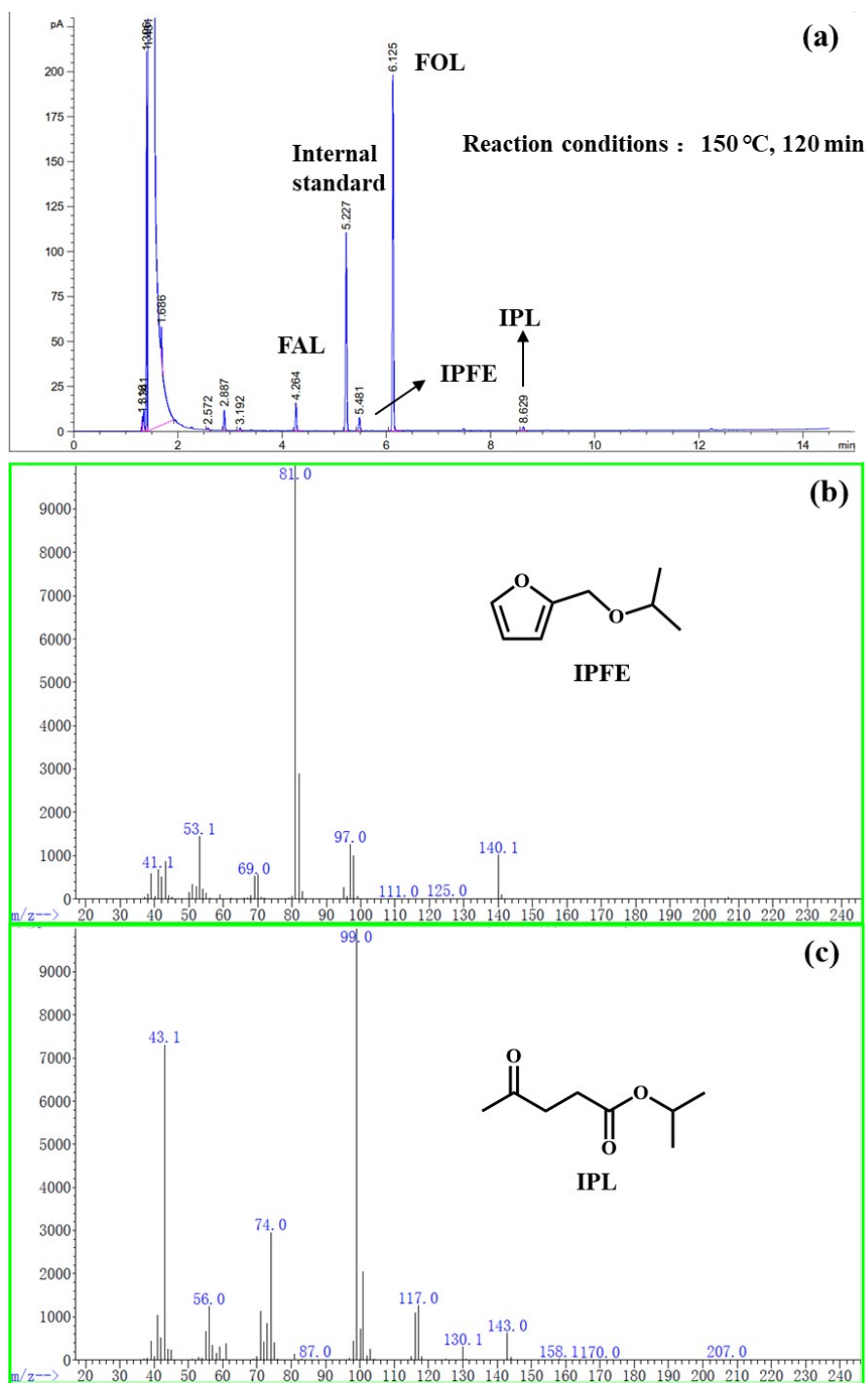


Figure S3. GC spectrum of IPFE and IPL (a), GC-MS spectrum of IPFE (b) and IPL

(c).

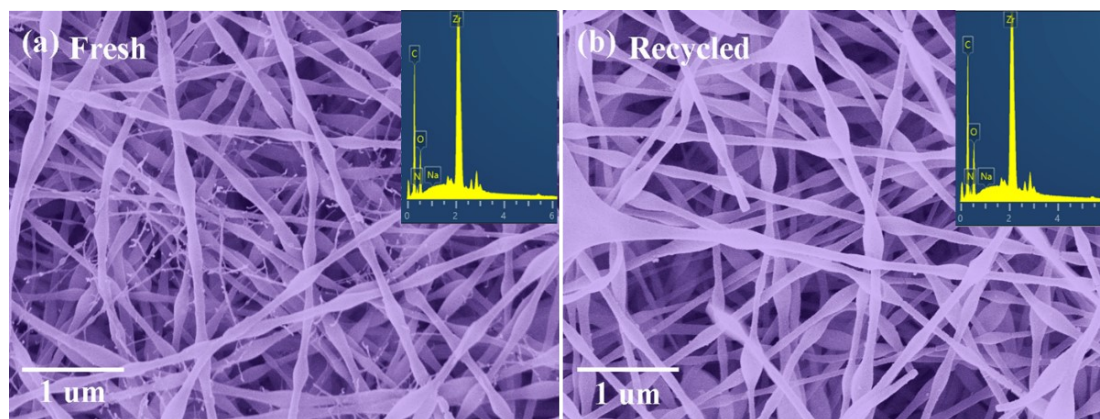
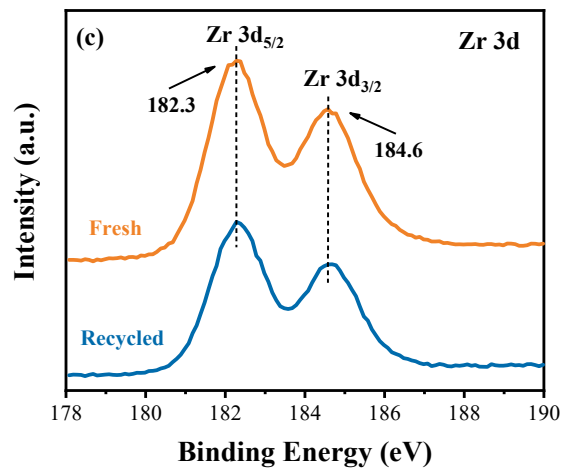
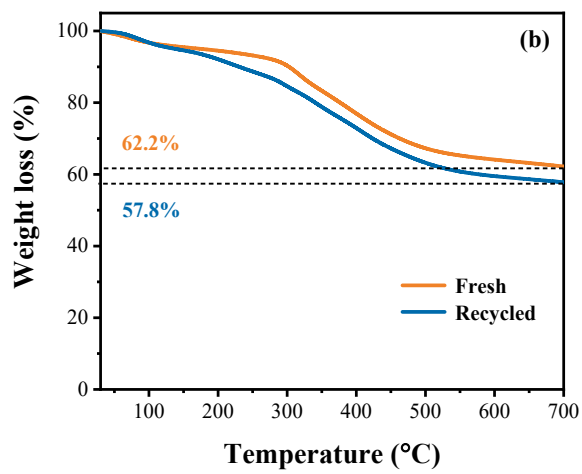
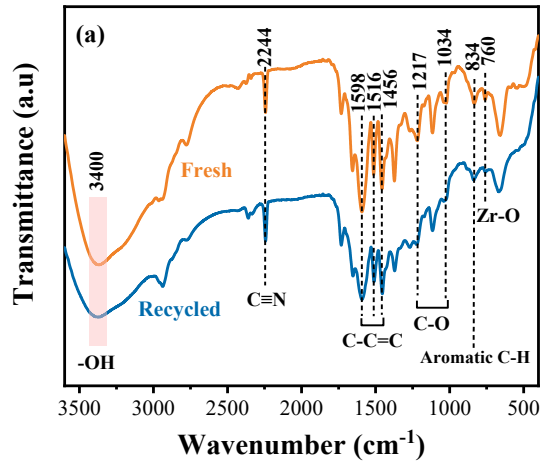


Figure S4. SEM-EDS of fresh (a) and recycled (b) ZrNPs-lignin/PAN.



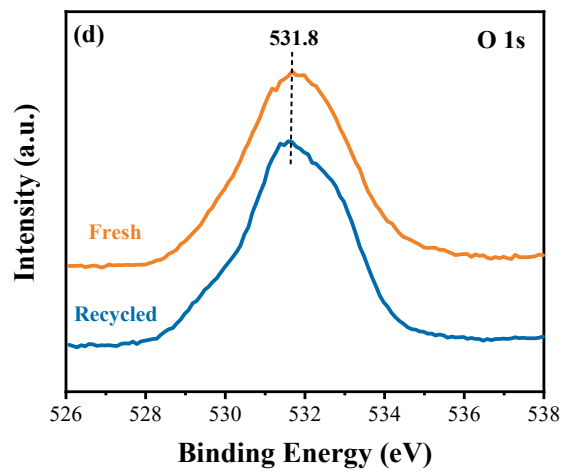


Figure S5. FTIR spectra (a), TG (b), Zr 3d XPS spectra (c) and O 1s XPS spectra (d) of fresh and recycled ZrNPs-lignin/PAN.