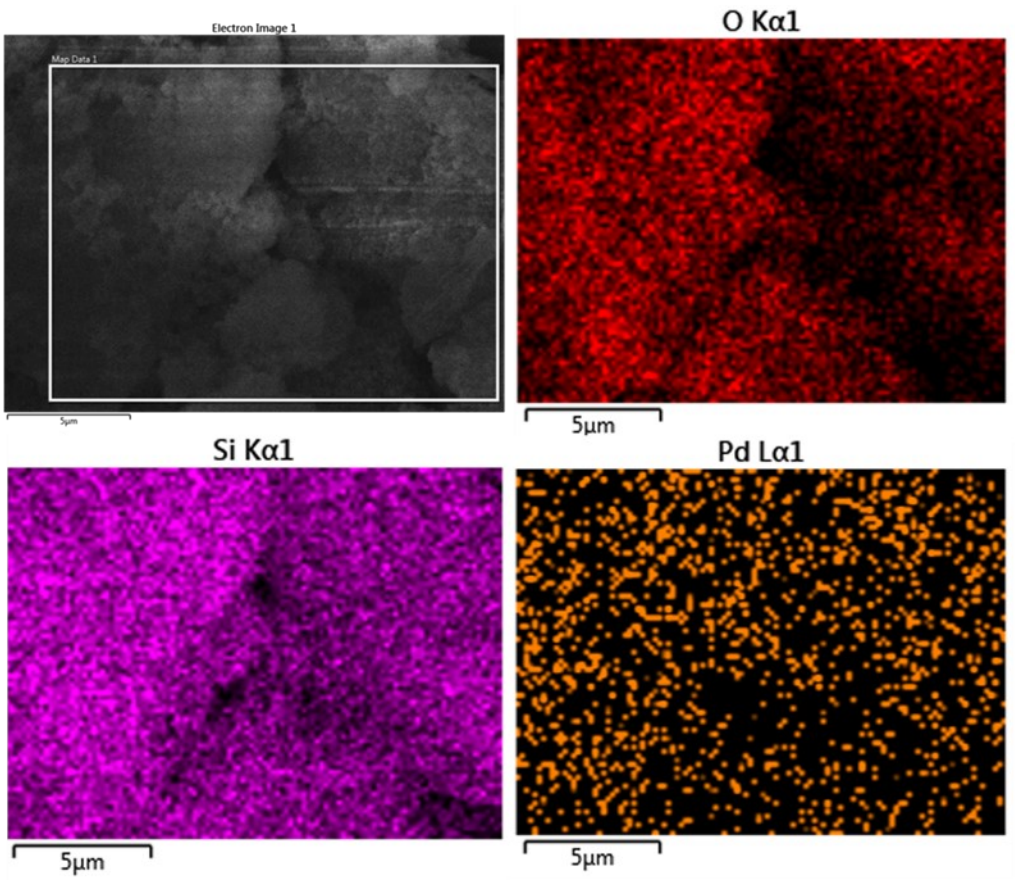


Figure S1. EDX elemental mapping of PdO@MCM-41.

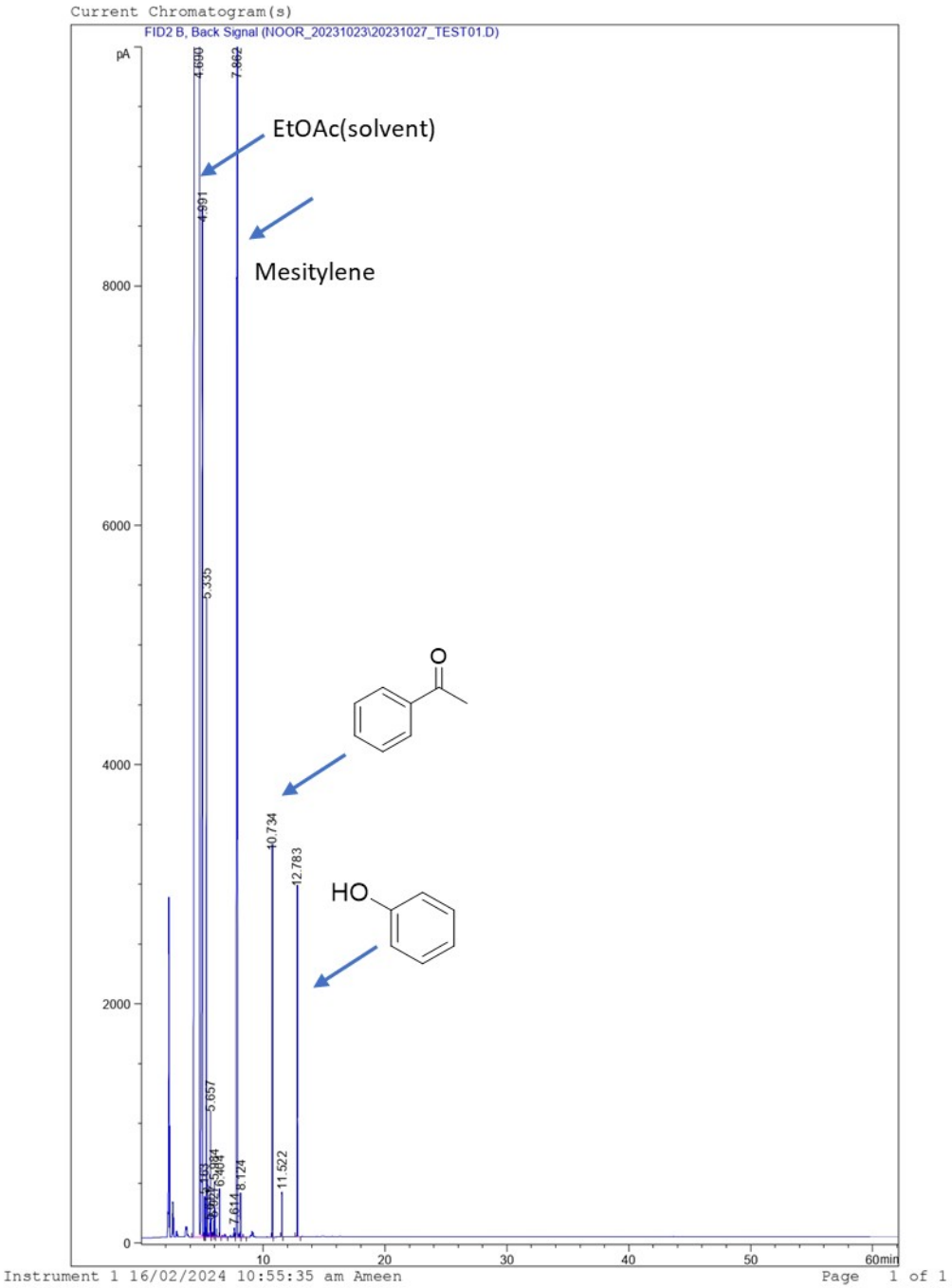


Figure S2. GC-FID chromatogram of redox neutral C-O bond cleavage in 2-phenoxy-1-phenyl ethanol using PdO@MCM-41 catalyst

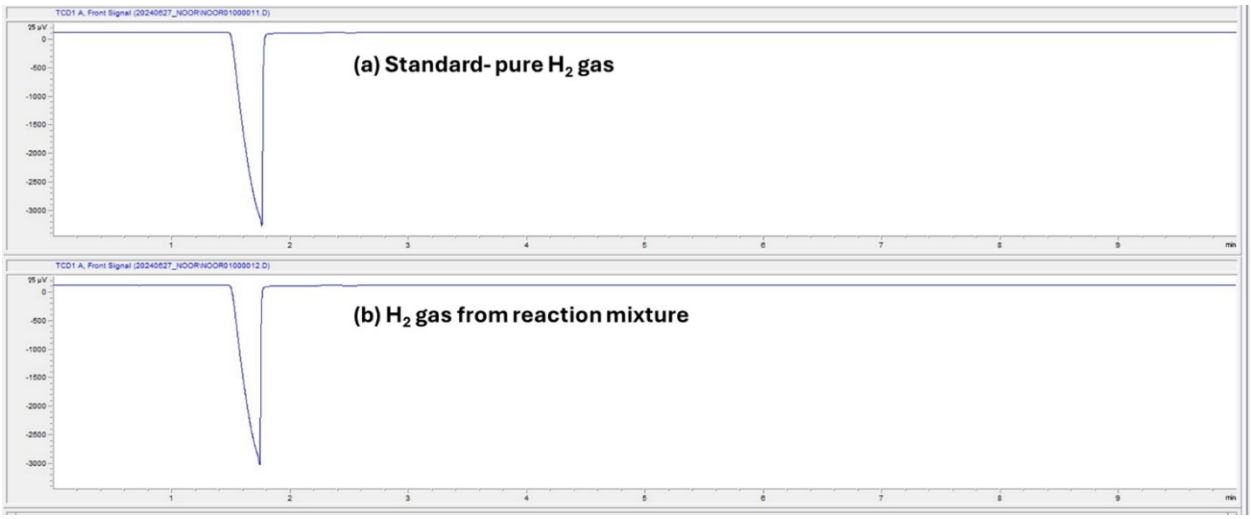


Figure S3. Detection of evolved hydrogen by PP-ol using GC-TCD a) chromatogram of pure H_2 sample, b) chromatogram of H_2 gas from reaction mixture. (*The peak is inverted due to the use of helium as carrier gas whose thermal conductivity is close to that of hydrogen*).

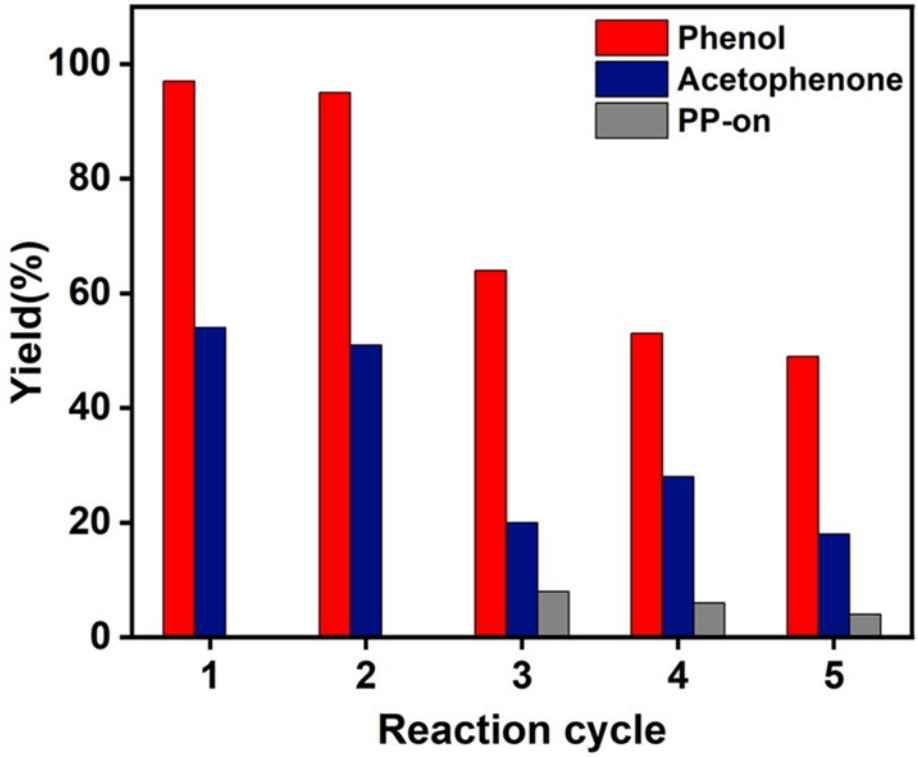


Figure S4. Recyclability of PdO@MCM-41 for redox neutral cleavage of 2-phenoxy-1-phenylethanol under optimized reaction conditions.

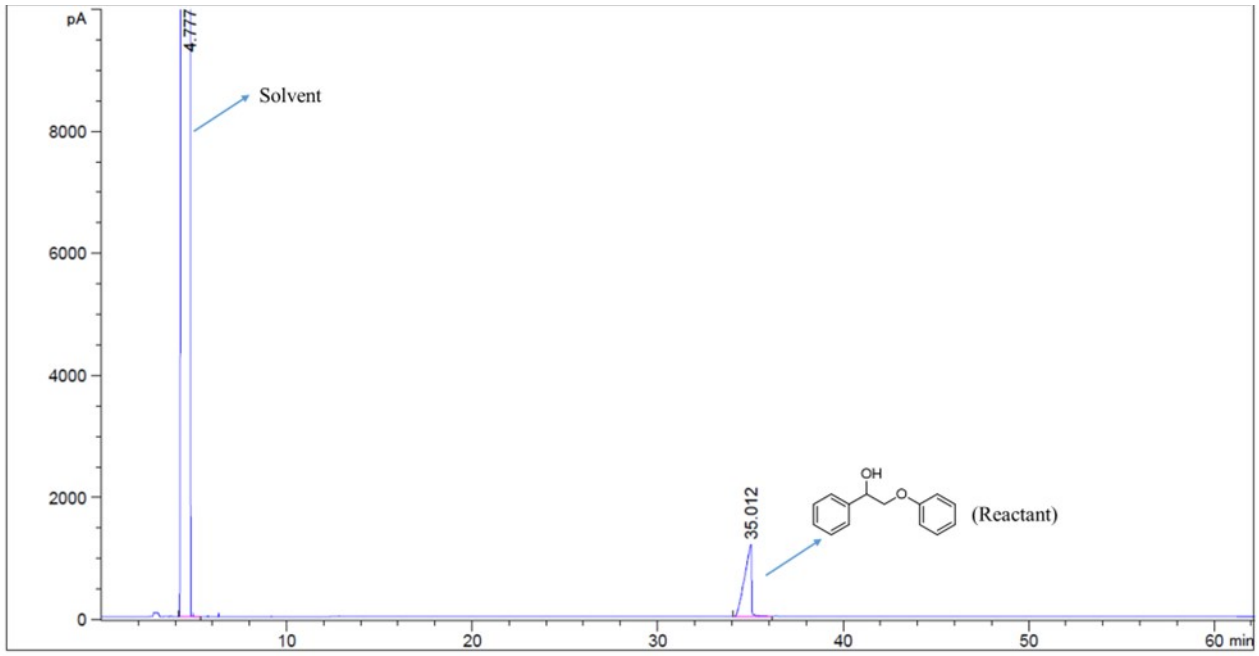


Figure S5. GC-FID chromatogram of of redox neutral C-O bond cleavage in 2-phenoxy-1-phenyl ethanol using leached Pd

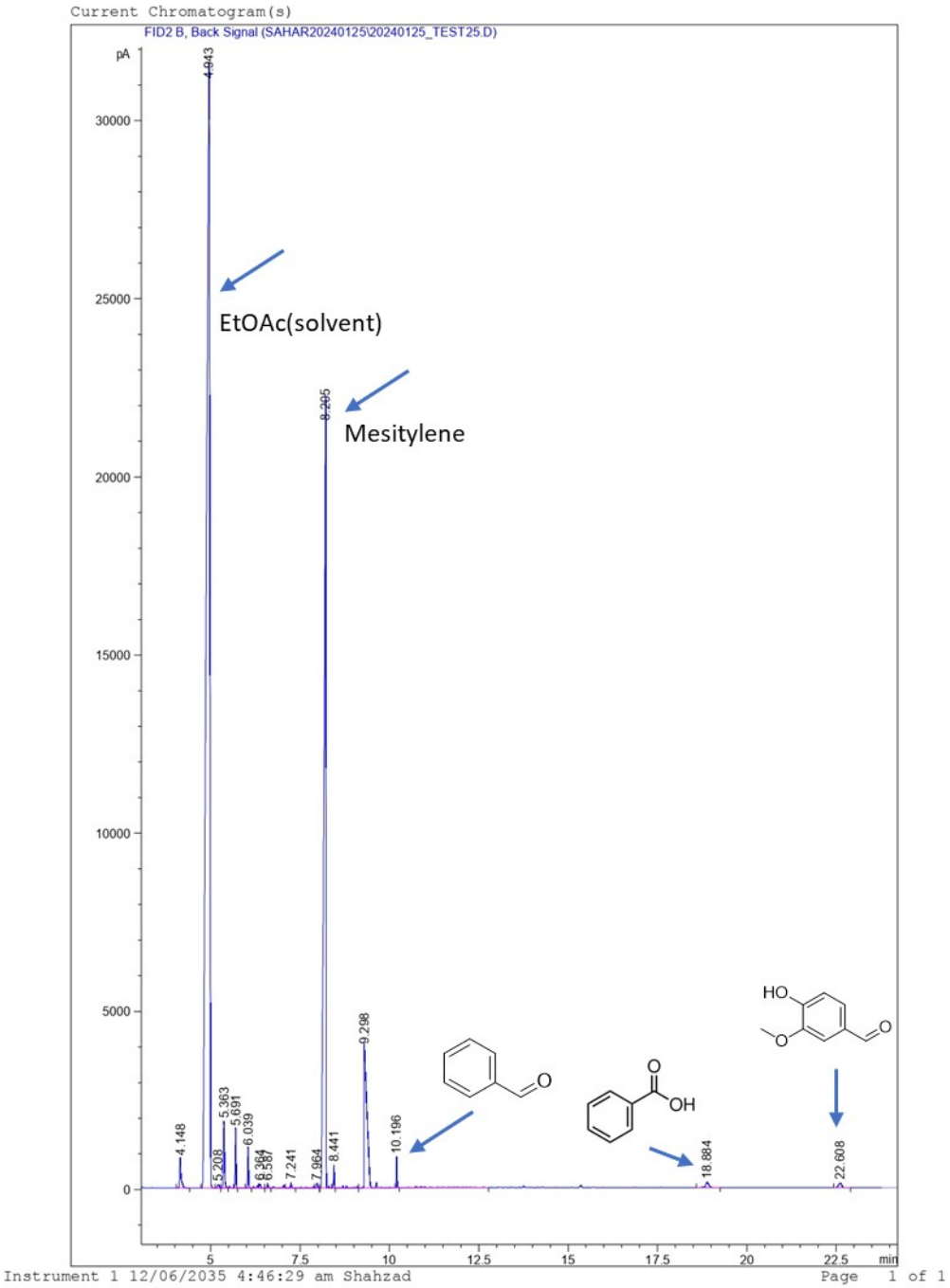


Figure S6. GC-FID chromatogram after depolymerization of alkali lignin.

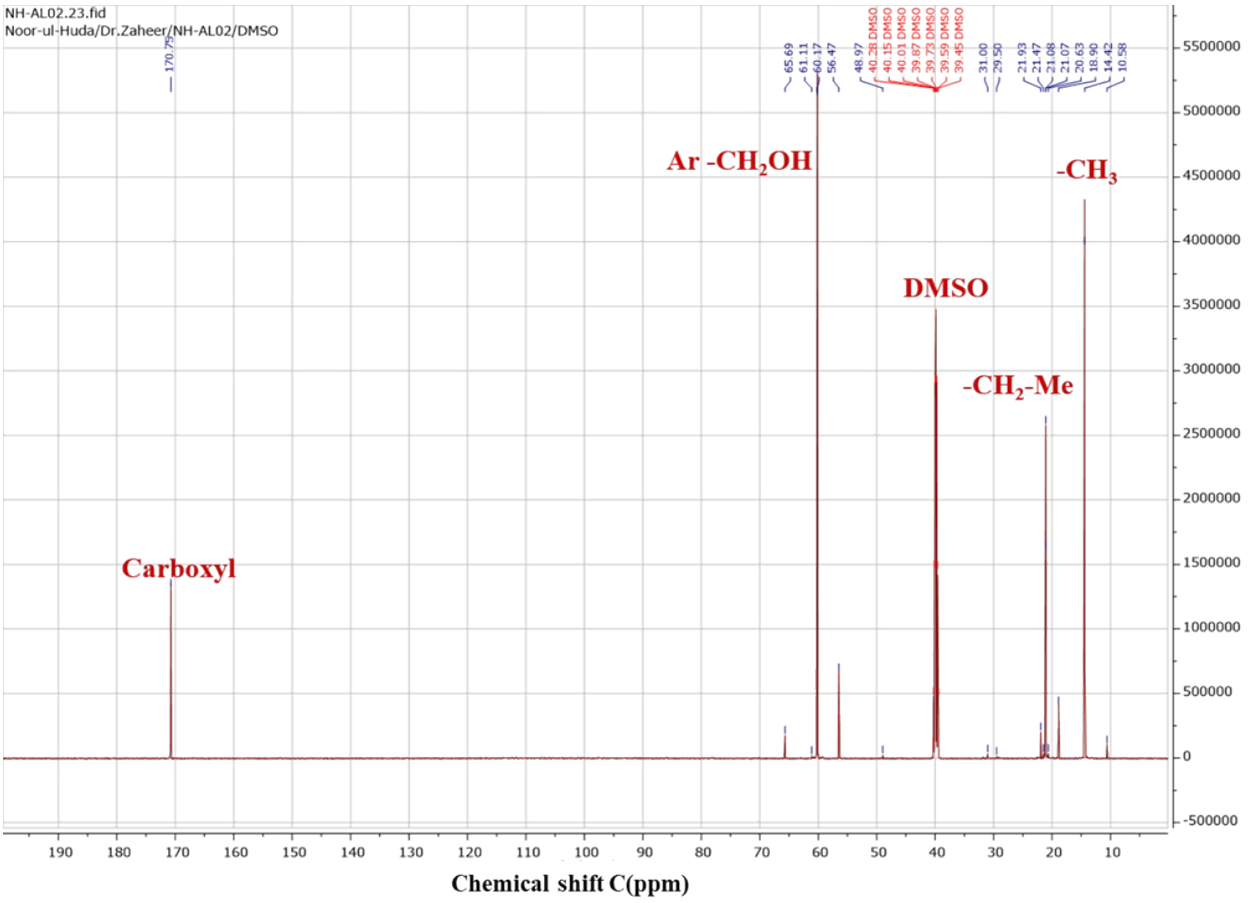
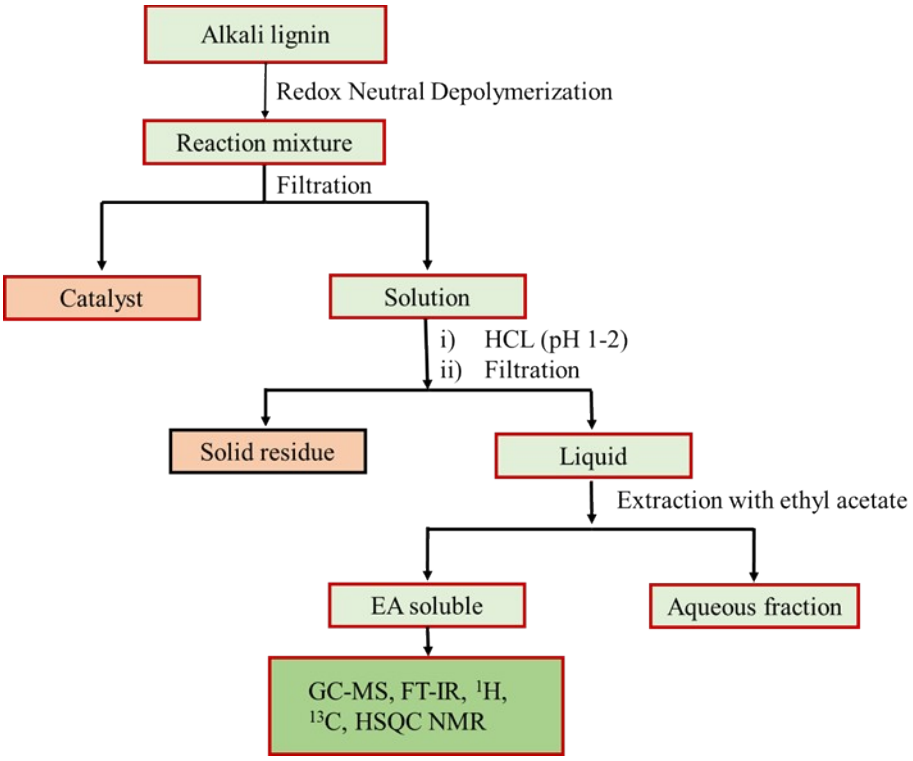


Figure S7. 13C NMR of depolymerized alka



Scheme S1. Separation sequence for product isolation and lignin recovery.