Supporting information

Ce-MOF Infused membranes with enhanced molecular sieving in the application of dye rejection

Usha Nellur[1], Nagaraj S. Naik[1], Richelle M. Rego[1], Madhuprasad Kigga[1], G. Arthanareeswaran[2], Mahesh Padaki*[1]

[1] Centre for Nano and Material Sciences, Jain University, Jain Global Campus, Kanakapura, Ramanagaram, Bangalore 562112, India.

[2] Department of Chemical Engineering, National Institute of Technology, Tiruchirapalli, Tamil nadu

* Corresponding author. Tel.: +918027577212, Email: sp.mahesh@jainuniversity.ac.in

1 Materials and methods

1. Materials

All the chemicals used in the present study are of analytical grade and they are used without further purification. Ceric ammonium nitrate (CAN) was purchased with NICE chemicals, Terephthalic acid (Avra), Polysulfone beads (PSf MW-35000 Da) solvents-dimethylformamide (Spectrochem), N-methyl-2-pyrrolidone (NMP, Sigma Aldrich), Methylene Blue (Sisco), methyl orange (Avra), Eriochrome black T (Sigma), Rhodamine B (Avra), Alcian Blue (Avra), Neutral red (Avra), Alizarin (Avra). Double distilled water is used in the present study.

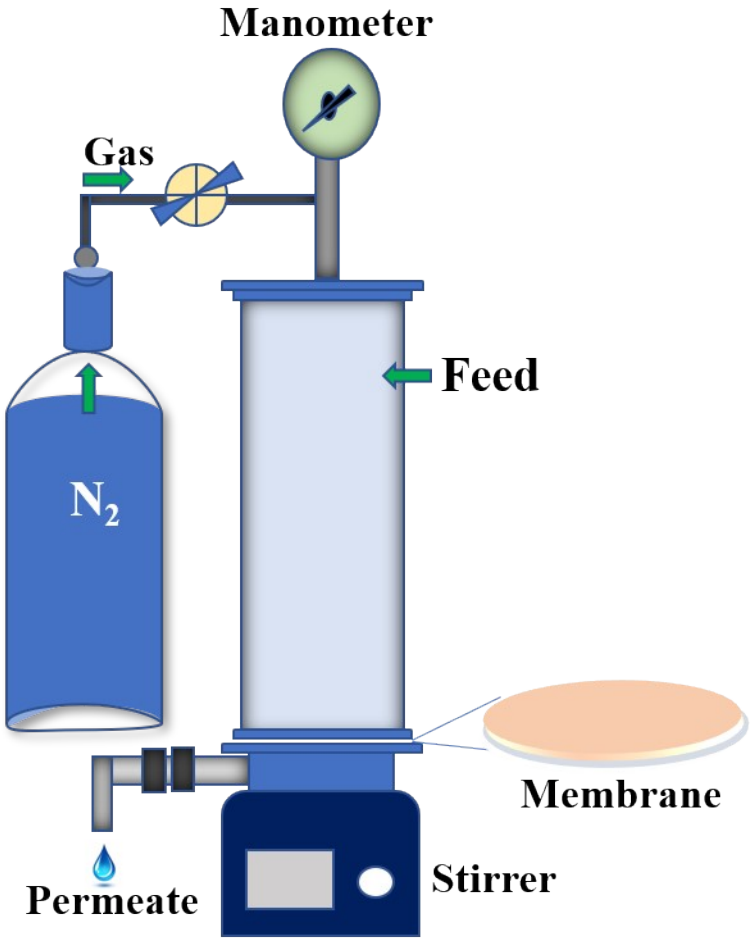

Figure S1. Schematic of custom-made dead-end filtration cell.

2 Result and discussion

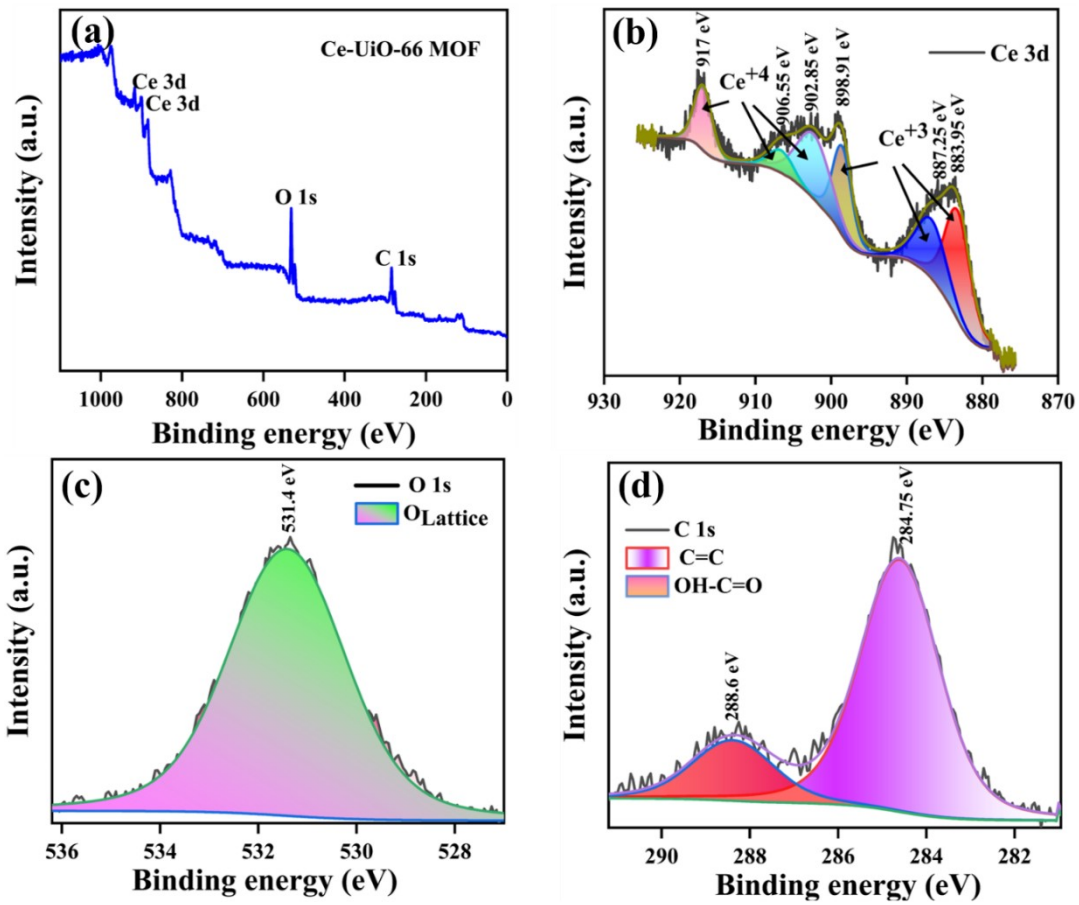

Figure S2. XPS spectra of Ce-UiO66 MOF (a) Survey spectra of MOF (b) High resolution spectra (HR) of Ce 3d (c) HR spectra of O 1s (d) HR spectra of C 1s.

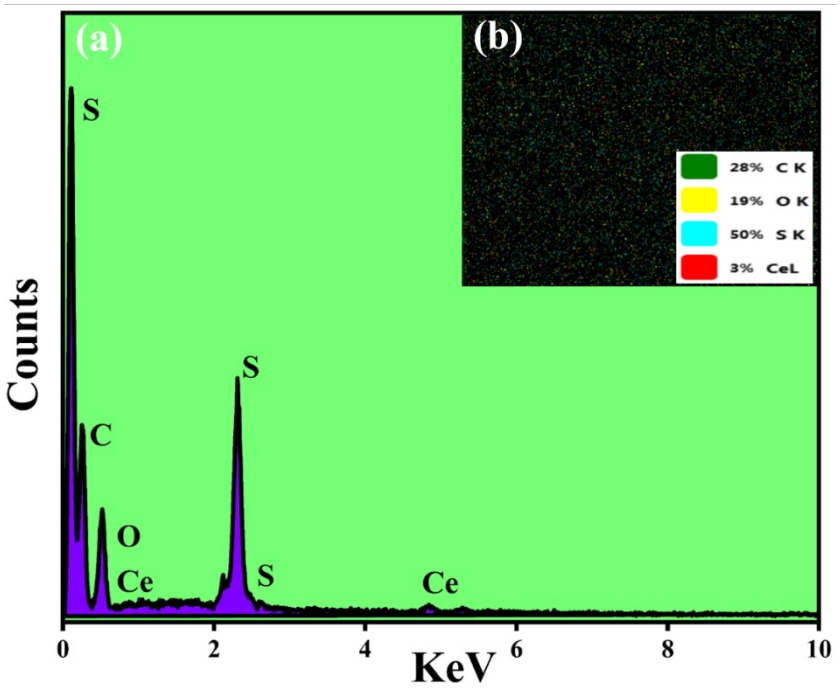

Figure S3. (a) and (b) EDX mapping on surface of M_4.

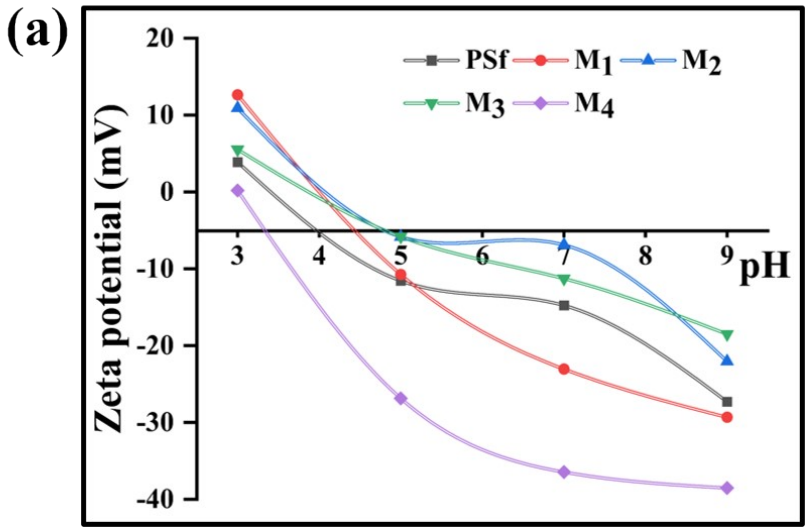

Figure S4. (a) Zeta potential of MOF-PSf composite membranes.