Supplementary Material

Mixed matrix membranes derived from a spirobifluorene polymer of intrinsic microporosity and polyphenylene networks for the separation of toluene from dimethyl sulfoxide

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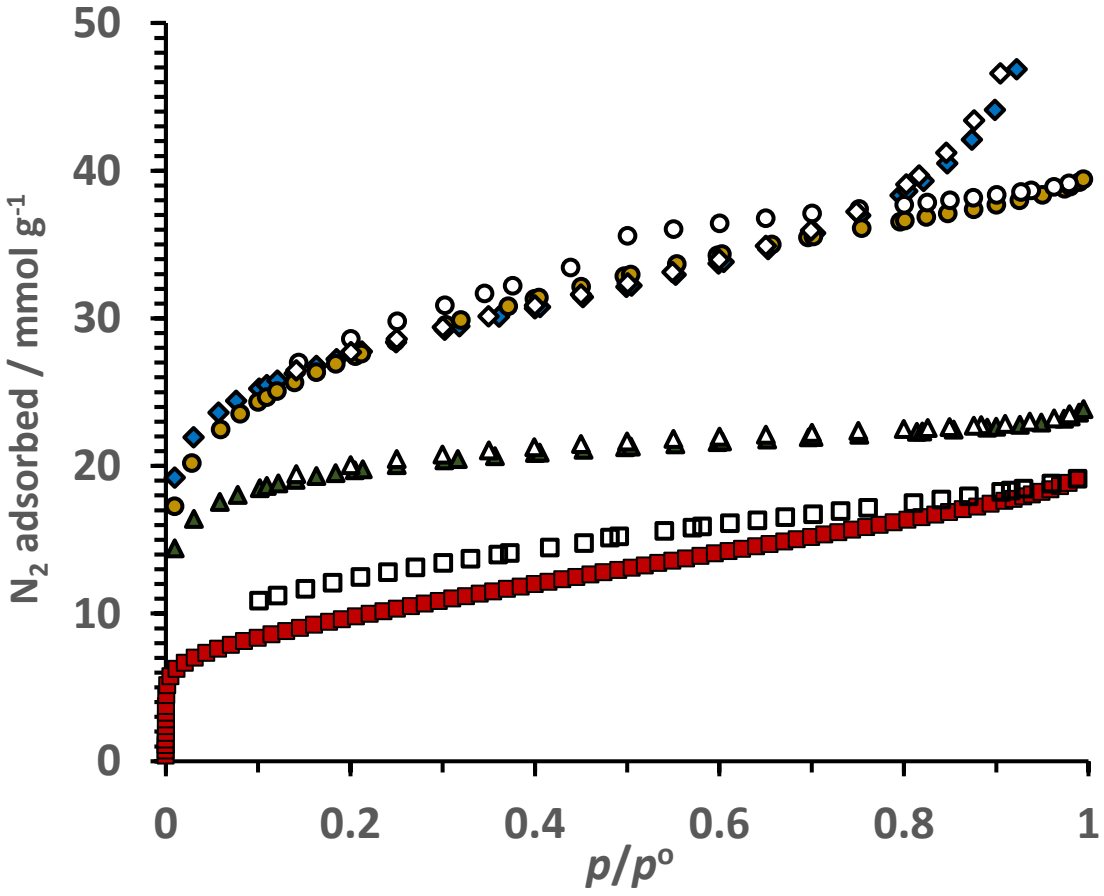

Figure S1. Nitrogen adsorption (solid symbols) and desorption (open symbols) isotherms at 77 K for powdered samples of PIM-SBF (squares) and of polyphenylene networks prepared from HPB (triangles), OPQ (diamonds) and TPB (circles).

Table S1. Pervaporation of toluene/DMSO mixture (77:23 volume ratio) at 65°C: Membrane thicknesses, fluxes and separation factors

Membrane material	Thickness (μm)	Total flux (kg m^{-2} h^{-1})	Toluene flux (kg m^{-2} h^{-1})	DMSO flux (kg m^{-2} h^{-1})	Separation Factor β
SBF-PIM	43	1.992	1.813	0.179	3.87
SBF-PIM + 5 wt% OPQ	100	3.081	2.795	0.286	3.79
SBF-PIM + 5 wt% TPB	120	8.12	7.119	1.001	2.83
SBF-PIM + 5 wt% HPB	100	1.205	1.127	0.078	5.46

Table S2. Pervaporation of toluene/DMSO mixture (77:23 volume ratio) at 65°C: Fluxes normalised for membrane thickness

Membrane material	Normalised total flux (kg μm m^{-2} h^{-1})	Normalised toluene flux (kg μm m^{-2} h^{-1})	Normalised DMSO flux (kg μm m^{-2} h^{-1})
SBF-PIM	85.66	77.96	7.697
SBF-PIM + 5 wt% OPQ	308.1	279.5	28.60
SBF-PIM + 5 wt% TPB	974.4	854.3	120.1
SBF-PIM + 5 wt% HPB	120.5	112.7	7.800