

ELECTRONIC SUPPLEMENTARY INFORMATION (ESI)

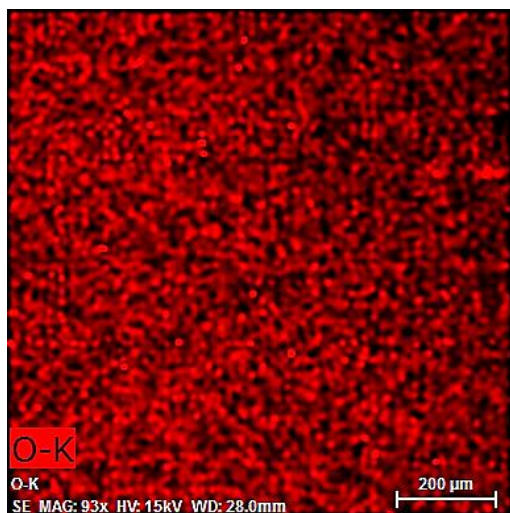
Novel ionic liquid/polyetherimide composite membranes for gas separation: the interplay of transport properties and membrane structure

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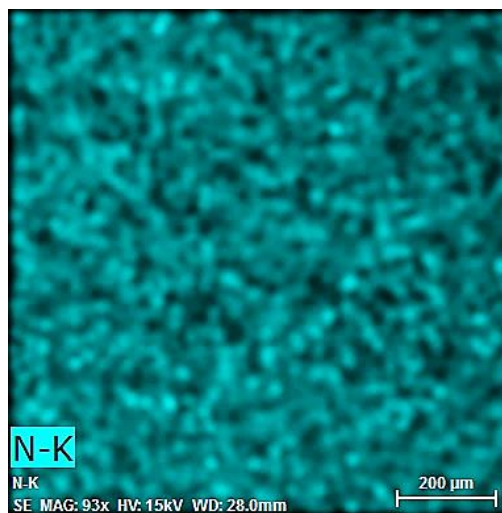
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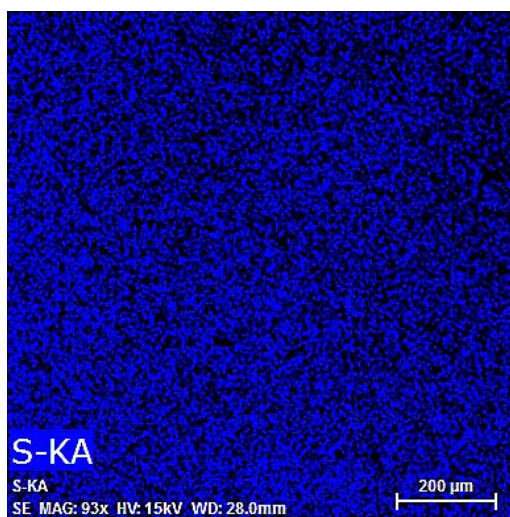
Fig. S1. Photographs of the as-formed free-standing PEI/[BAIm][TFSI] membrane



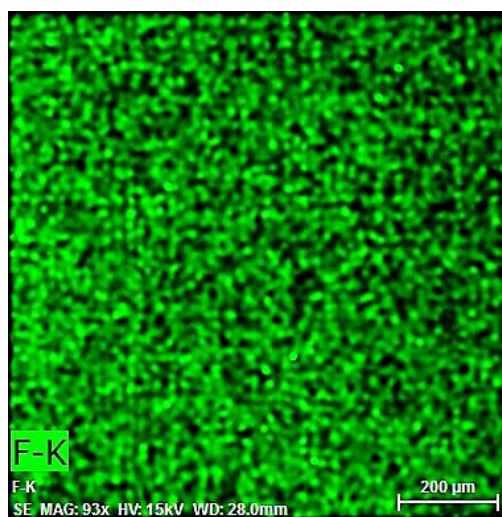
a)



b)



c)



d)

Fig. S2. Elemental mapping analysis of PEI₄₀ showed element distribution of O (a), N (b), S (c), F (d)

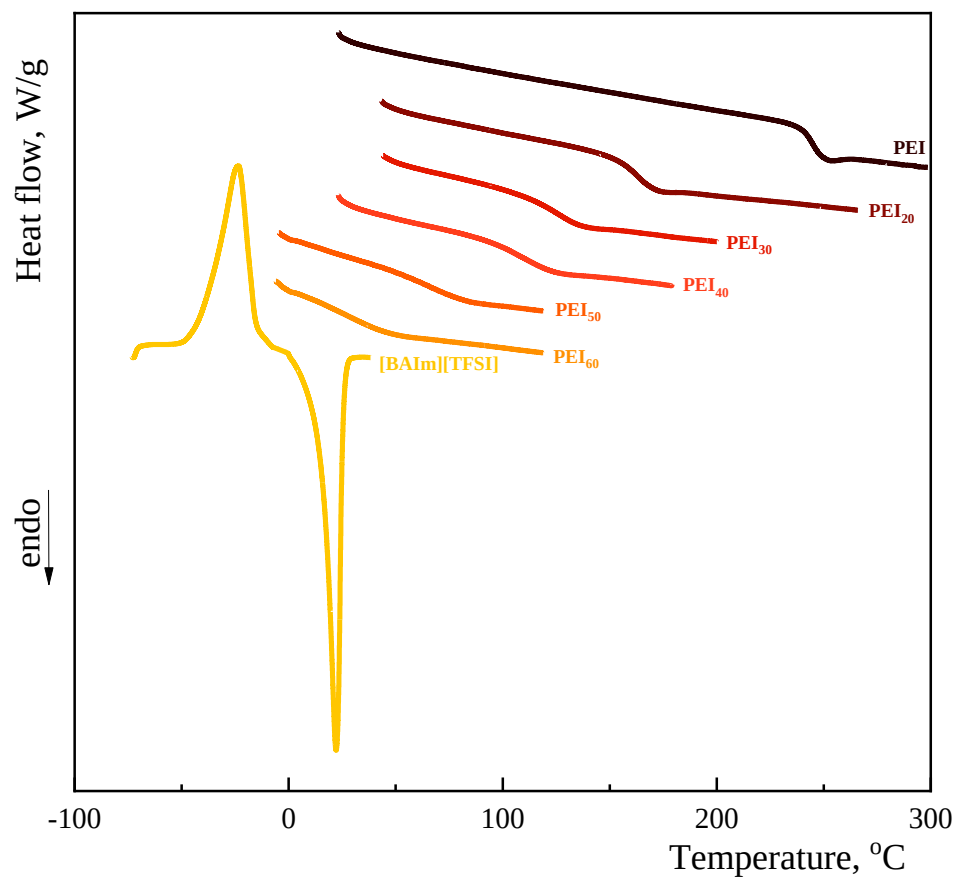


Fig. S3. DSC thermograms of PEI, [BAIm][TFSI] and PEI/[BAIm][TFSI] membranes

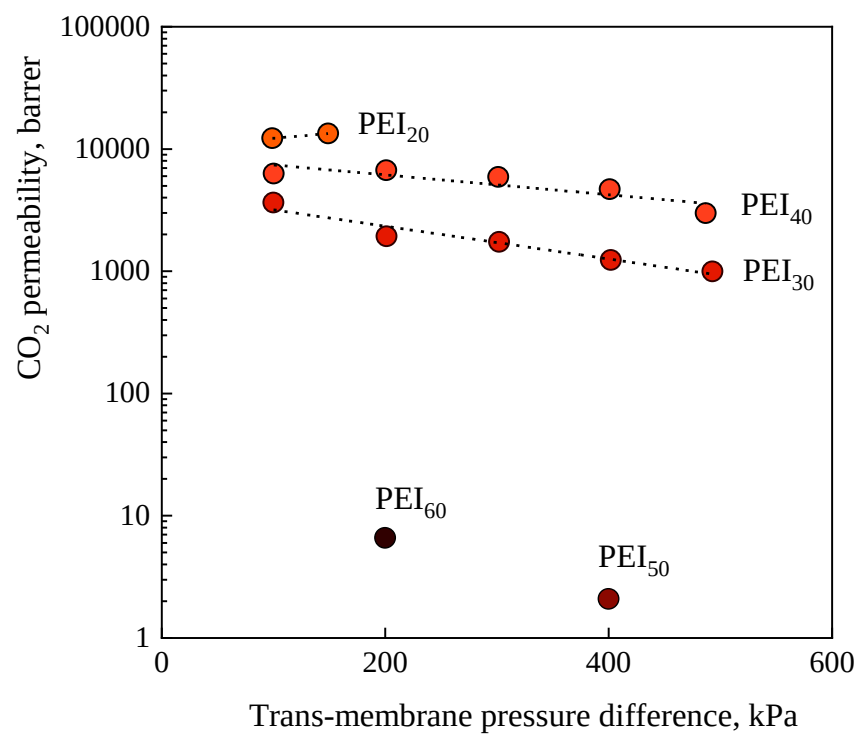


Fig. S4. CO₂ permeability. Trendlines are plotted as a guide to the eye

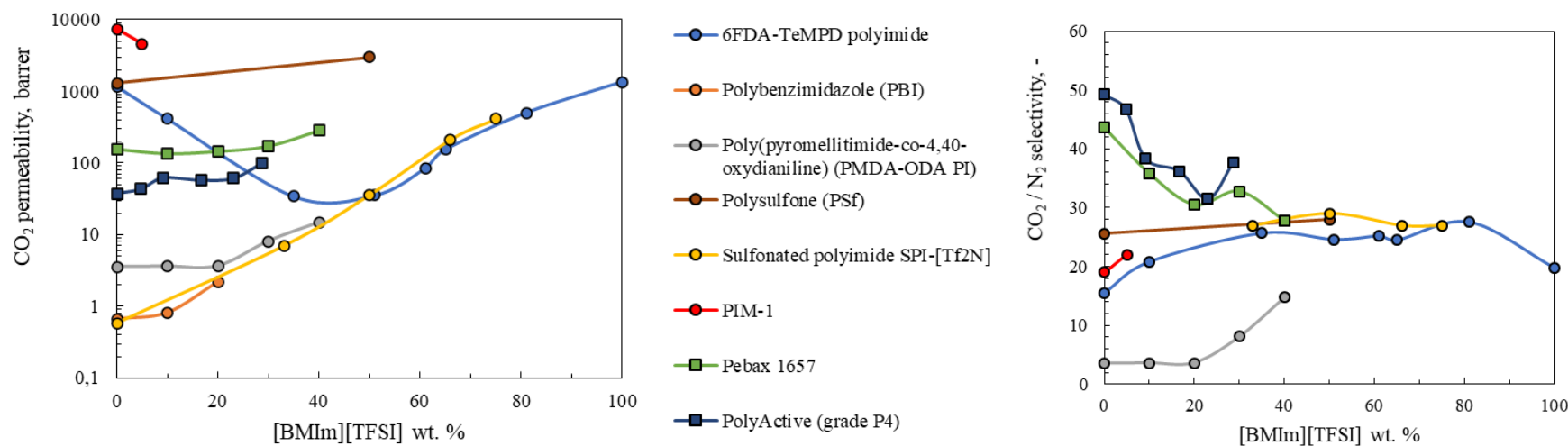


Fig. S5. Permeability of CO₂ and selectivity of CO₂/N₂ pair as a function of IL content for [BMIm][TFSI] from literature [30–33]. Lines are plotted as a guide to the eye for each polymer. Circles = glassy polymers, squares = thermoplastic polymers