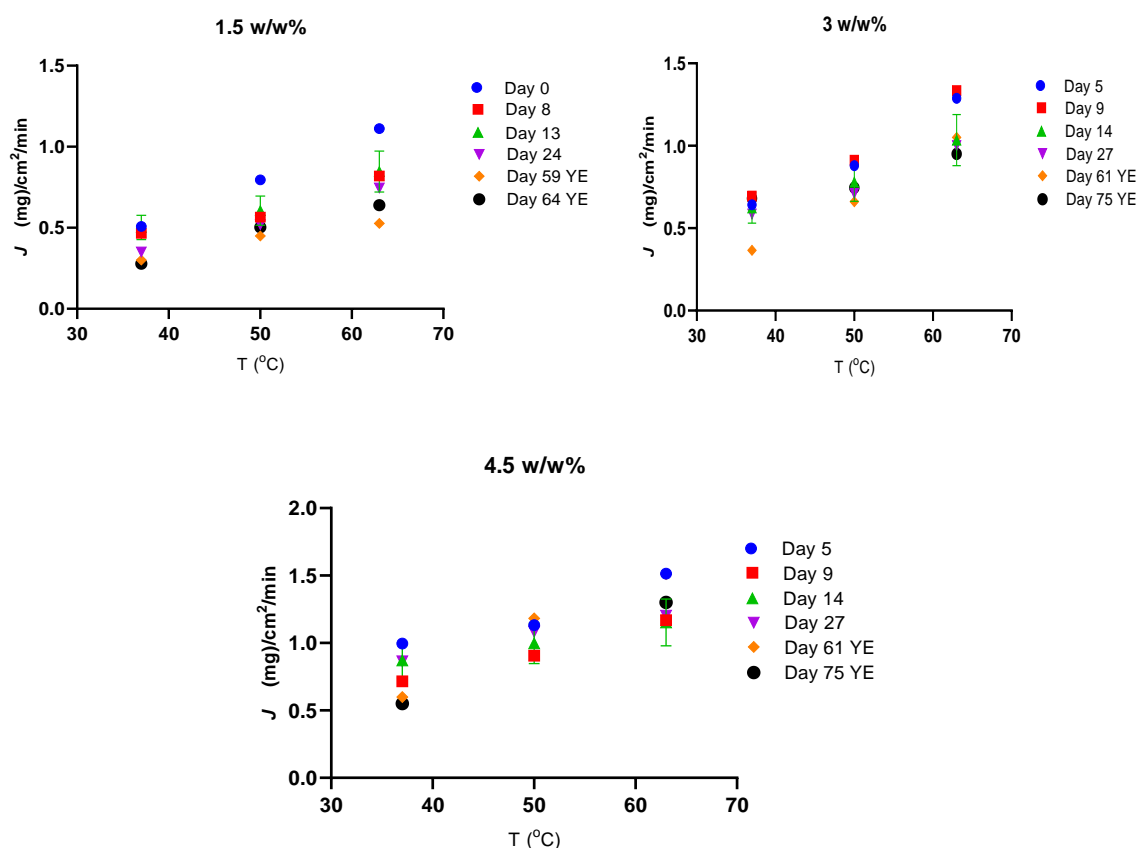


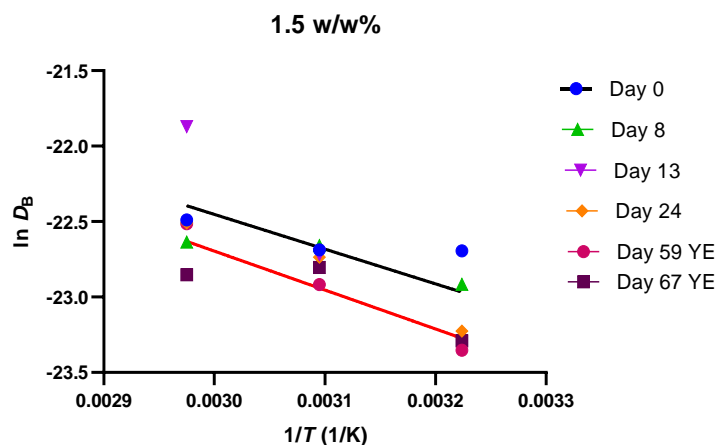
# Supplementary Materials: Transient and Steady Pervaporation of 1-Butanol–Water Mixtures through a Poly[1-(Trimethylsilyl)-1-Propyne] (PTMSP) Membrane

VSSL Prasad Talluri, Petra Patakova, Tomas Moucha and Ondrej Vopicka

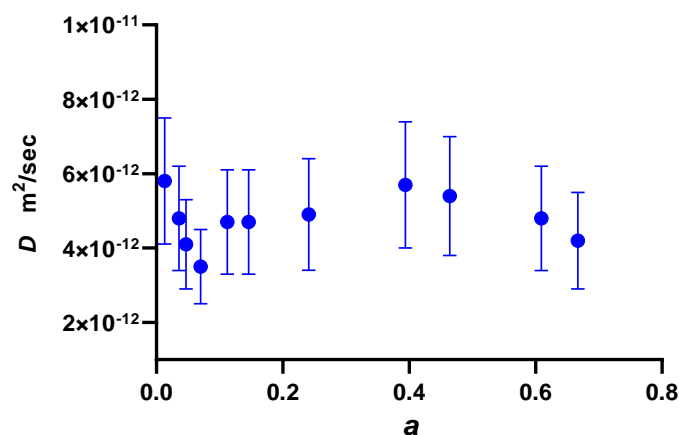
The temperature dependence of total flux is shown in Figure S1.



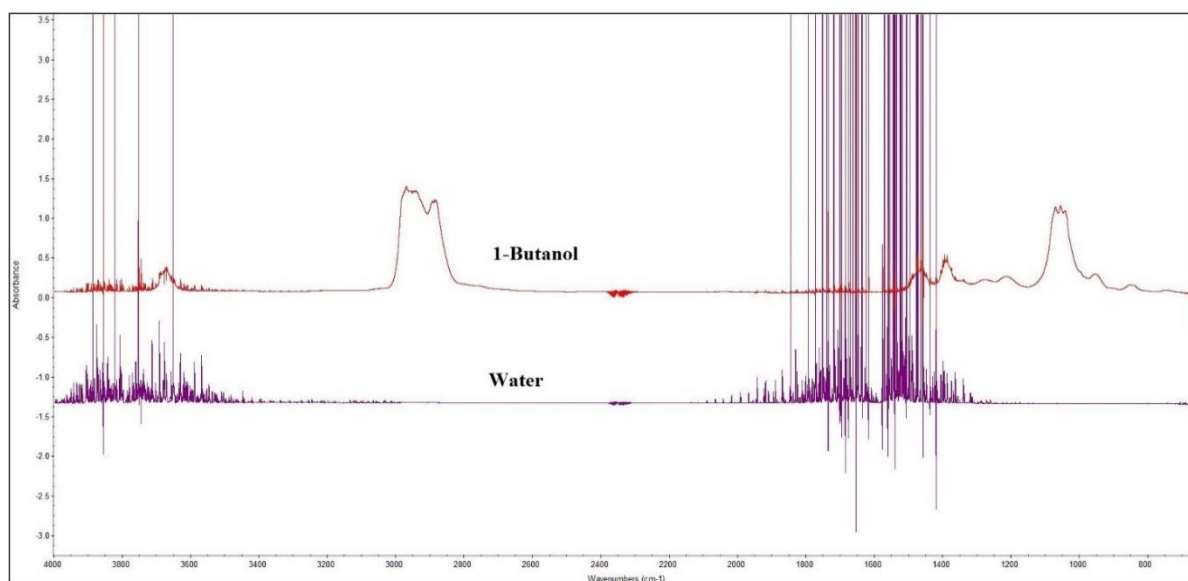
**Figure S1.** Total flux ( $J$ ) at different temperatures as a function of operating temperature. YE is yeast extract at 200 mg / 100 mL water in the feed.



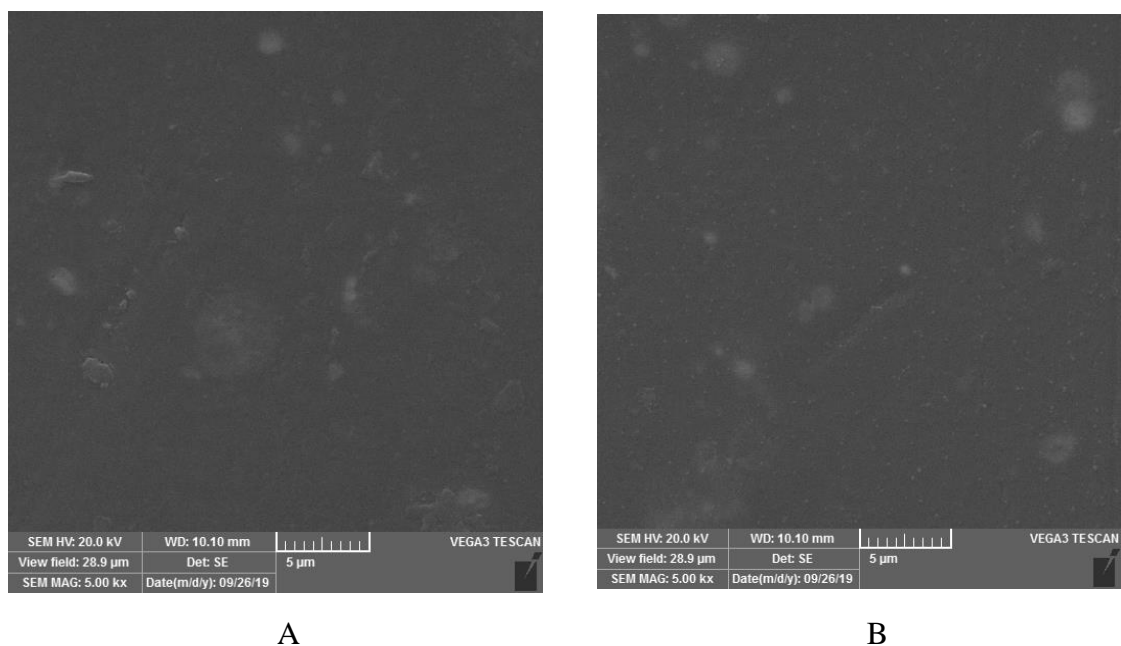
**Figure S2.** Temperature dependence of 1-butanol diffusivity in PTMSP. YE represents yeast extract dosed at 200 mg/100 mL of water in the feed. The black line represents Arrhenius-type model data for all feeds without yeast extract and red lines the model for feeds with yeast extract.



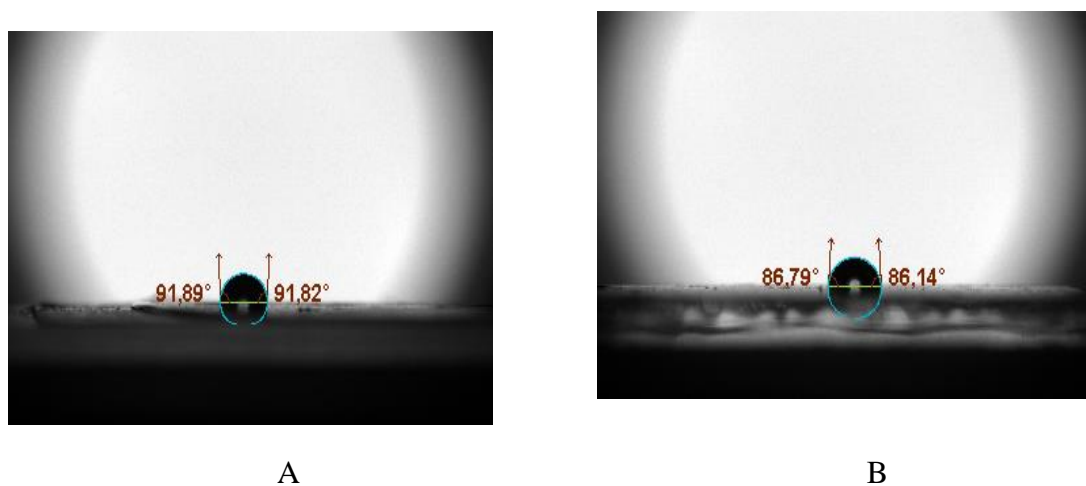
**Figure S3.** Diffusivity of 1-butanol vapors in PTMSP as measured with single vapor microgravimetry at 37 °C.



**Figure S4.** FTIR spectra for pure 1-butanol and water vapors. Bands from 1146.76 to 974.88  $\text{cm}^{-1}$  were used to follow 1-butanol.



**Figure S5.** Cross sectional scanning electron microscope images of aged membrane and fresh PTMSP membrane with high magnification 5000 times a) Aged b) fresh membrane.



**Figure S6.** Contact angle measurement images of fresh and aged membrane PTMSP membrane a) Fresh membrane b) aged membrane.