

# ADVANCED FUNCTIONAL MATERIALS

## Supporting Information

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Tailoring the Separation Behavior of Hybrid Organosilica Membranes by  
Adjusting the Structure of the Organic Bridging Group

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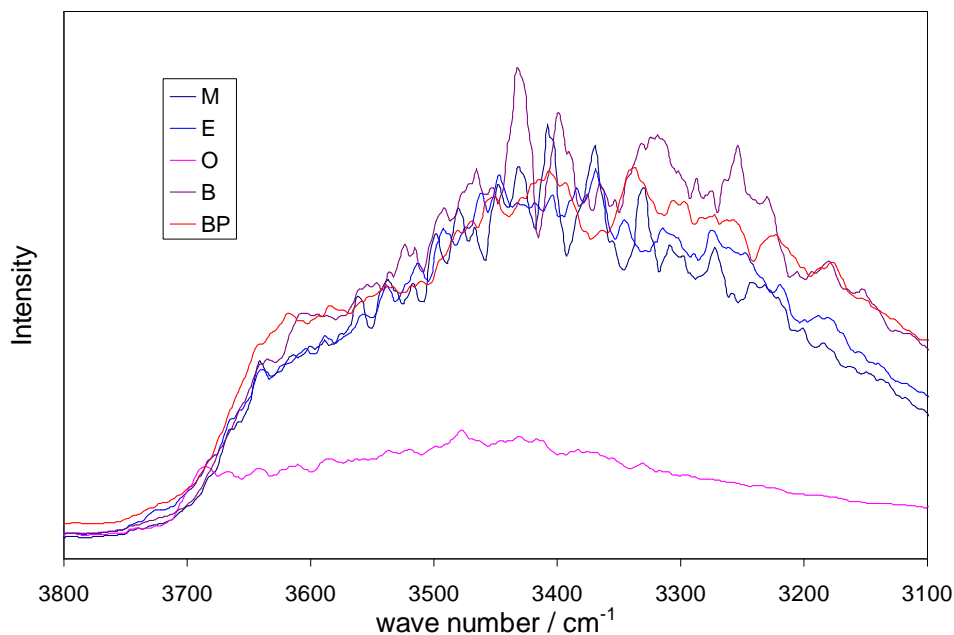
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**Figure S1.** IR spectrum of the characteristic vibrations of water (Figure) in the 3000–3700  $\text{cm}^{-1}$  band corresponding to –OH stretching modes. The intensities are significantly lower for the octane-bridged material than for the other organosilicas. As the storage conditions (ambient air) were identical for all materials prior to measurement, the difference in intensity is likely related to a more hydrophobic character of the octane-bridged material.



**Figure S2.** Pore size distributions for organosilica and  $\gamma\text{-Al}_2\text{O}_3$  membranes, calculated toward using the Kelvin equation via normalized helium permeances dependent on the water vapor pressure  $p_{\text{H}_2\text{O}}$  (baselines shifted on the y-axis). A substantial difference is observed between the pore size distributions of the organosilica membranes and that of the supporting mesoporous  $\gamma\text{-Al}_2\text{O}_3$  membrane. The pore-size distributions of the organosilica membranes reveal very few pores larger than 2 nm, which confirms that these are microporous and essentially free of defects.

