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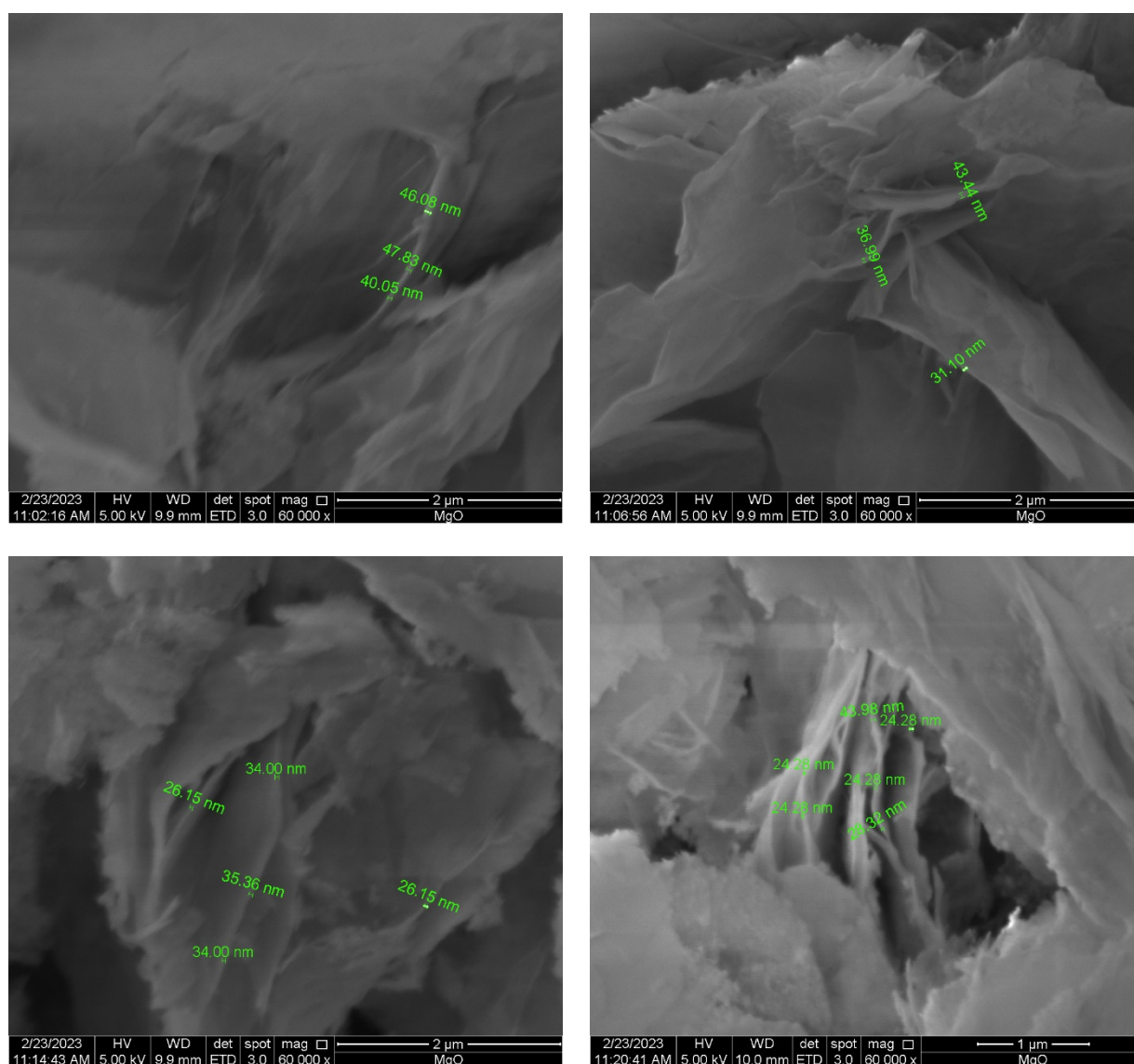
# Polydimethylsiloxane/Magnesium Oxide Nanosheet Mixed Matrix Membrane for CO<sub>2</sub> Separation Application

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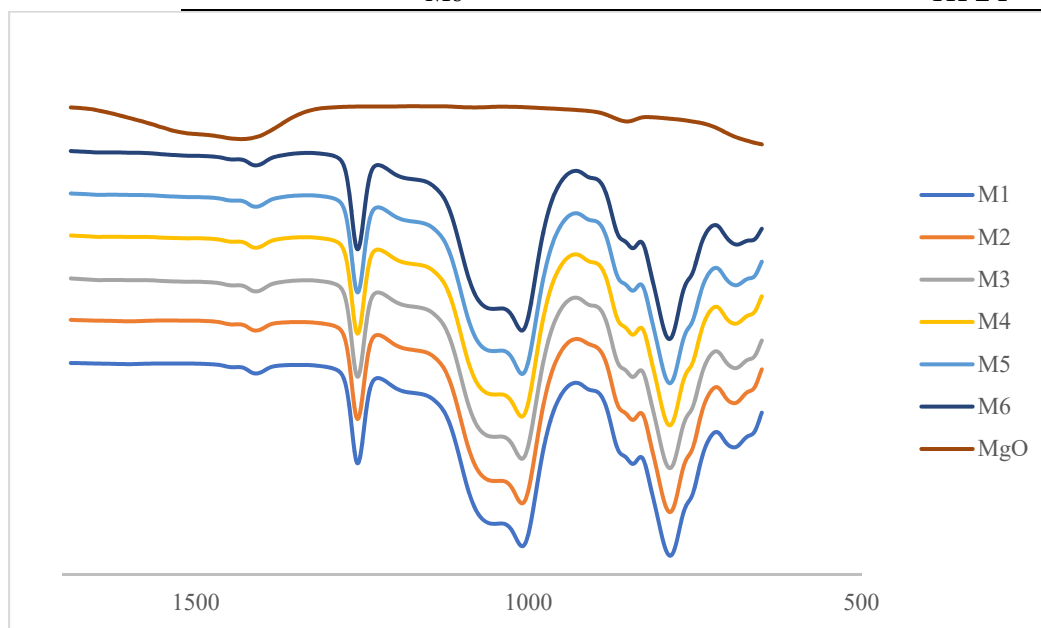
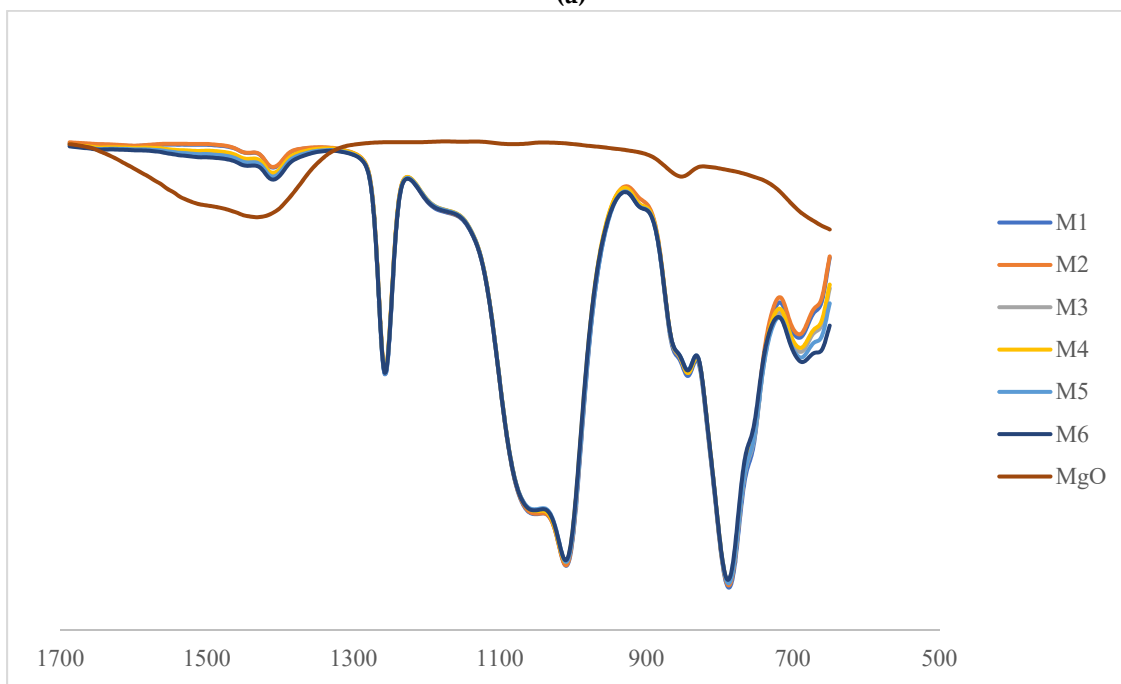
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**Figure S1.** Average thickness of synthesized MgO nanosheet estimated from FESEM images.

**Table S1.** Thickness of the membranes fabricated by solvent evaporation method.

Membrane	Thickness ( $\mu\text{m}$ )
M1	$424 \pm 30$
M2	$262 \pm 2$
M3	$256 \pm 1$
M4	$311 \pm 6$
M5	$300 \pm 16$
M6	$441 \pm 1$

**(a)****(b)****Figure S2.** (a) Magnified spectra from 600 to 1700  $\text{cm}^{-1}$  (b) difference in the intensity of the peak in the region from 600 to 1700  $\text{cm}^{-1}$ .