

# Poly(ethylene glycol) Diacrylate Iongel Membranes Reinforced with Nanoclays for CO<sub>2</sub> Separation

Ana R. Nabais <sup>1,†</sup>, Rute O. Francisco <sup>1,†</sup>, Vítor D. Alves <sup>2</sup>, Luísa A. Neves <sup>1,\*</sup> and Liliana C. Tomé <sup>1,\*</sup>

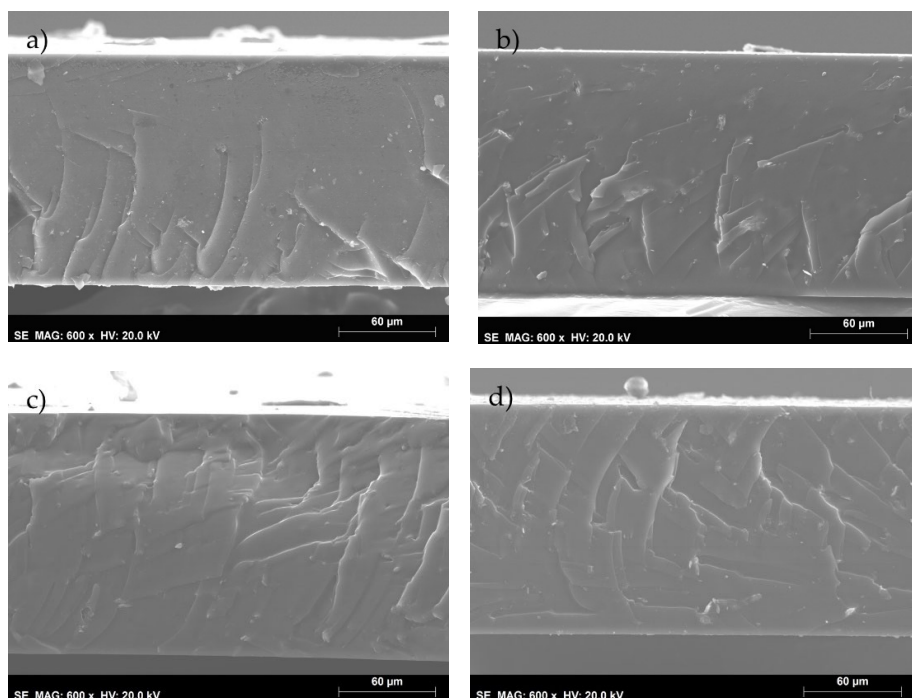
<sup>1</sup> LAQV-REQUIMTE, Department of Chemistry, NOVA School of Science and Technology, FCT NOVA, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal; a.nabais@campus.fct.unl.pt (A.R.N.); rr.francisco@campus.fct.unl.pt (R.O.F.)

<sup>2</sup> LEAF—Linking Landscape, Environment, Agriculture and Food—Research Center, Associated Laboratory TERRA, Instituto Superior de Agronomia, Universidade de Lisboa, Tapada da Ajuda, 1349-017 Lisbon, Portugal; vitoralves@isa.ulisboa.pt

\* Correspondence: lan11892@fct.unl.pt (L.A.N.); liliana.tome@fct.unl.pt (L.C.T.)

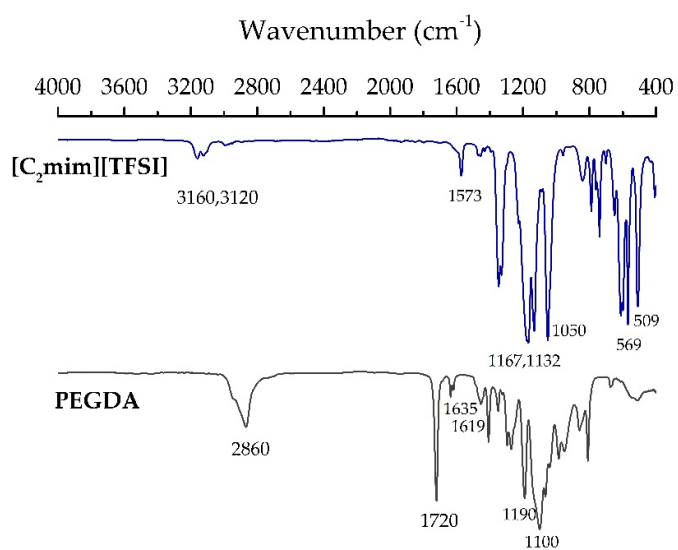
† Ana R. Nabais and Rute O. Francisco contributed equally to this work.

## Scanning Electron Microscopy (SEM)



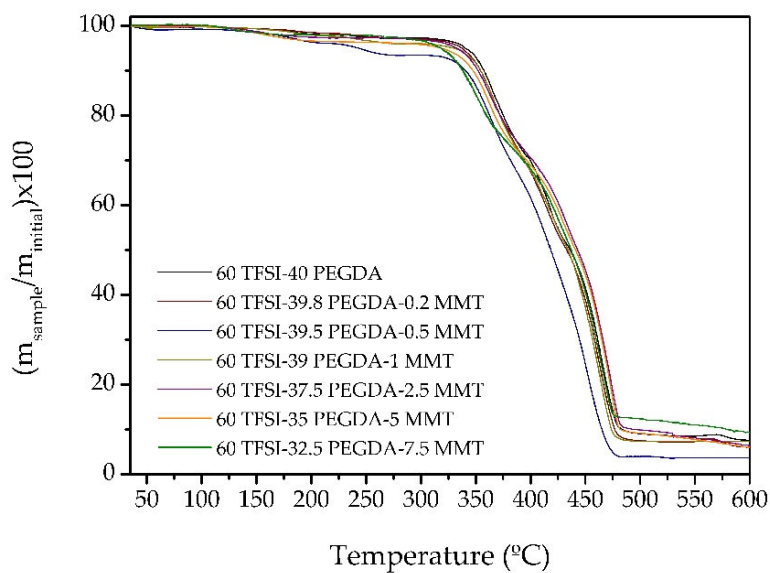
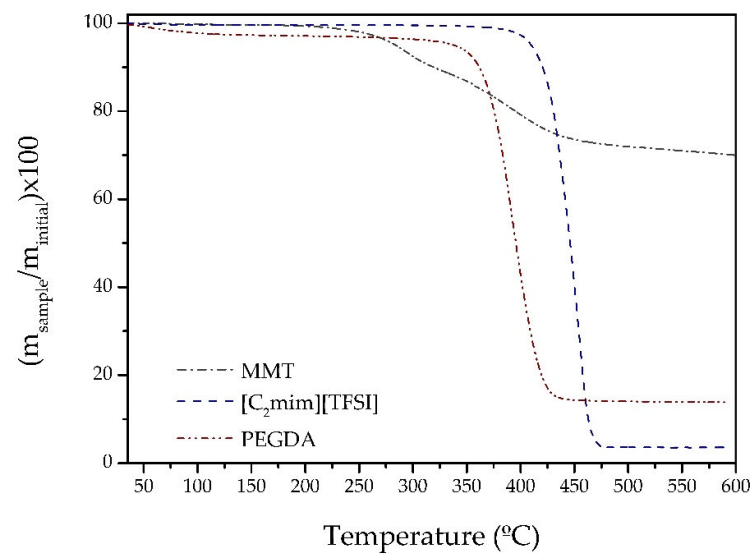
**Figure S1.** -SEM images of the iongels containing 0.5 (a), 1 (b), 2.5 (c) and 5 (d) wt% MMT.

## Attenuated Total Reflectance-Fourier Transform Infrared Spectroscopy (ATR-FTIR)



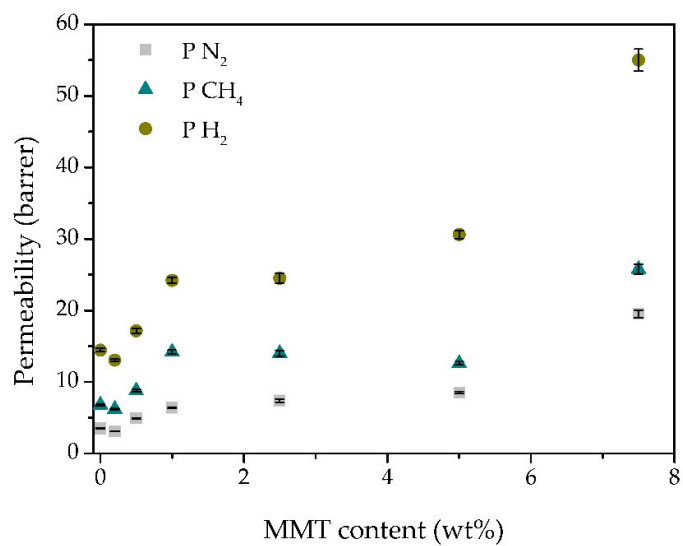
**Figure S2.** FTIR spectra of the [C<sub>2</sub>mim][TFSI] IL and PEGDA network.

## Thermogravimetric Analysis (TGA)



**Figure S3.** – Thermogravimetric profiles of the neat iongel components (top) and all iongels prepared with different MMT contents (bottom).

## Gas permeation results



**Figure S4.** - H<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub> permeabilities obtained for the prepared iongels (at 60 wt% IL), as a function of the MMT content.