Supporting Information

Gas Separation Membranes Made through Thermal Rearrangement of ortho-methoxypolyimides

Bibiana Comesaña-Gándara a,b,c,d, José G. de la Campa a,* , Antonio Hernández b, Hye Jin Jo d, Young Moo Lee d,* , Javier de Abajo b, Angel E. Lozano a,b,d,*

a Institute of Polymer Science and Technology, ICTP-CSIC, Madrid, Spain
b SMAP UA-UVA_CSIC, University of Valladolid, Valladolid, Spain
c IU Cinquima, University of Valladolid, Valladolid, Spain
d Department of Energy Engineering, College of Engineering, Hanyang University, Seoul 133-791, Republic of Korea
*(A. E. L) Telephone: +34-91-561-88-06 Ext. 320; E-mail. lozano@ictp.csic.es
*(J. G. C) Telephone: +34-91-562-29-00 Ext. 350; E-mail. jcampa@ictp.csic.es
*(Y. M. L) Telephone: +82-2-2220-0525; E-mail. ymlee@hanyang.ac.kr

Abbreviations

PI-OH Polyimide membrane with ortho-positioned OH group
TR-OH350 Polyimide membrane with ortho-positioned OH group heated at 350 °C for 1h
TR-OH400 Polyimide membrane with ortho-positioned OH group heated at 400 °C for 1h
TR-OH450 Polyimide membrane with ortho-positioned OH group heated at 450 °C for 30 minutes

PI-OAc Polyimide membrane with ortho-positioned OAc group
TR-OAc350 Polyimide membrane with ortho-positioned OAc group heated at 350 °C for 1h
TR-OAc400 Polyimide membrane with ortho-positioned OAc group heated at 400 °C for 1h
TR-OAc450 Polyimide membrane with ortho-positioned OAc group heated at 450 °C for 30 minutes

PI-OMe Polyimide membrane with ortho-positioned OMe group
TR-OMe350 Polyimide membrane with ortho-positioned OMe group heated at 350 °C for 1h
TR-OMe400 Polyimide membrane with ortho-positioned OMe group heated at 400 °C for 1h
TR-OMe450 Polyimide membrane with ortho-positioned OMe group heated at 450 °C for 30 minutes
Fig. S1. Glass transition temperatures of precursor polyimides determined by MDSC.
Fig. S2. Wide angle X-ray diffraction (WAXD) patterns of (a) PI-OH, (b) PI-OAc and (c) PI-OMe precursor polyimides along with the TR derived membranes, treated at different temperatures and heating times.
Fig. S3. ATR-FTIR spectra of (a) PI-OH, (b) PI-OAc and (c) PI-OMe precursor polyimides and thermally rearranged analog membranes, treated at different temperatures and heating times.