Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Supporting Information

Highly Permeable Membrane Materials for CO_2 Capture

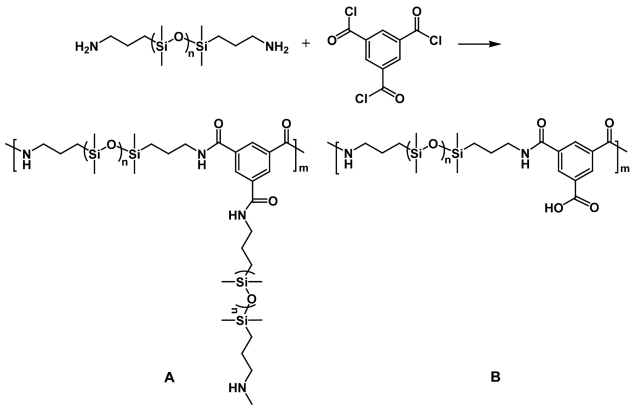
Qiang Fu,[1,2] Andri Halim,[1,2] Jinguk Kim,[1,2] Joel Scofield,[1,2] Paul A. Gurr,[1,2] Sandra E. Kentish[1] and Greg G. Qiao[1,2]*

[1] Cooperative Research Centre for Greenhouse Gas Technologies, Department of Chemical and Biomolecular Engineering, The University of Melbourne, VIC 3010, Australia.

[2] Polymer Science Group, Department of Chemical and Biomolecular Engineering, The University of Melbourne, VIC 3010, Australia

* Corresponding author. Tel: +61 3 83448665; Fax: +61 3 8344 4153.

E-mail address: gregghq@unimelb.edu.au (G. G. Qiao)



Scheme S1. Possible polymerization reaction between NH_2-PDMS-NH_2 and TMC to form (A) fully cross-linked PDMS chain, (B) linear PDMS chain with pendant -COOH groups.

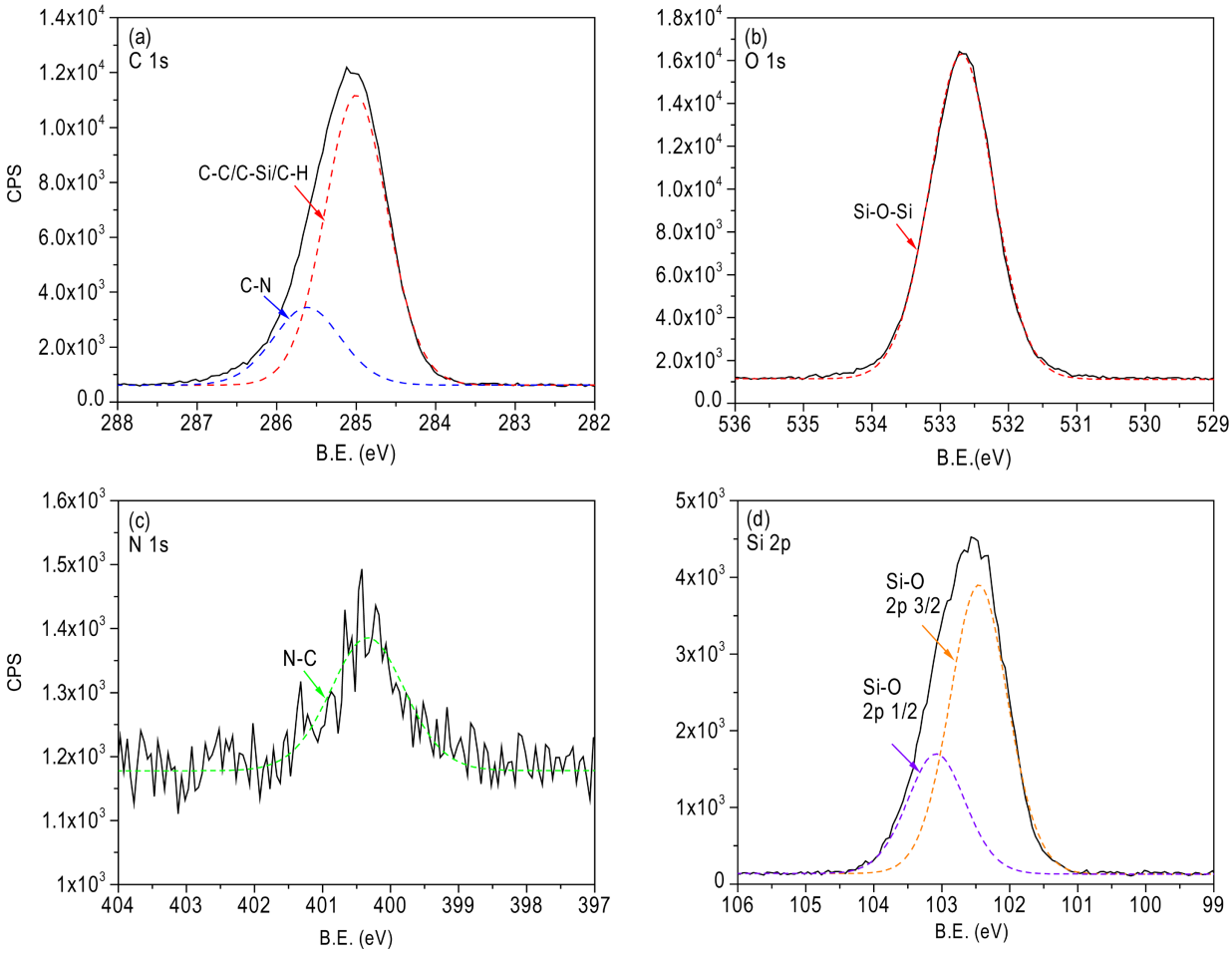


Figure S1. XPS C 1s (a), O 1s (b), N 1s (c) and Si 2p (d) high-resolution lines for the cross-linked PDMS gutter layer.

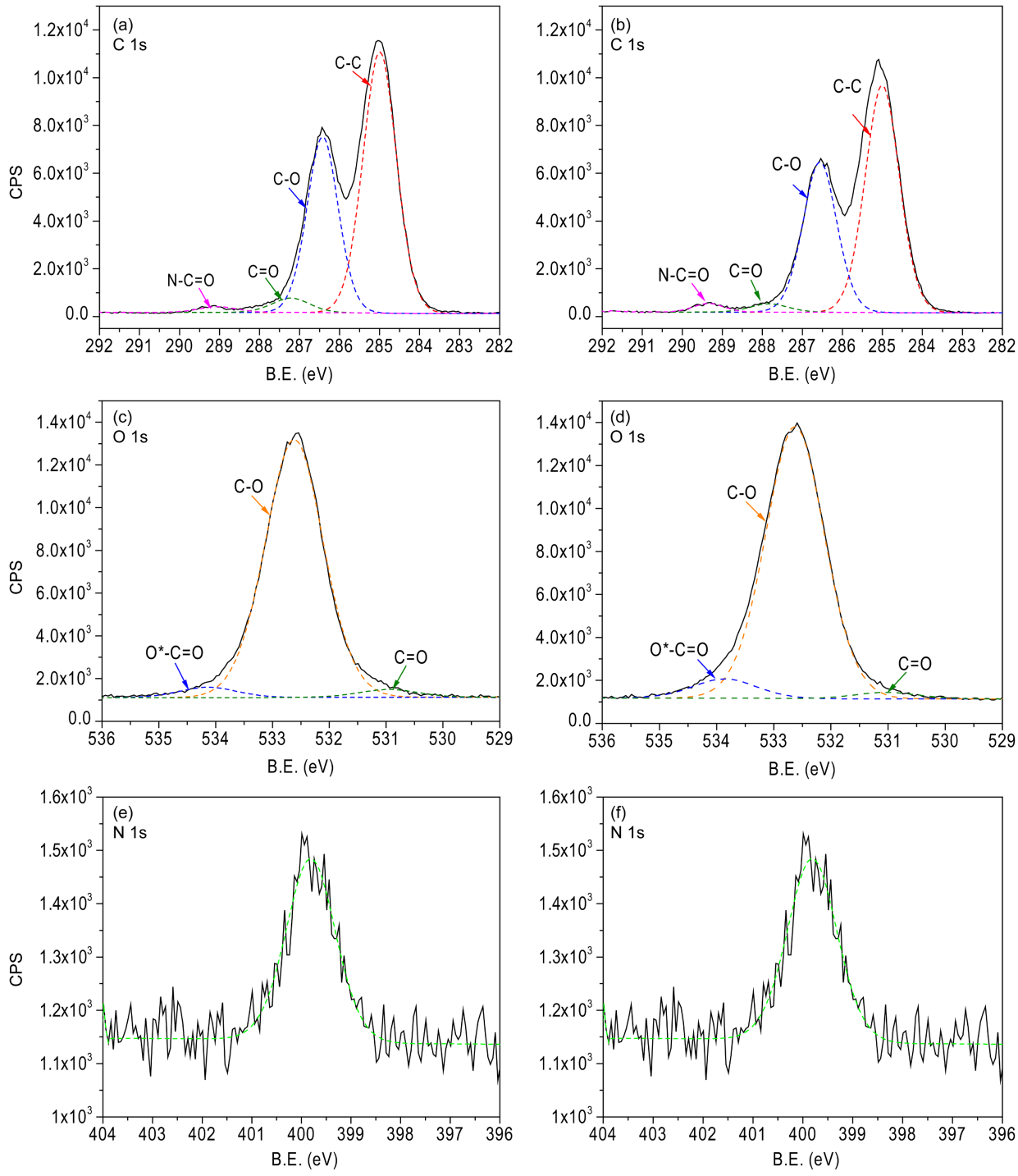


Figure S2. XPS C 1s, O 1s and N 1s high-resolution lines of the Pebax®2533 active layer (a, c and e) and P1-50 (Pebax®2533/P1 wt. 50%) active layer (b, d and f).