Supporting Information

Adapting Aluminum-Doped Zinc Oxide for Electrically Conductive Membranes Fabricated by Atomic Layer Deposition

Wulin Yang[†], Moon Son[†], Ruggero Rossi[†], Johannes S. Vrouwenvelder[‡] and Bruce E. Logan[*, †]

[†]Department of Civil and Environmental Engineering, The Pennsylvania State University, University Park, Pennsylvania 16802, United States

[‡]Water Desalination and Reuse Center (WDRC), Division of Biological and Environmental Science and Engineering (BESE), King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia

*Corresponding Author. Telephone: +1 814 863 7908. Fax: +1 814 863 7304.
E-mail: blogan@psu.edu

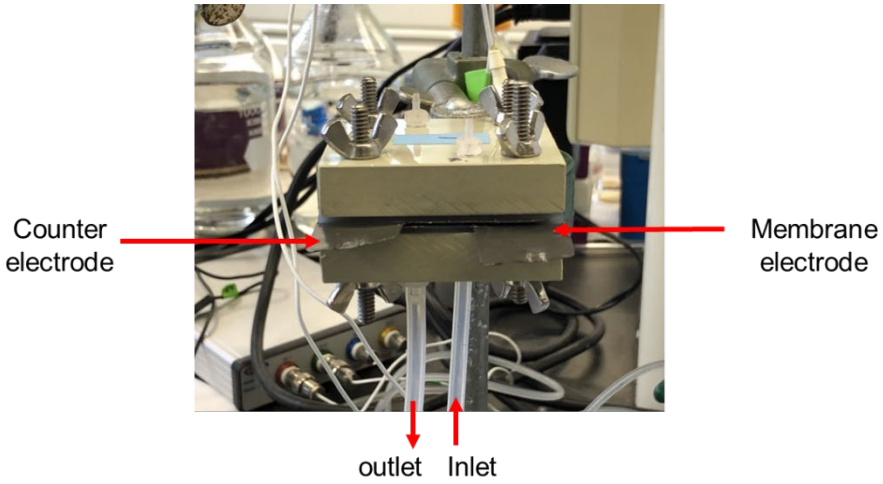

Figure S1. The customized membrane flow cell with membrane electrode and counter electrode (Ti foil).

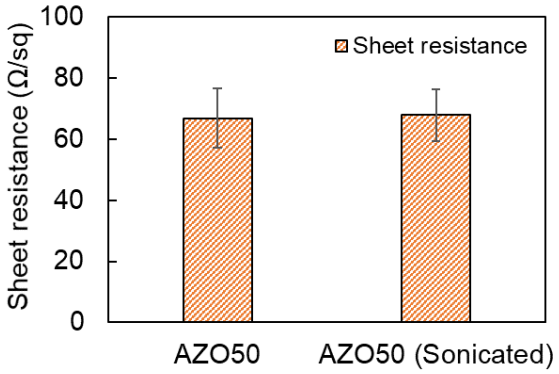

Figure S2. Sheet resistances of AZO50 membranes before and after sonication for 30 min.

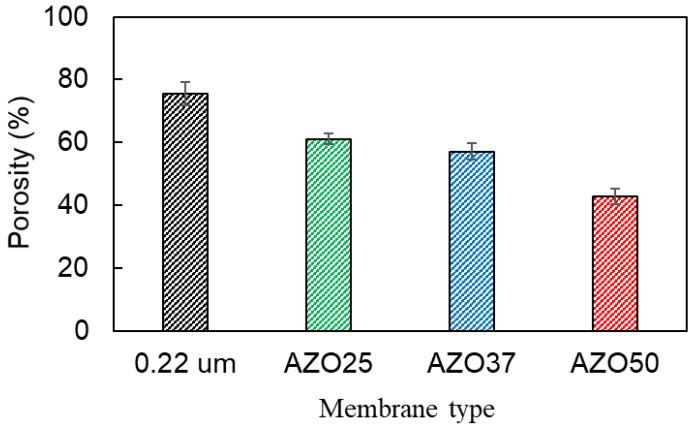

Figure S3. Porosity of 0.22 µm plain, AZO25, AZO37 and AZO50 membranes.

Table S1. Membrane thicknesses

Membrane type	Thickness/μm
0.22 μm	125 ± 2
AZO25	124 ± 1
AZO37	126 ± 2
AZO50	122 ± 1

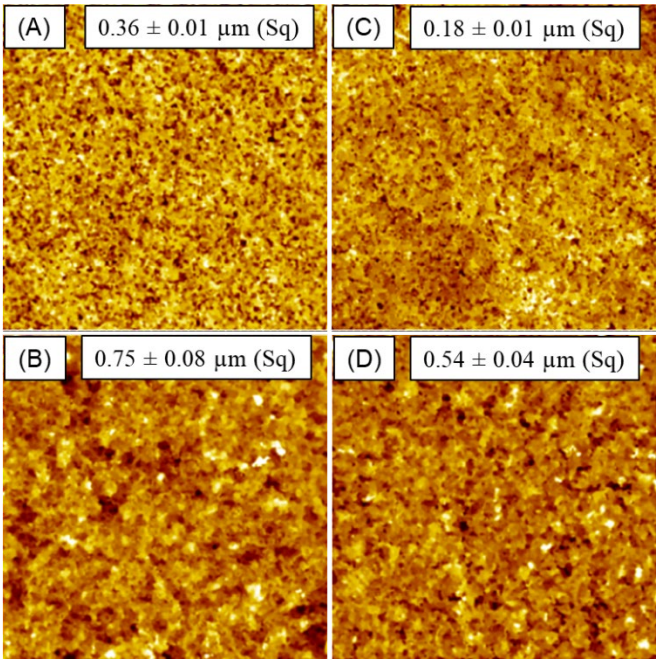

Figure S4. Optical profilometry surface images of (A) 0.22 μm, (B) AZO25, (C) AZO37 and (D) AZO50 membranes with sampling area of 88 × 88 μm^2 with the root mean square height (Sq) data.

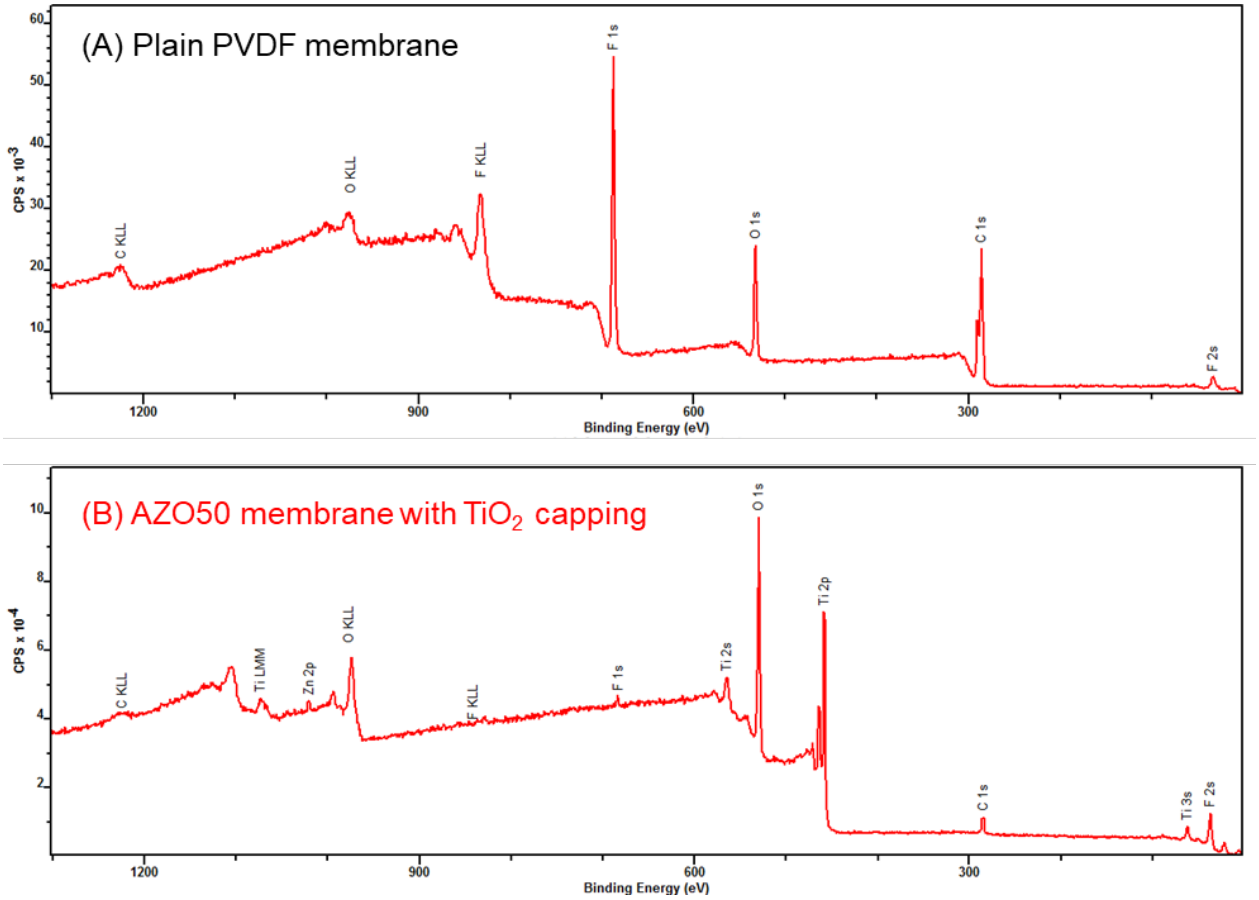

Figure S5. XPS spectra for (A) plain PVDF membrane and (B) AZO50 membrane with TiO_2 capping.