Insights into the pore tuning of Triazine-based nitrogen-rich organoalkoxysilane membranes for use in water desalination

Suhaina M. Ibrahim, a,b Rong Xu, c Hiroki Nagasawa, a Akinobu Naka, e Joji Ohshita, d Tomohisa Yoshioka, a Masakoto Kanezashi, a and Toshinori Tsuru a*

a Department of Chemical Engineering, Hiroshima University, 1-4-1 Kagamiyama, Higashihiroshima, 739-8527, Japan
b Advanced Material Research Centre (AMREC), SIRIM Berhad, Lot 34, Jalan Hi-Tech 2/3, Kulim Hi-Tech Park, 09000 Kulim, Kedah, Malaysia
c School of Petrochemical Engineering, Changzhou University, Changzhou, 213164, China
d Department of Applied Chemistry, Hiroshima University, 1-4-1 Kagamiyama, Higashihiroshima, 739-8527, Japan
e Department of Life Science, Kurashiki University of Science and the Arts, 2640 Nishinoura, Tsurajima, Kurashiki, Okayama 712-8505, Japan

Electronic Supporting Information-1 (ESI-1)

Gas Permeation Properties of TTESPT membranes-Arrhenius Plot

Fig. ESI-1 shows the Arrhenius plot of the gas permeances observed for TTESPT-60 and TTESPT-240 derived silica membrane calcined at temperatures of 300°C. The gas permeances for both membranes increased with the permeation temperature, revealing that the activated diffusion transport mechanism was dominant.

Fig. ESI-1 Arrhenius plot of the gas permeances observed for TTESPT-60 and TTESPT-240 derived silica membrane calcined at temperatures of 300°C