

Supporting Information

for

Controlling Fuel Crossover and Hydration in Ultra-thin Proton Exchange Membrane based Fuel Cells using Pt-nanosheet Catalysts

*Ruijie Wang^{a,b**}, Wenjing Zhang^{a,c**}, Gaohong He^b and Ping Gao^{a*}*

^a Department of Chemical and Biomolecular Engineering, Hong Kong University of Science and Technology, Clear Water Bay, Kowloon, Hong Kong SAR, People's Republic of China

^b The R&D Center of Membrane Science and Technology, Dalian University of Technology, 2 Linggong Road, Dalian, Liaoning Province, People's Republic of China.

^c Department of Energy Conversion and Storage, Technical University of Denmark, DK-4000 Roskilde, Denmark

*Corresponding Author: E-mail: kepgao@ust.hk

** Joint First Authors: These authors contributed equally.

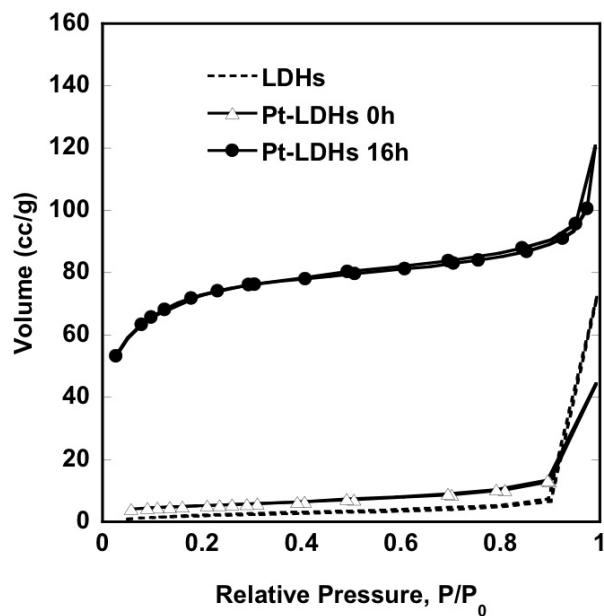


Figure S1. Nitrogen adsorption/desorption isotherms of LDHs and Pt-LDHs samples at 77K.

Table S1. BET surface area and pore volume of Pt-LDHs nanocatalysts.

Samples	BET surface area (m ² /g)	Pore volume (cm ³ /g)
LDHs	8.3	0.11
Pt-LDHs 0h	18.1	0.07
Pt-LDHs 16h	258.9	0.18

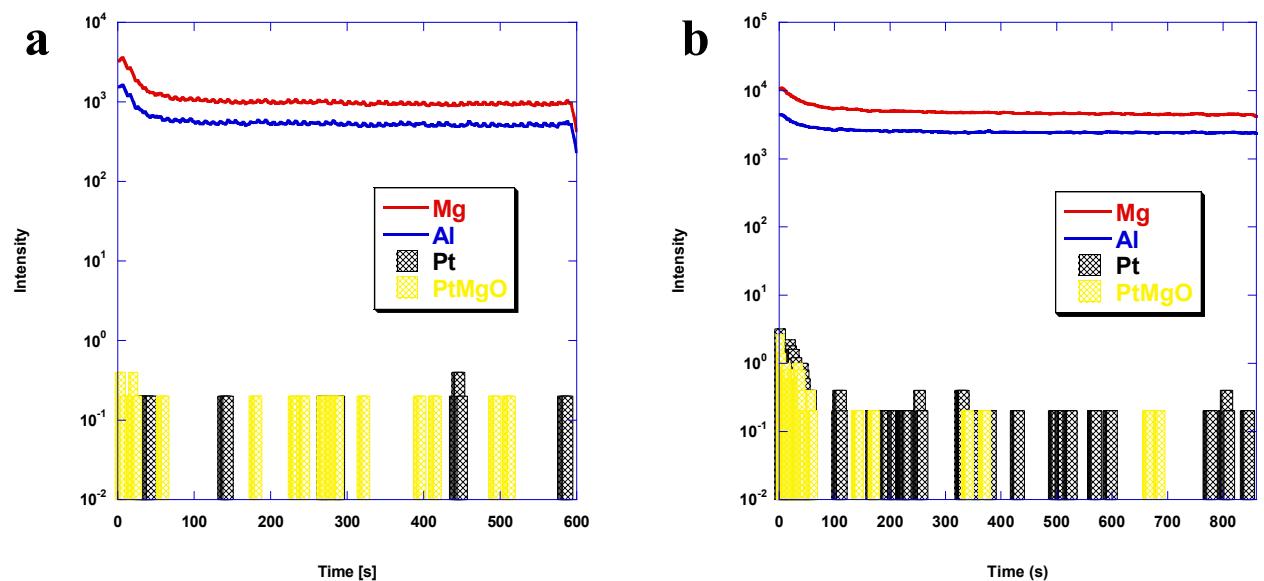


Figure S2. Dynamic profiling ToF-SIMS spectra for Pt-LDHs nanocatalysts. (a) Pt-LDHs 0h.
(b) Pt-LDHs 16h.