## **Supporting Information**

## Polypropylene-grafted Multi-walled Carbon Nanotubes Reinforced Polypropylene Composite Bipolar Plates in Polymer Electrolyte Membrane Fuel Cells

Min-Chien Hsiao<sup>*a*,§</sup>, Shu-Hang Liao<sup>*a*,§</sup>, Yu-Feng Lin<sup>*b*</sup>, Cheng-Chih Weng<sup>*a*</sup>, Chen-Chi M. Ma<sup>*a*,\*</sup>, Shie-Heng Lee<sup>*a*</sup>, Han-Min Tsai<sup>*a*</sup>, Ming-Yu Yen<sup>*a*</sup>, Po-I Liu<sup>*a*</sup>

<sup>a</sup> Department of Chemical Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

<sup>b</sup>Chemicals and Chemical Engineering, Chung Shan Institute of Science and Technology, Taoyuan 325, Taiwan, ROC

<sup>§</sup> Equal contribution

\* Corresponding author: Chen-Chi M. Ma

Department of Chemical Engineering, National Tsing Hua University, Hsinchu 30013, Taiwan

Tel: 886-35713058 Fax: 886-35715408

E-mail: ccma@che.nthu.edu.tw



Figure S1. TEM images of MWCNTs/PP-g-MA with low and high magnification, and the corresponding

SAED pattern.



**Figure S2.** TEM image of the MWCNTs/PP-g-MA covered by PP. A uniform coating of PP on the surface of MWCNTs/PP-g-MA can be found. And we exposed the sample to the electron beam (the red circle region). Due to electron beam irradiation, temperature increases, resulting in the PP partly decomposed. It indicated that MWCNTs/PP-g-MA minimize the interfacial energy barrier between the solid surface and the PP matrix, this was beneficial to the excellent wettability of PP on the MWCNTs/PP-g-MA surface, confirming the PP has strong interactions with nanotubes.