Supporting Information

## Flow-type hydrogen peroxide fuel cells with hemin-modified buckypaper catalysts

Seon-Min Jeon<sup>a,&</sup>, Jungyeon Ji<sup>b,&</sup> and Yongchai Kwon<sup>a,b,\*</sup>

[a] Department of New and Renewable Energy Convergence, Seoul National University of Science and Technology, 232, Gongneung-ro, Nowon-gu, Seoul 01811, Republic of Korea
[b] Department of Chemical and Biomolecular Engineering, Seoul National University of Science and Technology, 232 Gongneung-ro, Nowon-gu, Seoul 01811, Republic of Korea



Figure S1. CV curves of (a) BP/PEI/hemin(25mg) and (b) BP/PEI/hemin(50mg) in the presence of  $H_2O_2$ . For the tests, 0.01 M PBS (pH 7.4) served as the electrolyte under  $N_2$  conditions and the potential scan rate was 20 mV s<sup>-1</sup>.



Figure S2. CV curves showing  $H_2O_2$  oxidation reaction by BP/CoPc in the presence of 10mM  $H_2O_2$ . For the tests, 0.01 M PBS (pH 7.4) served as the electrolyte under  $N_2$  conditions and the potential scan rate was 20 mV s<sup>-1</sup>.



**Figure S3.** Stability of catalysts estimated by the periodic measurements of their catalytic activity for 15 days.