Supporting Information

The effect of vitamin B<sub>12</sub> based catalyst on hydrogen peroxide oxidation reaction and the performance evaluation of membraneless hydrogen peroxide fuel cell in physiological pH condition

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**Figure S1.** (a) A schematic representing in-house flow cell kit configuration HPFC, (b) the overview of actual fuel cell kit of membraneless EBC and its fuel following sequence.



**Figure S2.** CVs of (a) CNT/Co particle and (b) CNT + electrolyte Cobalt chloride 10mM in  $H_2O_2$  0mM (black dashed line) and  $H_2O_2$  3mM (red solid line). For the CV tests, 0.01 M PBS (pH 7.4) was used as the electrolyte and the potential scan rate was 20 mV s<sup>-1</sup> at N<sub>2</sub> state condition.