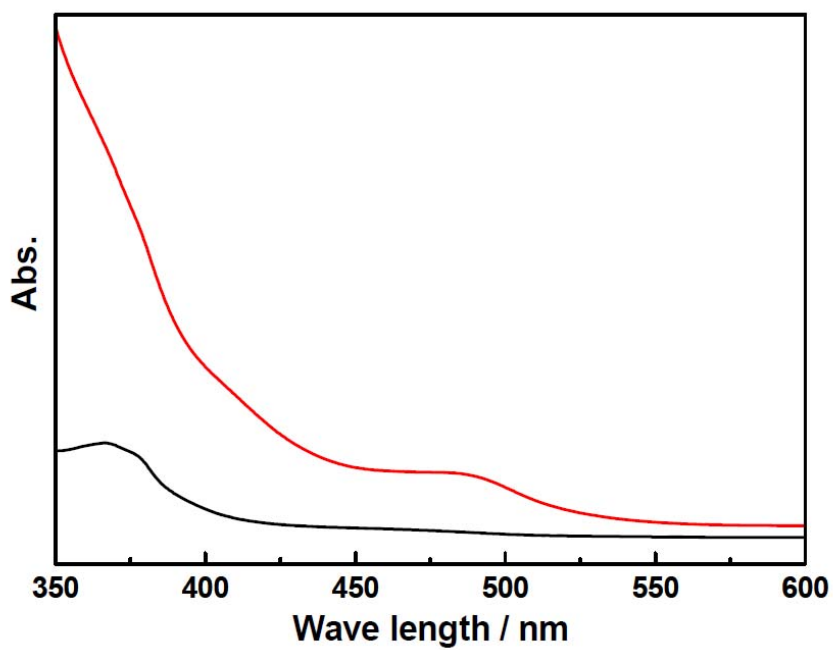


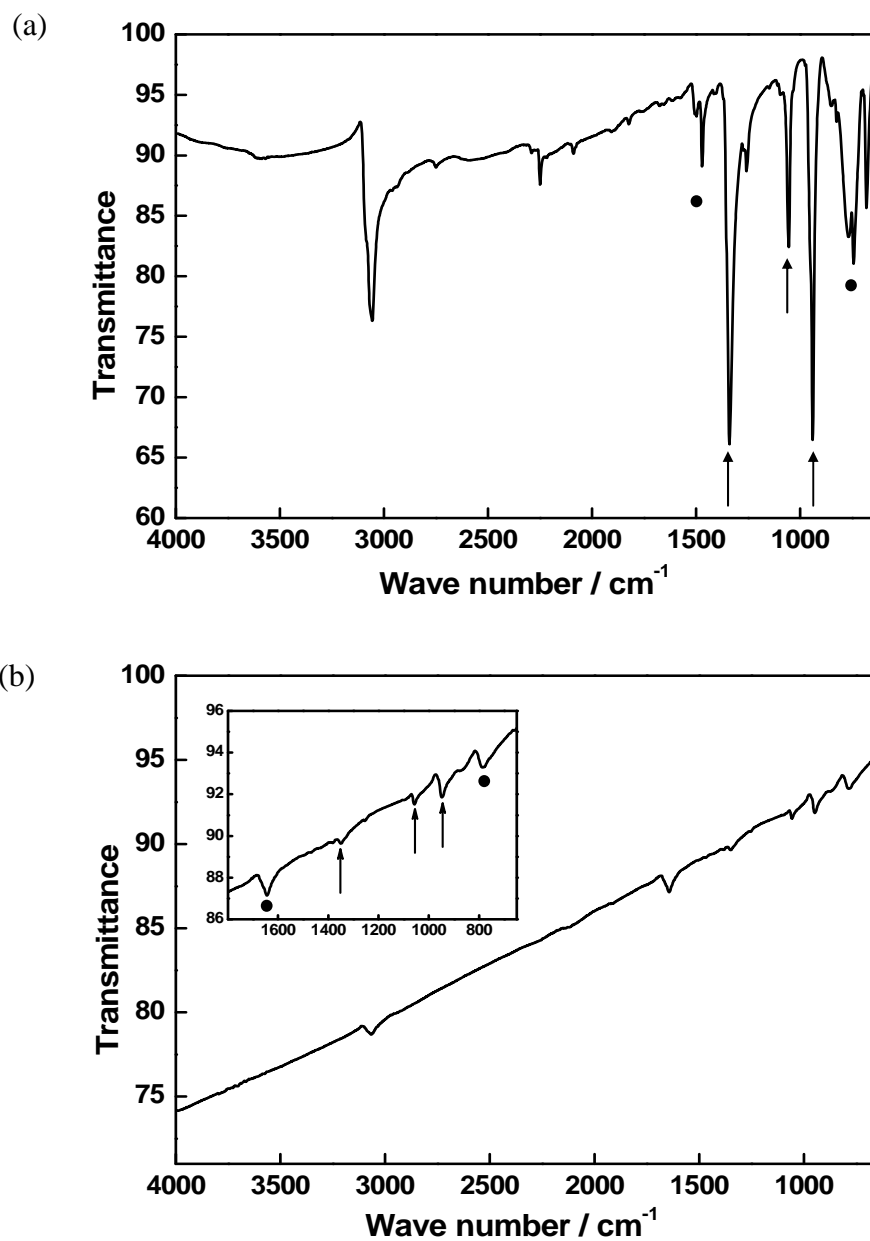
## Electronic Supplementary Information

### *Molecular Cluster Batteries of Nano-hybrid Materials between Keggin POMs and SWNTs*

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**Figure S1.** UV-Vis spectra before (red) and after (black) stirring the solution of SWNT and **3**.



**Figure S2.** IR spectra of **3** (a) and SWNT-**3** (b). Dots and arrows indicate peaks assigned to POM anions and TTF cations, respectively. The inset of (b) is a magnification for the range of 1800-650  $\text{cm}^{-1}$ .

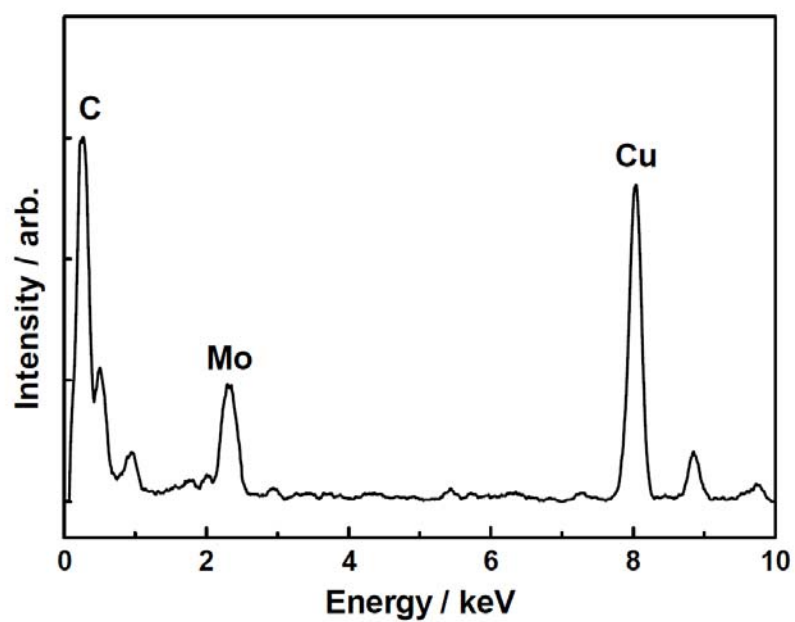


Figure S3. EDX of the SWNT hybrid materials of **1**.

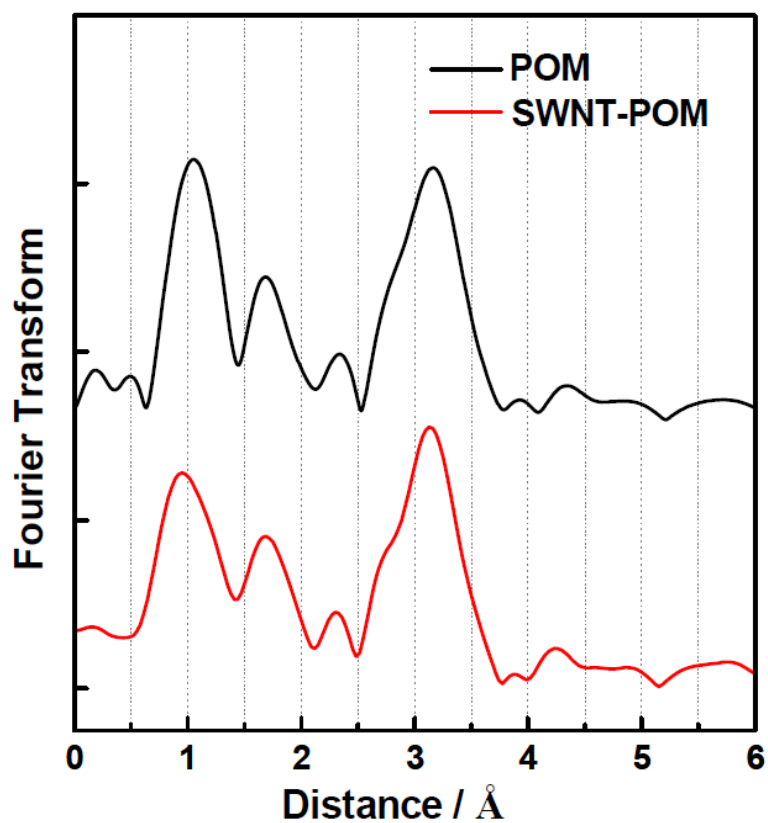
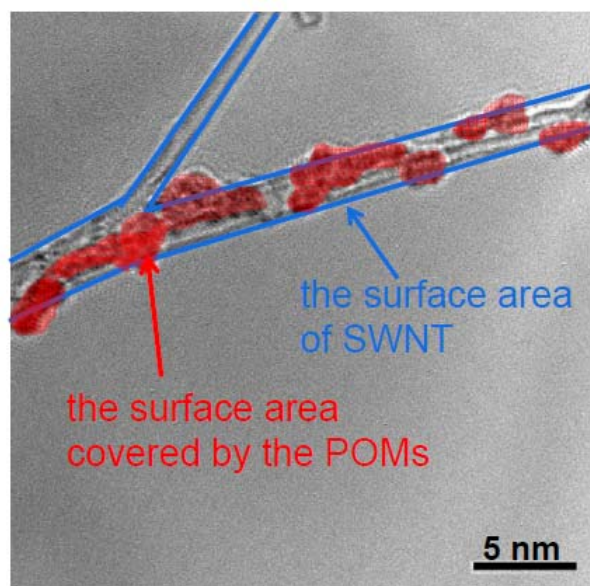
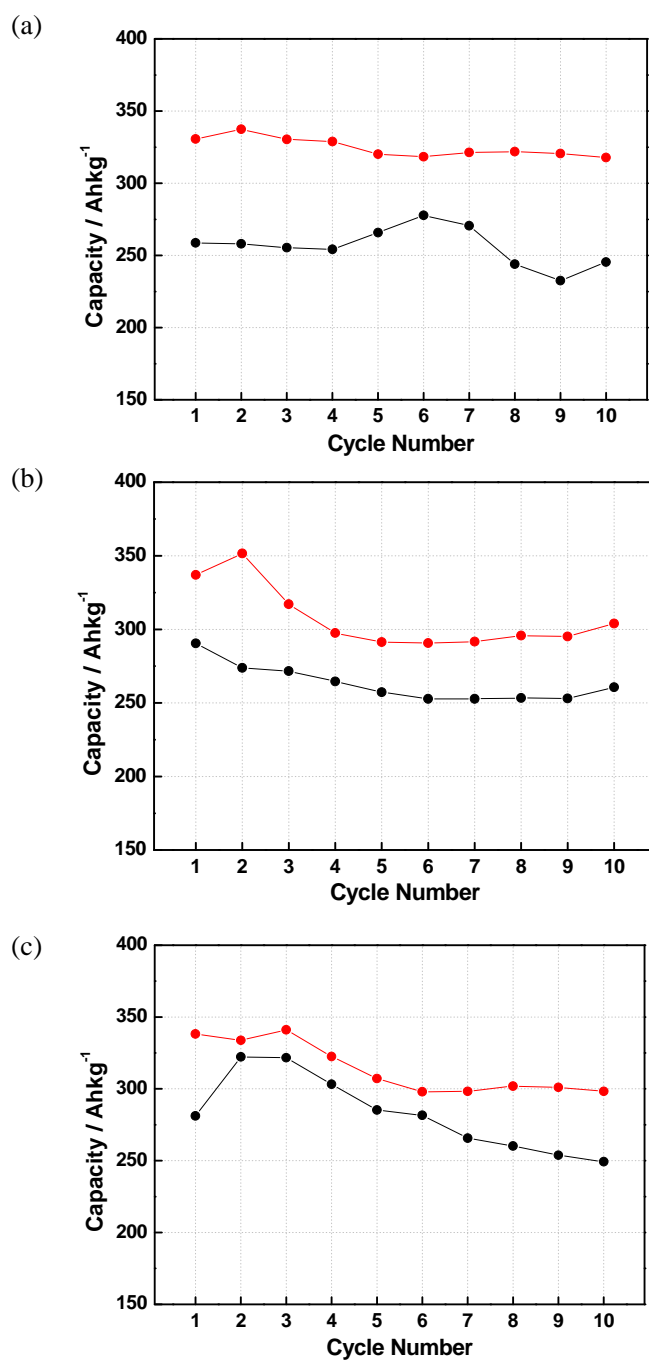


Figure S4. Mo K-edge EXAFS spectra of **1** and SWNT-**1** hybrid materials.



**Figure S5.** Estimated surface coverages of the POMs on the SWNTs for SWNT-2.



**Figure S6.** Cycle performances of the nano-hybrid-MCBs (red) and the microcrystal-MCBs (black) of **1(a)**, **2(b)**, and **3(c)**.