Supporting Information

The separation efficiency of PAT-film.

The oil/water separation efficiency (taking chloroform and water mixture as an example) was investigated and calculated according to $\eta= (m_1/m_o)\times100\%$ [1], where m_0 and m_1 are the mass of the water before and after separation. The separation efficiency of the PAT-film was calculated to be ca. 91%.
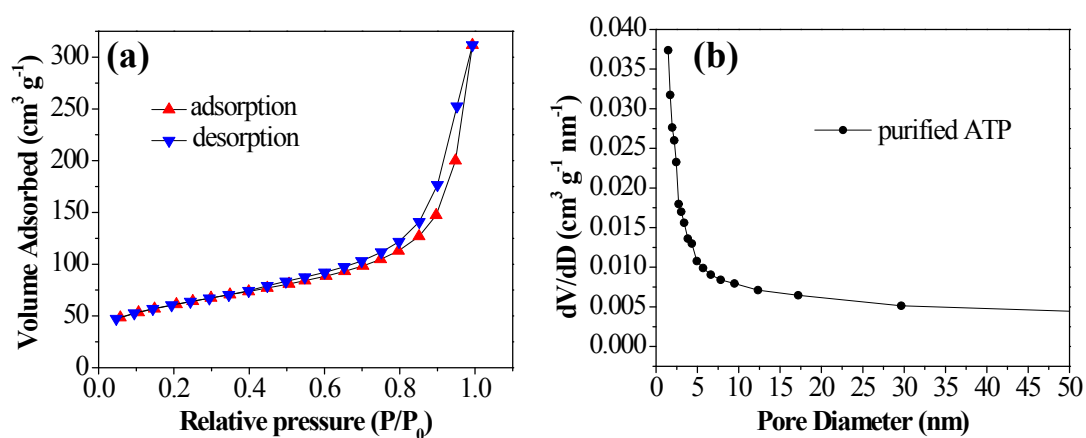
Figure S1. (a) Nitrogen adsorption-desorption isotherms of purified ATP measured at 77 K. (b) BJH pore size distribution curves of purified ATP.
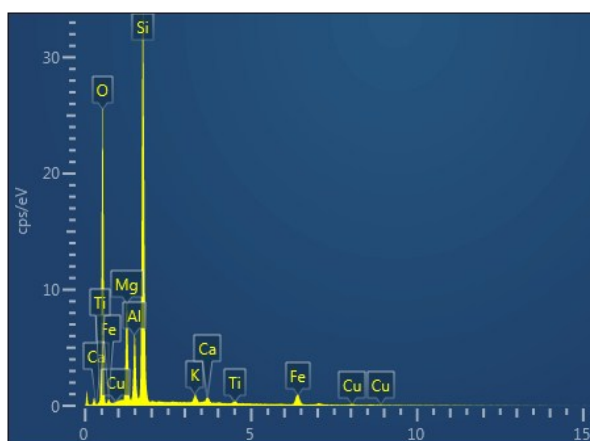
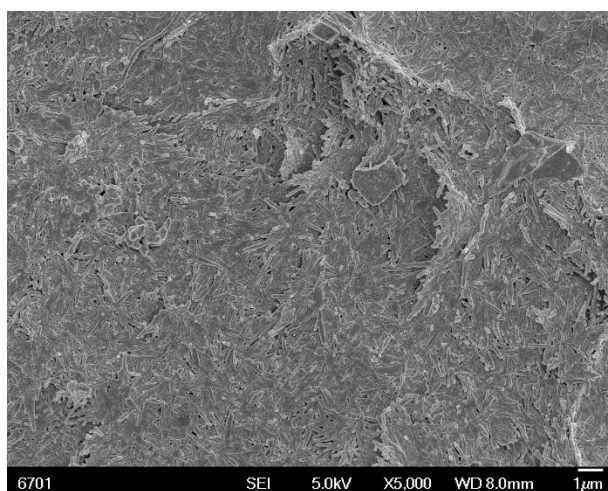**Figure S2.** The energy dispersive spectrometry (EDS) of the purified ATP.

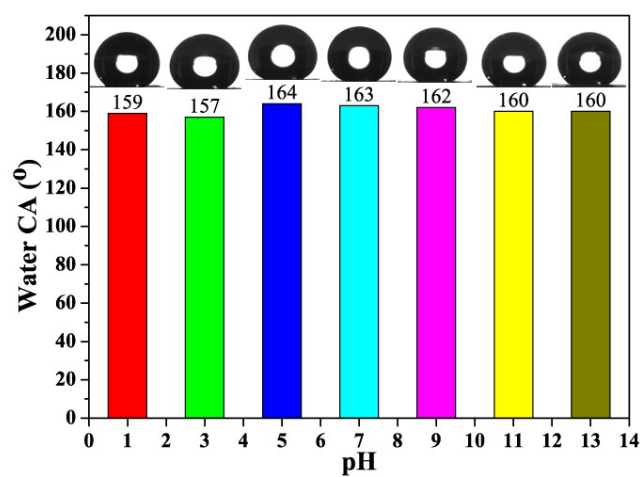**Figure S3.** The SEM images of the PAT-film. Scale bar: 1μm.

Figure S4. The water contact angle measurement with different PH value for the PAT-film.

References

1. J. Li, L. Yan, J. Li, F. Zha. and Z. Lei, *RSC Adv.*, 2015, **5**, 53802.