

## Electronic Supporting Information for

### Visualized Discrimination of ATP from AMP and ADP through the Collapse of Supramolecular Gels

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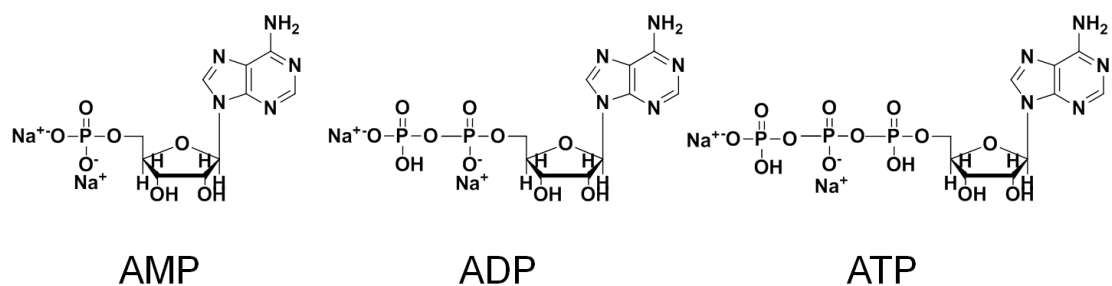
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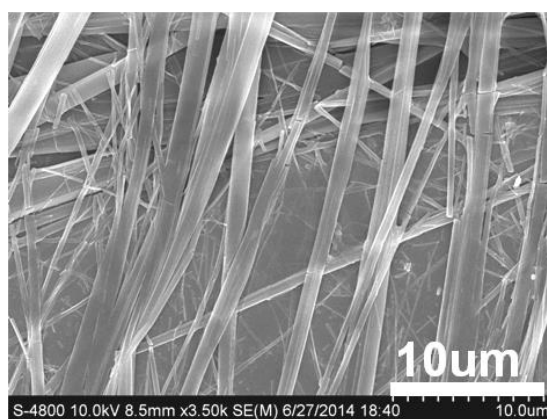
#### Experimental Section

**Instruments and methods:** UV-Vis spectra were measured with a Hitachi U-3900 spectrophotometer. CD spectra were recorded with a JASCO J-810 CD spectrophotometer under a nitrogen atmosphere. The fully aged gels were cast onto single-crystal silica plates (Pt-coated), then vacuum-dried for 12 hours for SEM measurements. Scanning electron microscopy (SEM) was performed on a Hitachi S-4800 FE-SEM microscope. The rheological properties of the gel were measured at  $25 \pm 0.05$  °C with a Thermo Haake RS300 rheometer (cone and plate geometry of 40 mm in diameter). The pH of the solution was measured with Orion CHN060.

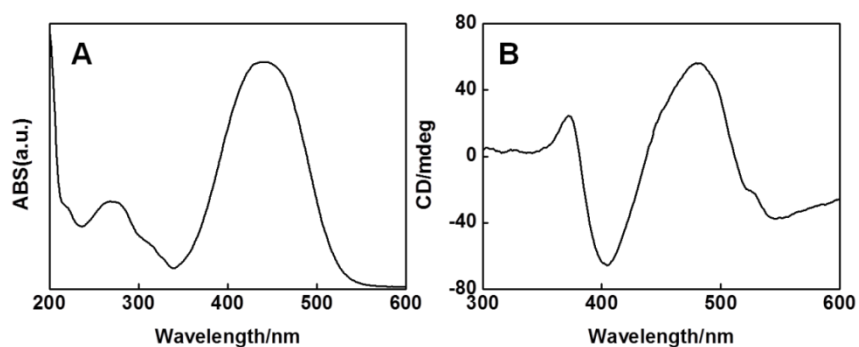
**Materials:** All chemicals were purchased from commercial suppliers. The synthesis and characterization of the pyridinium based on glutimade amphiphiles PUDG was in accordance with the methods previously by our group.<sup>1</sup>



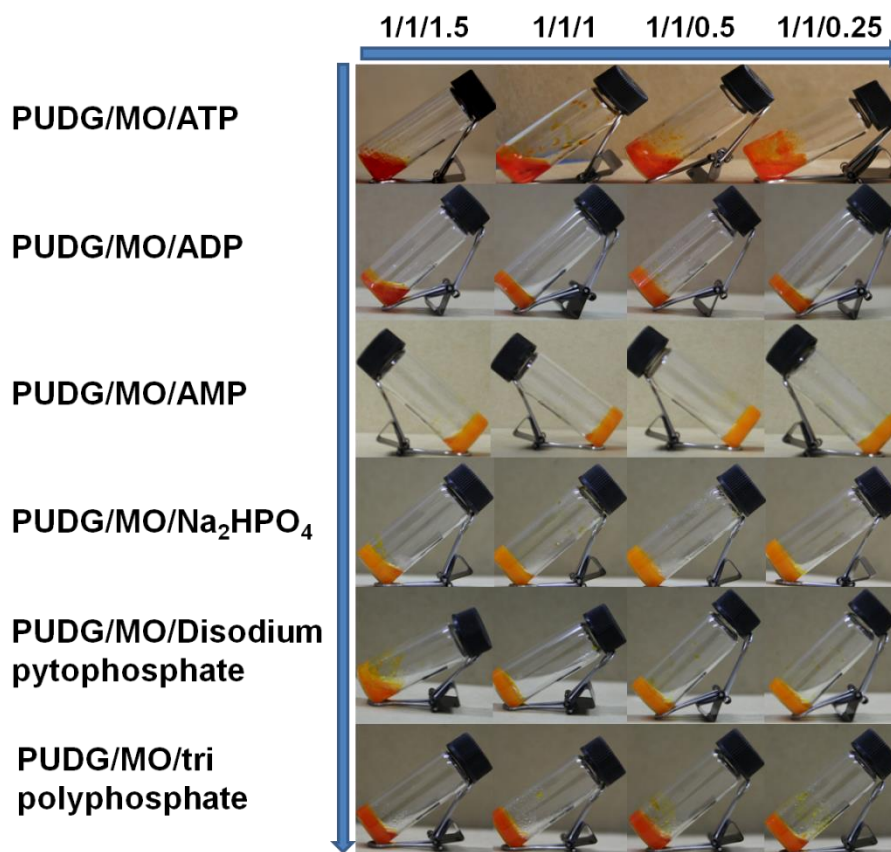
**Fig S1.** the molecular structure of AMP, ADP and ATP.



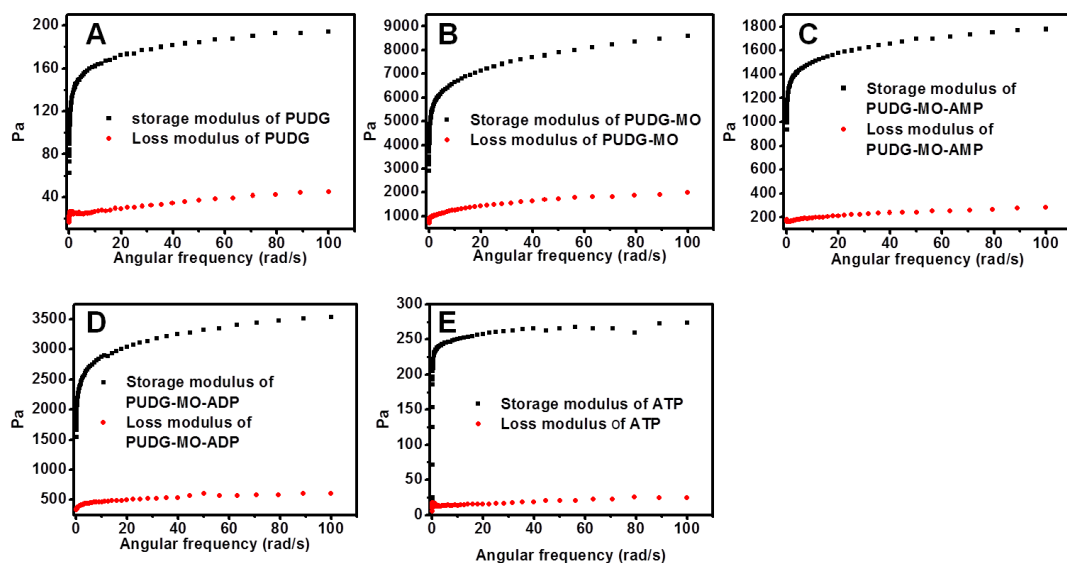
**Fig S2.** the SEM image of PUDG/MO/ADP=1/1/0.5. The solvent is  $C_2H_5OH/H_2O=6/4$  (V%), the concentrations of PUDG and MO are constant at  $1.25 \times 10^{-2}$  M respectively.



**Fig S3.** The UV (A) and CD (B) spectrum of PUDG/MO/ $\text{Na}_2\text{HPO}_4=1/1/0.5$  gels. The solvent is  $\text{C}_2\text{H}_5\text{OH}/\text{H}_2\text{O}=6/4$  (V%), the concentrations of PUDG and MO are constant at  $1.25 \times 10^{-2}$  M, respectively.



**Fig S4.** The photo image of PUDG/MO gels upon addition of different phosphate (ATP, ADP, AMP,  $\text{Na}_2\text{HPO}_4$ , disodium pyrophosphate and tripolyphosphate. See left blue arrow) with a series molar ratio (see the top arrow). The solvent is  $\text{C}_2\text{H}_5\text{OH}/\text{H}_2\text{O}=6/4$  (V%), the concentrations of PUDG and MO are constant at  $1.25 \times 10^{-2}$  M respectively.



**Fig S5.** Frequency sweep rheometry of A) suspension of PUDG, B) gels of PUDG/MO=1/1, C) gels of PUDG/MO/AMP=1/1/0.5, D) gels of PUDG/MO/ADP=1/1/0.5, E) suspension of PUDG/MO/ATP=1/1/0.5. For all the experiments, the solvent is  $C_2H_5OH/H_2O=6/4$  (V%),  $[PUDG]=1.25 \times 10^{-2}$  M and  $[MO]=1.25 \times 10^{-2}$  M.

## References

1. C. Liu, Q. Jin, K. Lv, L. Zhang and M. Liu, *Chem. Commun.*, 2014, **50**, 3702-3705.