Electronic Supplementary Material (ESI) for Soft Matter.
This journal is © The Royal Society of Chemistry 2019

Supporting Information

Aqueous self-assembly of arginine and $K_8SiW_{11}O_{39}$: fine-tuning the formation of coacervate intended for sprayable anticorrosive coating

Xiaohuan Liu, Xiaoming Xie, Zhanglei Du, Bao Li, Lixin Wu, Wen Li,*

State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University. Qianjin Avenue 2699, Changchun, 130012, China.

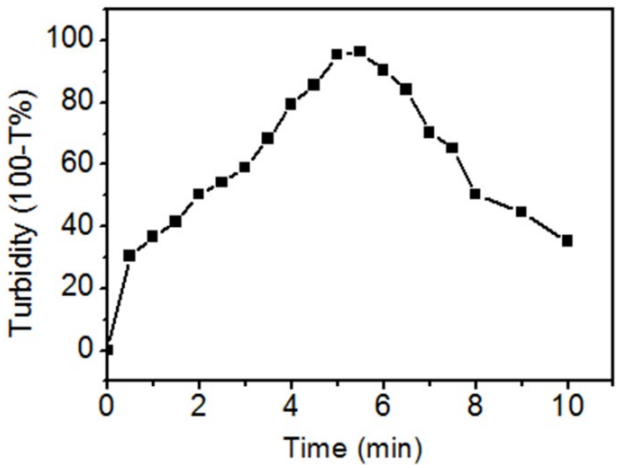

Fig. S1 Turbidity at 550 nm as a function of elapsed time. (The turbidity gradually increases with the elapsed time, and approaches maximum at the elapsed time near 5 min, indicative of the maximum numbers of the coacervate droplets within this period. After that, the turbidity gradually decreases because of the occurrence of liquid - liquid phase separation.)

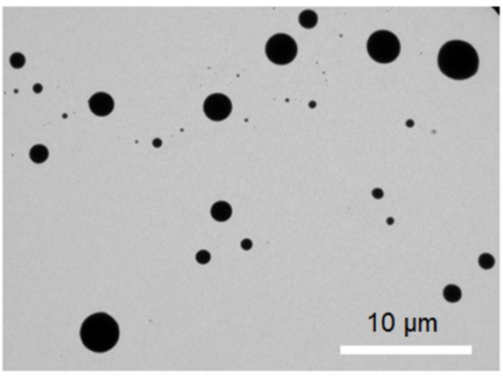

Fig. S2 TEM image of the dried Arg/SiW_{11} coacervate droplets without staining.

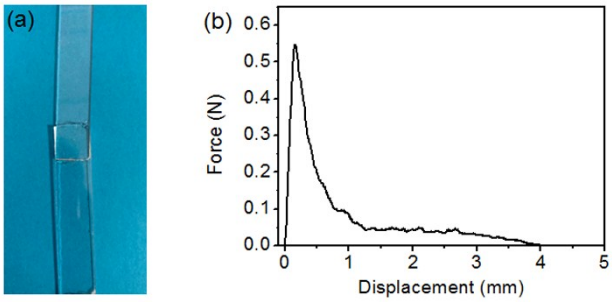

Fig. S3 (a) Photograph of Arg/SiW_{11} complex for attaching glass plates. (b) A force vs. displacement curve for lap shear joint of glass plates glued by the wet Arg/SiW_{11} complex (pH = 6.5).

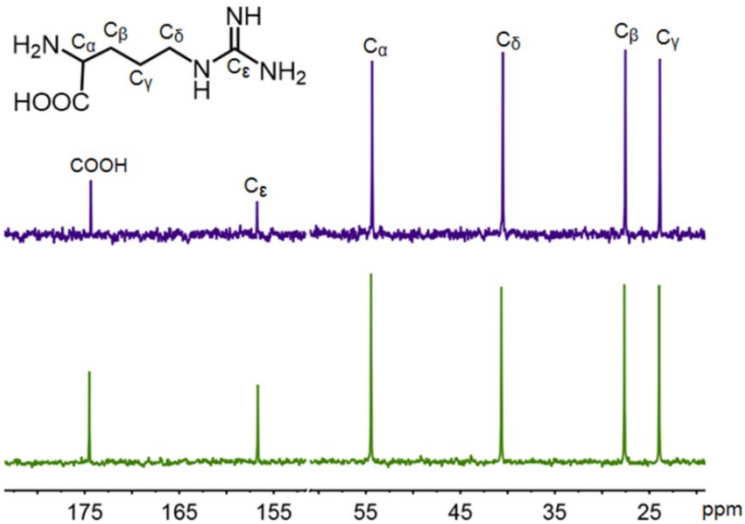

Fig. S4 ^{13}C NMR spectra of the Arg (blue line) and the Arg/SiW_{11} coacervate (green line) in D_2O at pH 6.5.

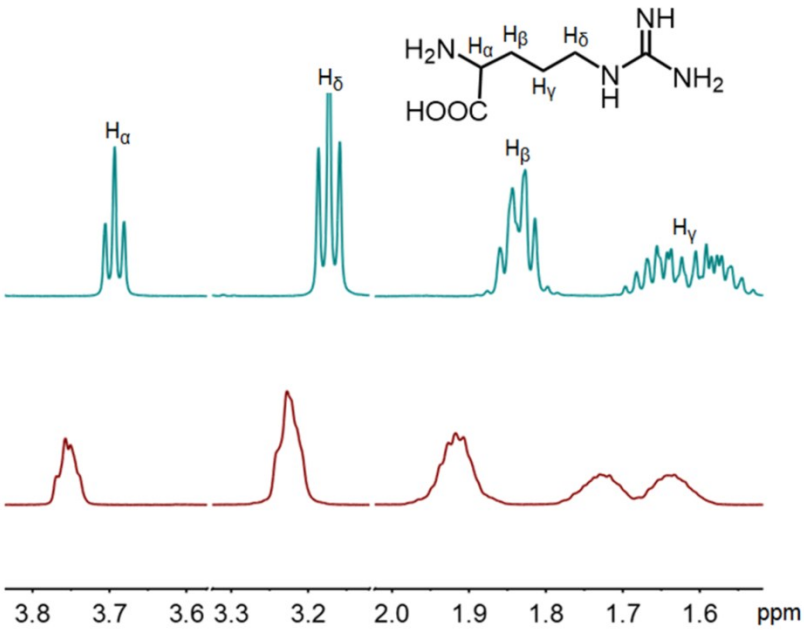

Fig. S5 ^{1}H NMR spectra of the Arg (blue line) and the Arg/SiW_{11} coacervate (red line) in D_2O at pH 6.5. A strong broadening of the proton resonance signals in the Arg/SiW_{11} complex demonstrates the formation of large and stable aggregates in Arg/SiW_{11} solution.

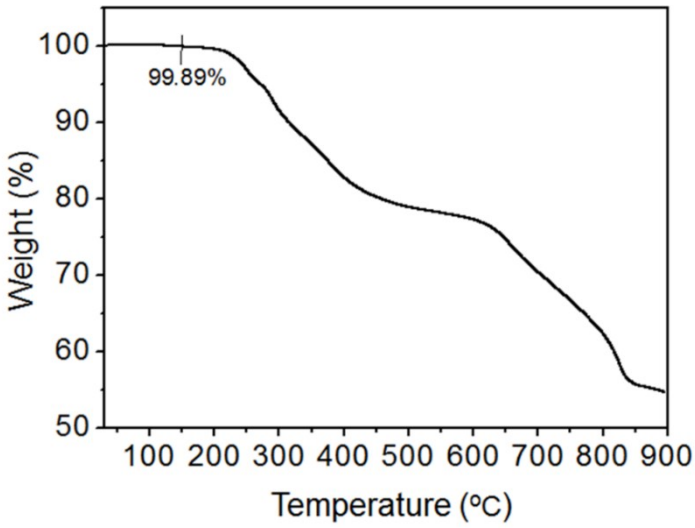

Fig. S6 TGA curve of the dried Arg/SiW_{11} coacervate obtained from the mixed solution at pH = 6.5 (feed molar ratio of Arg to SiW_{11} is 12:1).

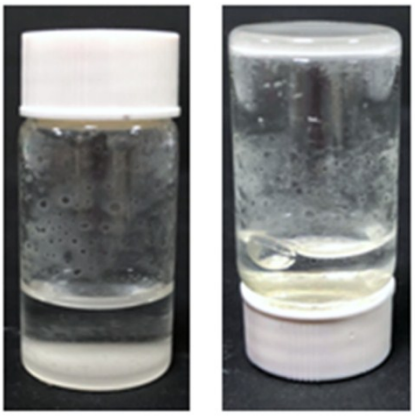

Fig. S7 Photographs of gel-like Arg/SiW_{11} complex at pH = 4.

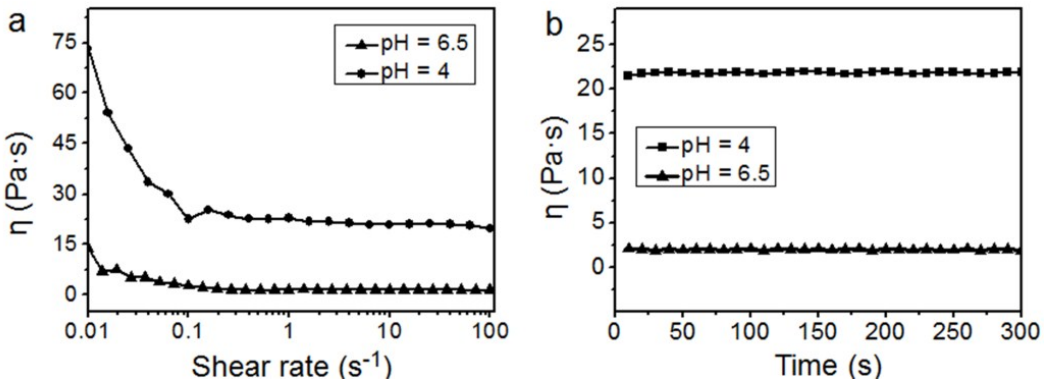

Fig. S8 a) Viscosity versus shear rate plots of the Arg/SiW_{11} complex at different pH condition (pH = 4 and 6.5). b) Time-dependent viscosity curves of the Arg/SiW_{11} complex at different pH condition applied with a constant shear rate of 10 s^{-1}. (The triangle represents pH = 4, the square represents pH = 6.5）