Supporting Information

Aqueous self-assembly of arginine and K$_8$SiW$_{11}$O$_{39}$: fine-tuning the formation of coacervate intended for sprayable anticorrosive coating

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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$_2$O 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$_2$O 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)