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**Figure S1**. (a) FTIR spectra of SA and OSA. (b) FTIR spectra of OSA, ADH, OSA-ADH gel, and OSA-ADH-Fe<sup>3+</sup> gel.



**Figure S2**. Time-sweep rheological properties of OSA-ADH gel during the gelation process with different weight ratios of OSA to ADH, (a) 1:0.35; (b) 1:0.39; (c) 1:0.44; (d) 1:0.48; (e) 1:0.52.



**Figure S3**. Printing results of P(AAm-*co*-AAc) polymer solution (a) without and (b) with OSA and ADH.

Liquid spreading	
printable	
Nozzle clogging	2.5 mm

Figure S4. Different printing status of the ink.