Supporting information available for:

**Decreasing Operating Potential for Water Electrolysis to Hydrogen via Local Confinement of Irion-Based Soft Coordination Suprapolymers**

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Figure S1. Experimental voltammetry of $\text{H}^+$ reduction at the different GCE surface.

Replacing the Fe-SCSP (the blue line) with another negatively charged electrolyte-polystyrene sodium sulphite (PSS), only decreases of the proton reduction current without a potential movement was observed (the green line). This control experiment demonstrated that the Fe-SCSP is very crucial in the catalytic hydrogen evolution.
Figure S2. The linear growth of the mass of the layer by layer assembly film: (a) The UV-Vis spectrometry of the \((\text{PEI/Fe}^{3+}-\text{L}_2\text{EO}_4)_n\) layer by layer assembly film on the quartz glass substrate, bilayer number \(n = 1, 2, 3, 4, 5, 6, 7, 8\); (b) And the intensity of this UV-Vis spectrometry growths linearly at certain wavelengths with an increasing of the bilayer number \(n\). The absorptions at 274 nm and 350 nm wavelength characterize the coordination bonds in the \(\text{Fe}^{3+}-\text{L}_2\text{EO}_4\) structure.