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High-strength polyvinyl alcohol/epoxy-functionalized gallic acid dual-crosslinked binder for silicon anodes

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Samples	First discharge specific capacity (mAh·g-1)	First coulombic efficiency (%)
PVA	3753	80.33
PG73	3759	85.82
PG55	3875	88.92
PG37	3658	84.31



Figure S1. XRD curve of Si particles.

Table S1. Experimental results of electrochemical characterization.



Figure S2. The SEM image of Si particles in this work.



Figure S3. XRD diffraction pattern of PVA.



Figure S4. cycling results of PVA, PG73, PG55, and PG37 electrodes at a current density of 420 mA g^{-1} .



Figure S5. cycling results of PG73, PG55, and PG37 electrodes at a current density of 840 mA g^{-1} .



Figure S6. The CV curve of PG55 scanned at a voltage scan rate of 0.1 mV s⁻¹ within the range of 0–1.5V.



Figure S7. EIS analogue equivalent circuit diagram of after the cycle.



Figure S8. The electrochemical impedance spectra of each electrode before cycling.



Figure S9. EIS analogue equivalent circuit diagram of before the cycle.