Zn modified Co@N-C composites with adjusted Co particle sizes as catalysts for efficient electroreduction of CO₂


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Figure S1. TG-DSC characterizations of the as-prepared Zn-Co-ZIF.

Figure S2. N$_2$ adsorption-desorption isotherms of Zn-Co@N-C-X with different Co contents and Zn-Co@N-C-25-Y with different pyrolysis temperatures.
Figure S3. SEM image of Zn-Co@N-C-X with different Co contents.
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**Figure S5.** STEM and line-scanning EDS spectra of Zn-Co@N-C-25.

**Figure S6.** Elemental mapping of Zn-Co@N-C-100.

**Figure S7.** Elemental mapping of Zn-Co@N-C-0.
Figure S8. Elemental mapping of Zn-Co@N-C-25-600.

Figure S9. Elemental mapping of Zn-Co@N-C-25-1000.
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Figure S12. Cyclic voltammetry and charging current density differences plotted against scan rates: (a, b) Zn-Co@N-C-100, (c, d) Zn-Co@N-C-50, (e, f) Zn-Co@N-C-25, (g, h) Zn-Co@N-C-17 and (i, j) Zn-Co@N-C-0.
Figure S13. Cyclic voltammetry and charging current density differences plotted against scan rates: (a, b) Zn-Co@N-C-25-600, (c, d) Zn-Co@N-C-25-700, (e, f) Zn-Co@N-C-25-900 and (g, h) Zn-Co@N-C-25-1000.
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**Figure S16.** Elemental mapping of Zn-Co@N-C-25/CP before reaction.

**Figure S17.** Elemental mapping of Zn-Co@N-C-25/CP after reaction.
Figure S18. Raman spectra of carbon paper and Zn-Co@N-C-25/CP before and after reaction.