

Supporting Information

PDA-assisted formation of ordered intermetallic CoPt₃ catalysts with enhanced oxygen reduction activity and stability

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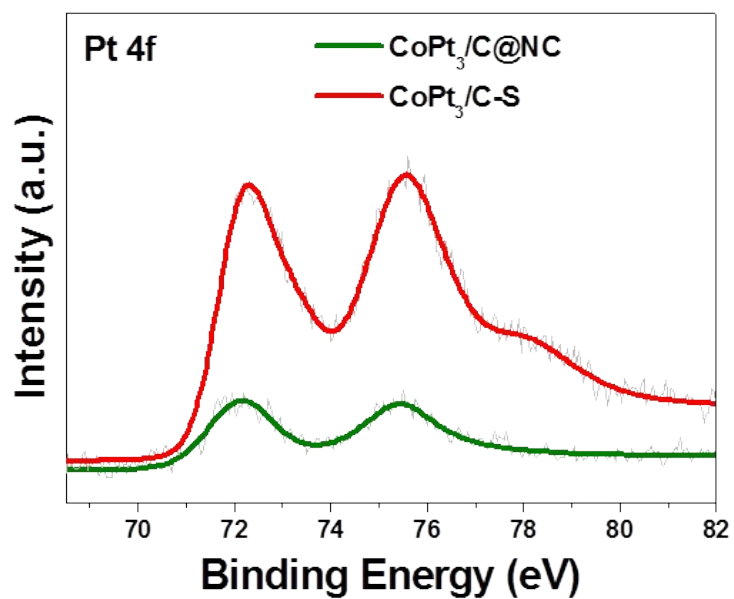


Figure S1. Pt 4f XPS spectra for the CoPt₃/C@NC and CoPt₃/C-S samples.

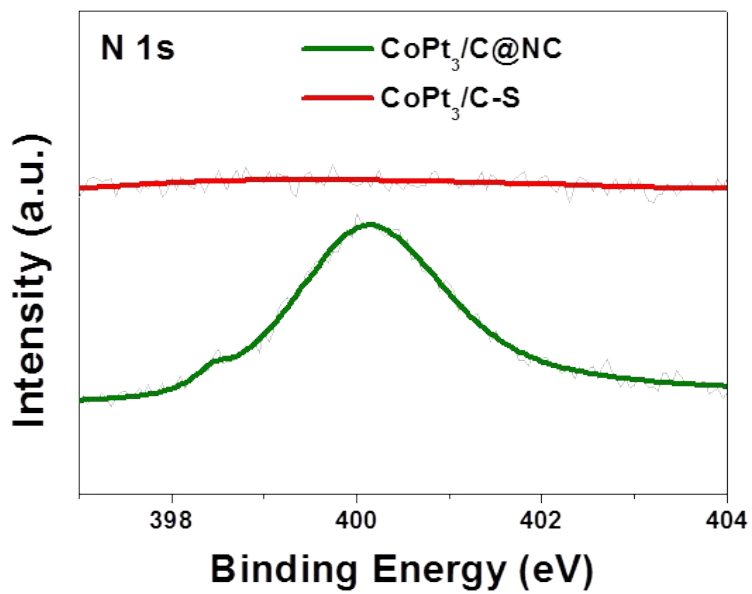


Figure S2. N 1s XPS spectra for the CoPt₃/C@NC and CoPt₃/C-S samples.

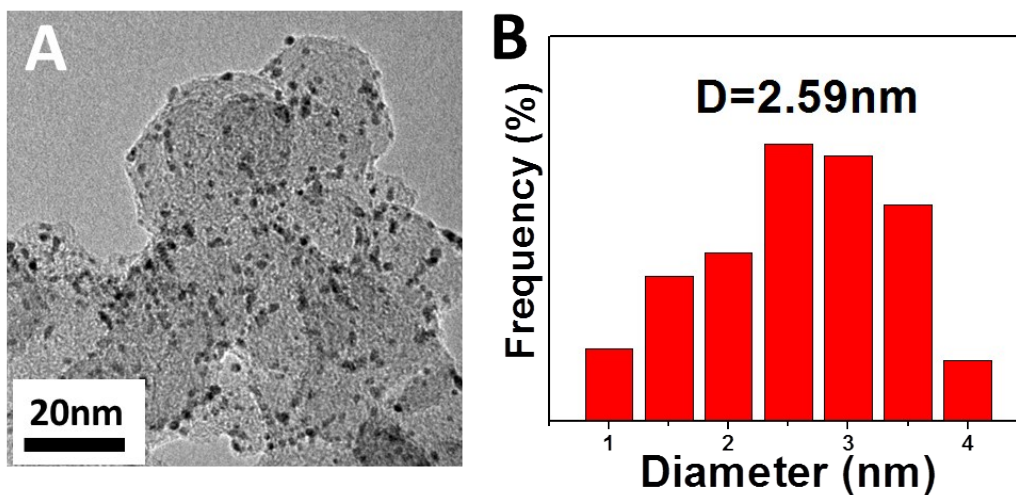


Figure S3. (A) TEM image of Pt-Co/C sample; (B) the particle size distribution.

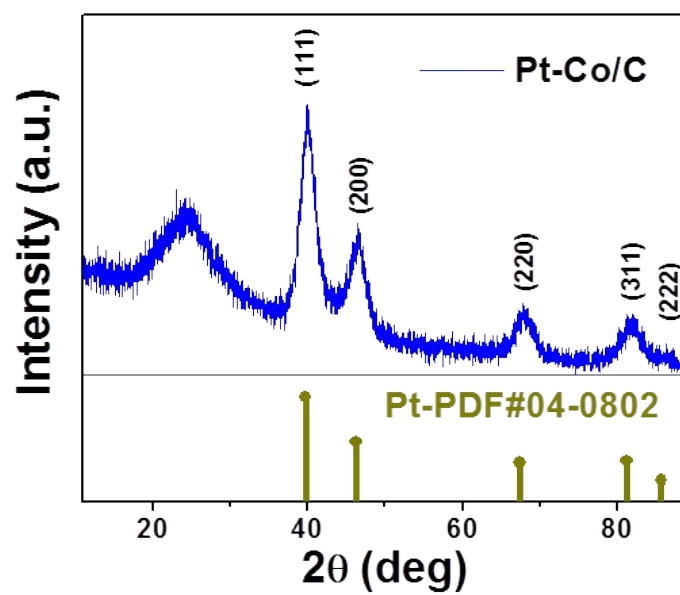


Figure S4. XRD spectrum of the disordered Pt-Co/C alloy.

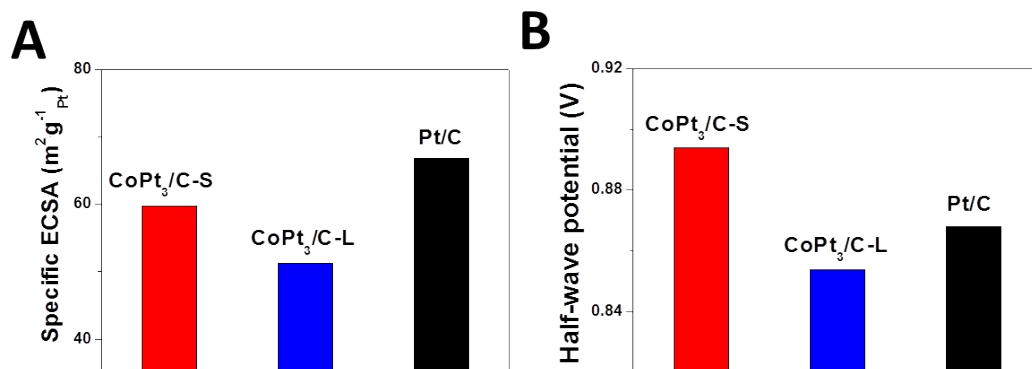


Figure S5. (A) The calculated specific ECSA values for CoPt₃/C-S, CoPt₃/C-L and Pt/C catalysts; (B) half-wave potentials of these catalysts.

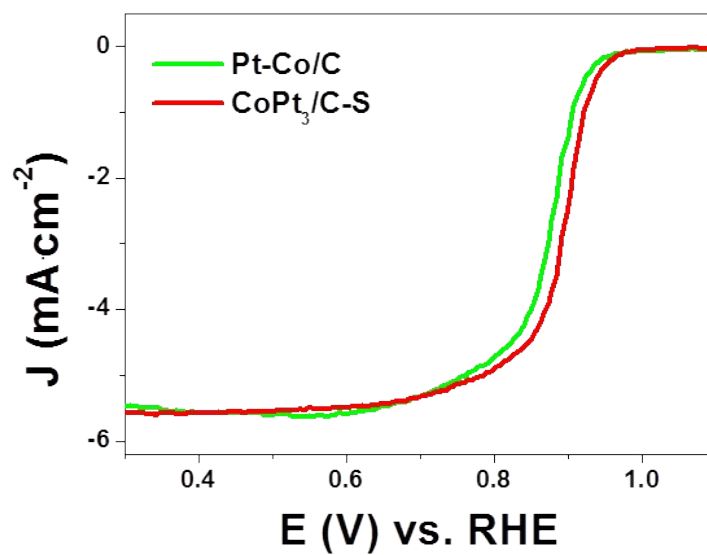


Figure S6. ORR polarization curves recorded in O₂-saturated 0.1 M KOH solution with a sweep rate of 10 mV s⁻¹ at 1600 rpm.

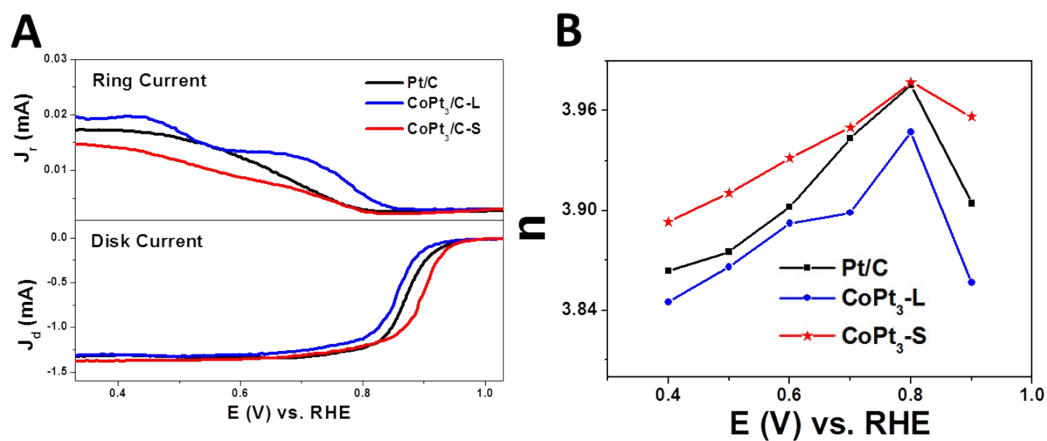


Figure S7. (A) Rotating ring-disk electrode tests measured in O₂-saturated 0.1 M KOH solution at 1600 rpm; (B) the transferred electrons numbers during ORR.

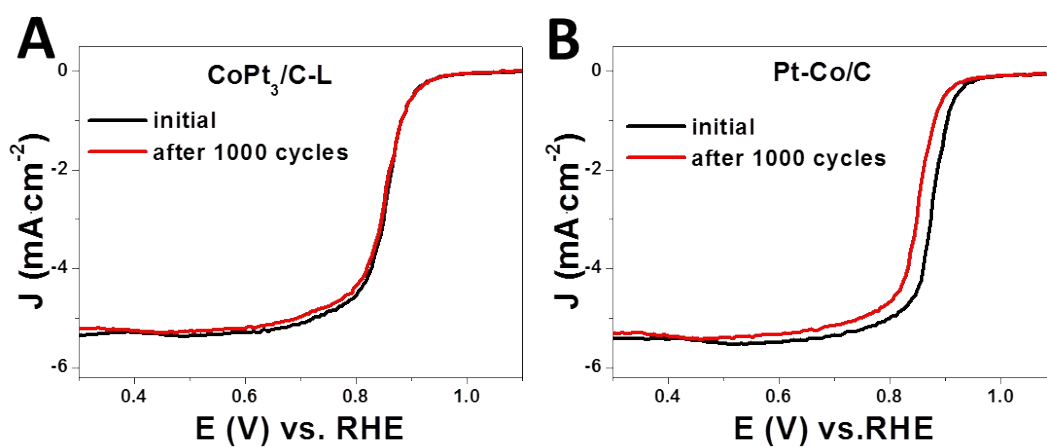


Figure S8. (A-B) ORR polarization curves before and after 1000 cycles.

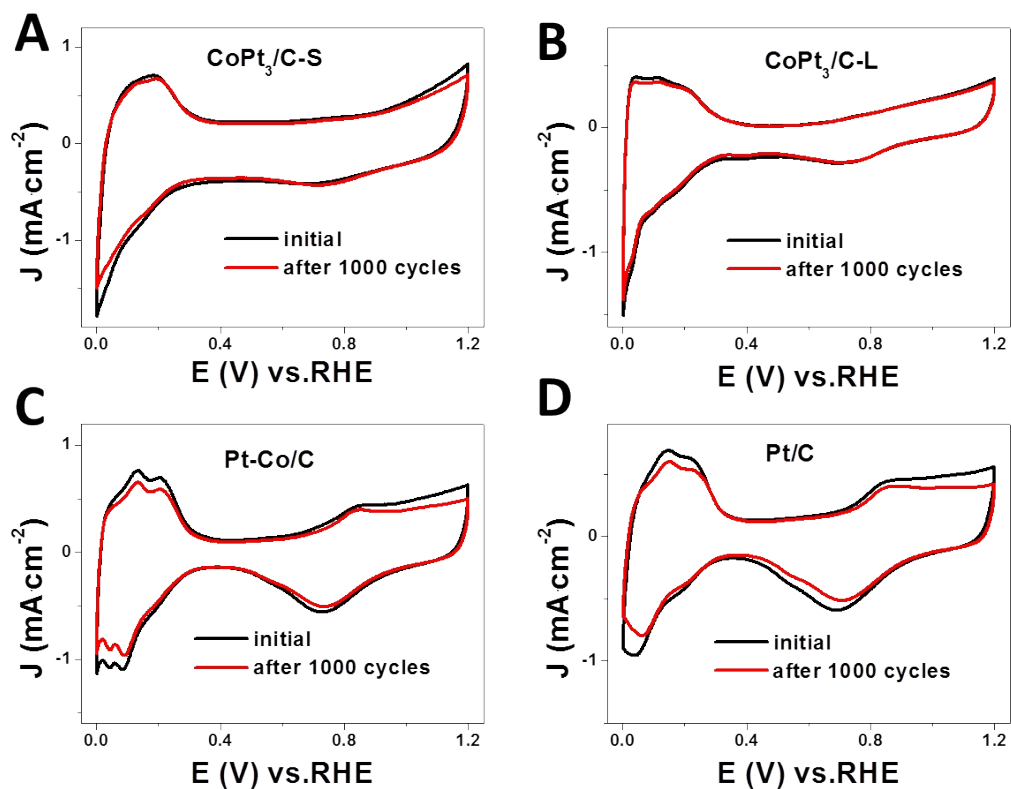


Figure S9. (A-D) CV curves before and after 1000 cycles recorded in N₂-purged 0.1 M HClO₄ solution with a sweep rate of 100 mV s⁻¹.

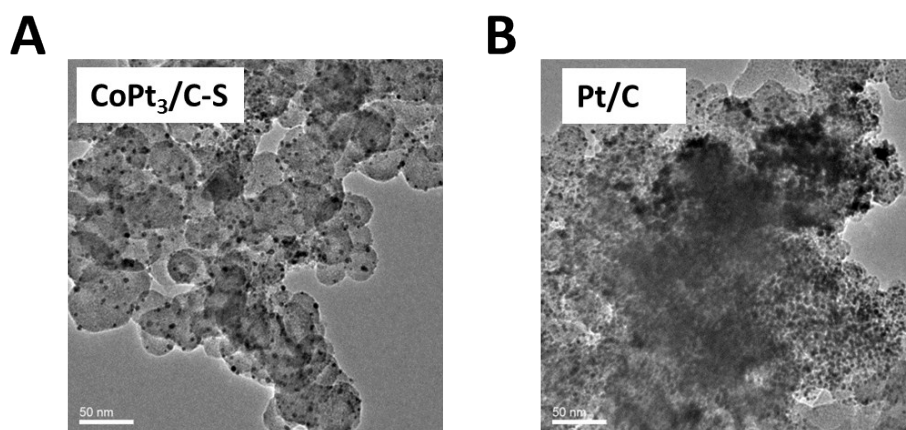


Figure S10. (A-B) TEM images of CoPt₃/C-S and Pt/C samples after 1000 cycles.

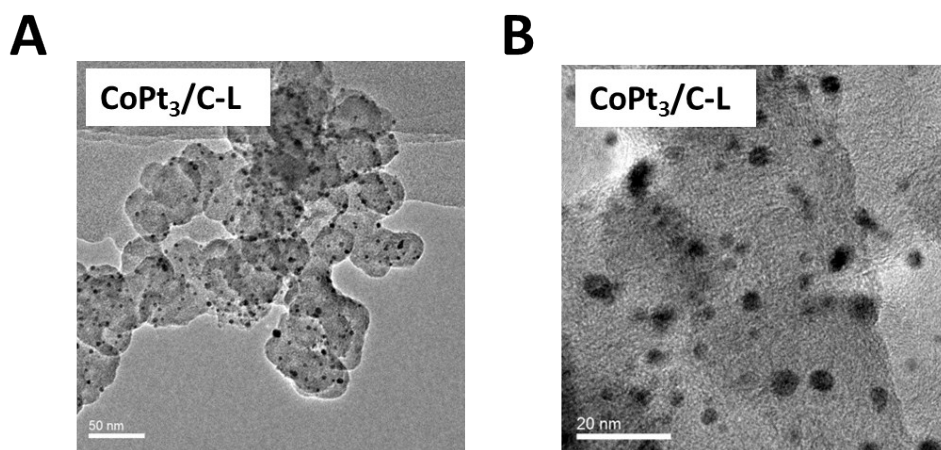


Figure S11. (A-B) TEM images of CoPt₃/C-L sample after 1000 cycles.

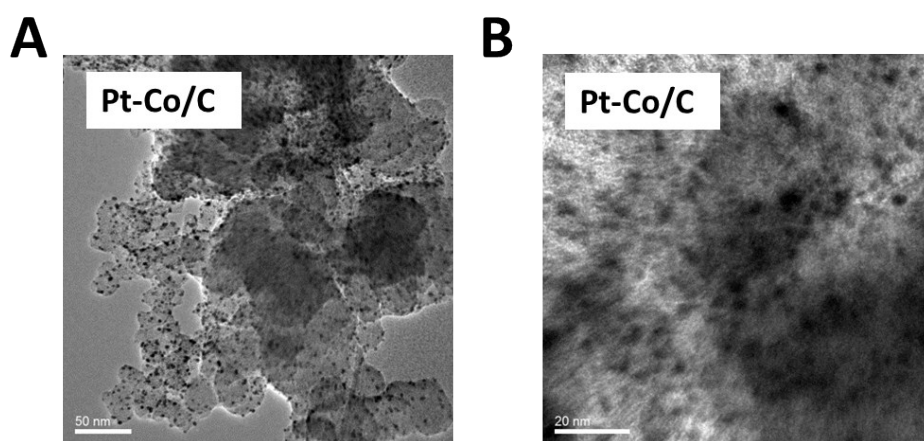


Figure S12. (A-B) TEM images of Pt-Co/C sample after 1000 cycles.

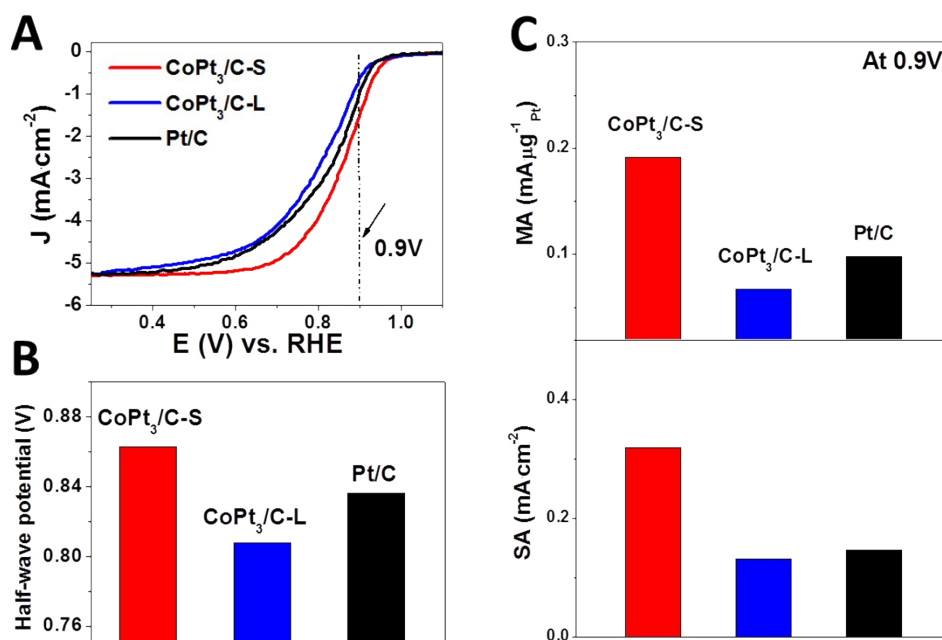


Figure S13. (A) ORR polarization curves recorded in O₂-saturated 0.1 M HClO₄ solution with a sweep rate of 10 mV s⁻¹ at 1600 rpm; (B) the calculated half-wave potentials; (C) mass activities and specific activities of these catalysts.

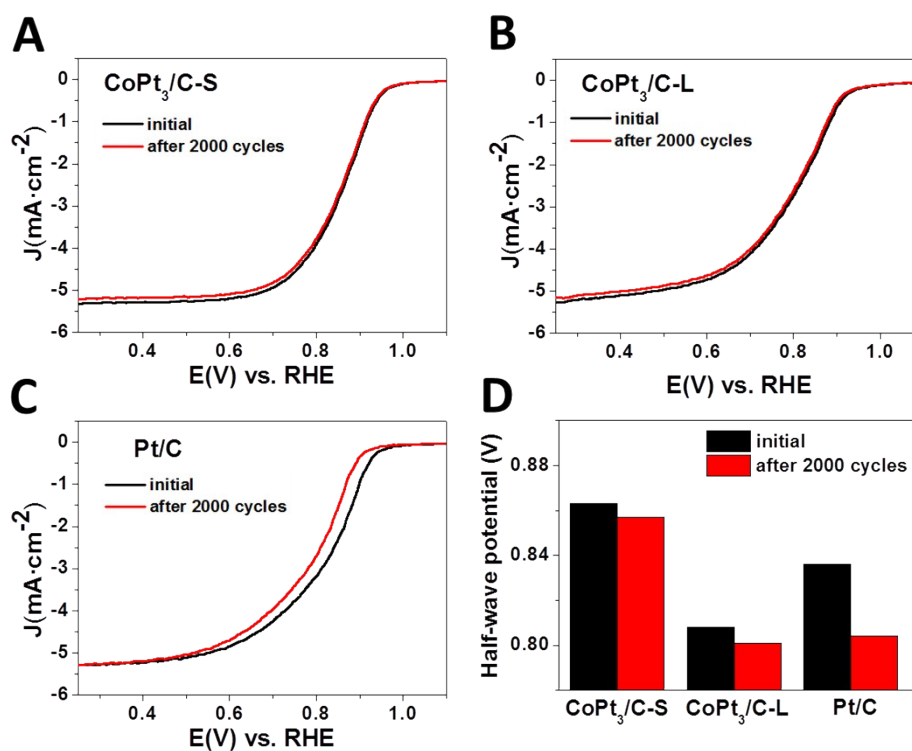


Figure S14. (A-C) ORR polarization curves before and after 2000 cycles for CoPt₃/C-S (A), CoPt₃/C-L (B) and Pt/C (C) catalysts; **(D)** the comparisons of half-wave potentials before and after 2000 cycles for these catalysts.