

Supplementary Materials

Aqueous Synthesis of Au₁₀Pt₁ Nanorods Decorated with MnO₂ Nanosheets for the Enhanced Electrocatalytic Oxidation of Methanol

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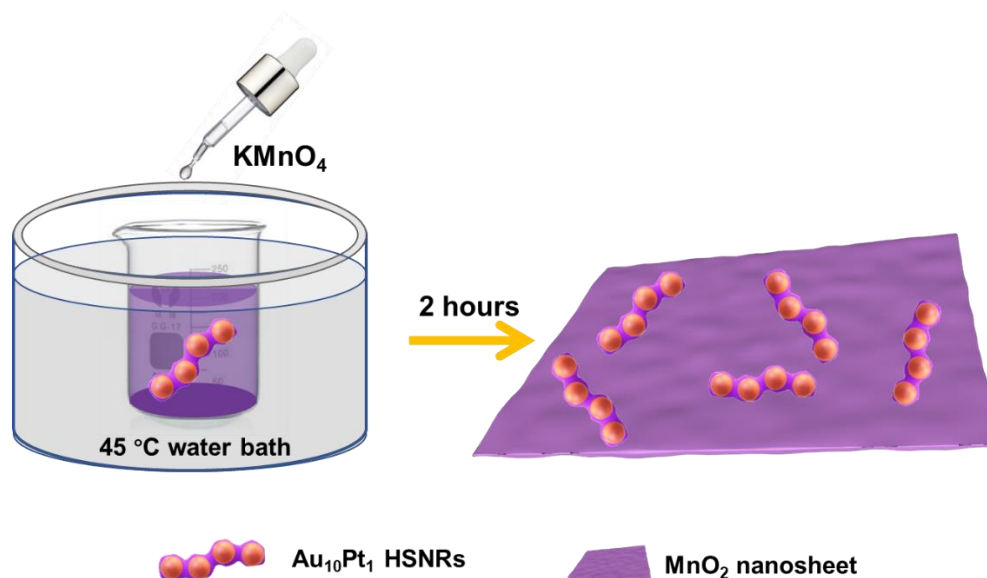


Figure S1. Schematic diagram of the preparation process of Au₁₀Pt₁@MnO₂ composites.

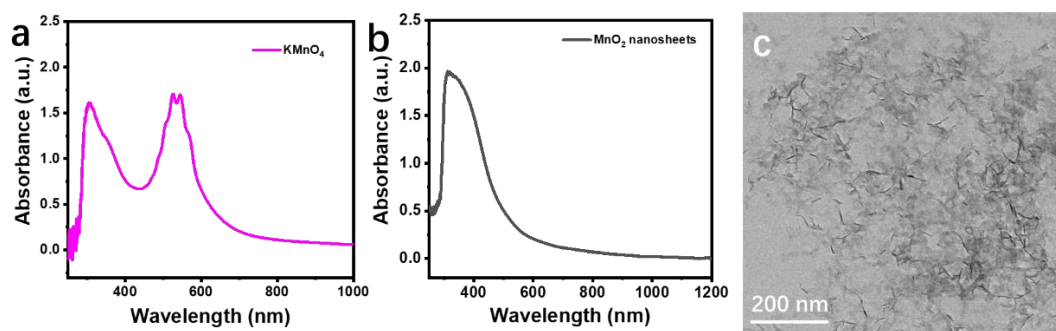


Figure S2. UV-vis absorption spectra of (a) KMnO_4 and (b) MnO_2 nanosheets; (c) TEM image of MnO_2 nanosheets.

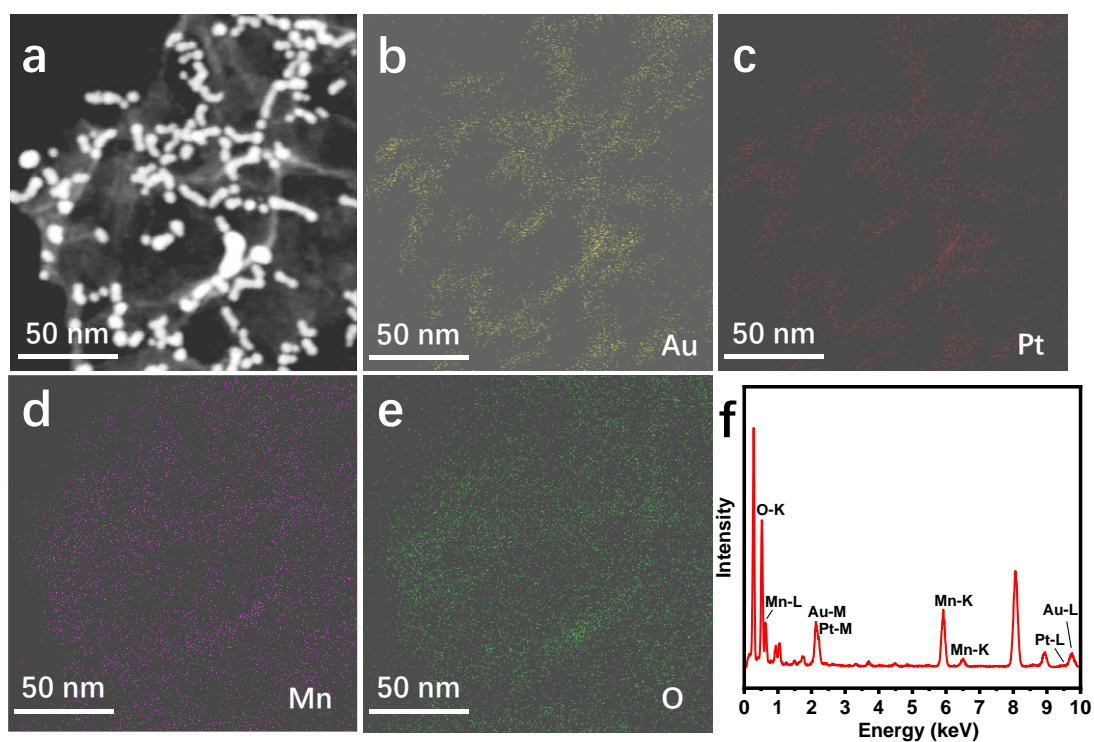


Figure S3. (a) STEM image of $\text{Au}_{10}\text{Pt}_1@ \text{MnO}_2$ composites; (b-e) mapping images; (f) EDS spectra diagram.

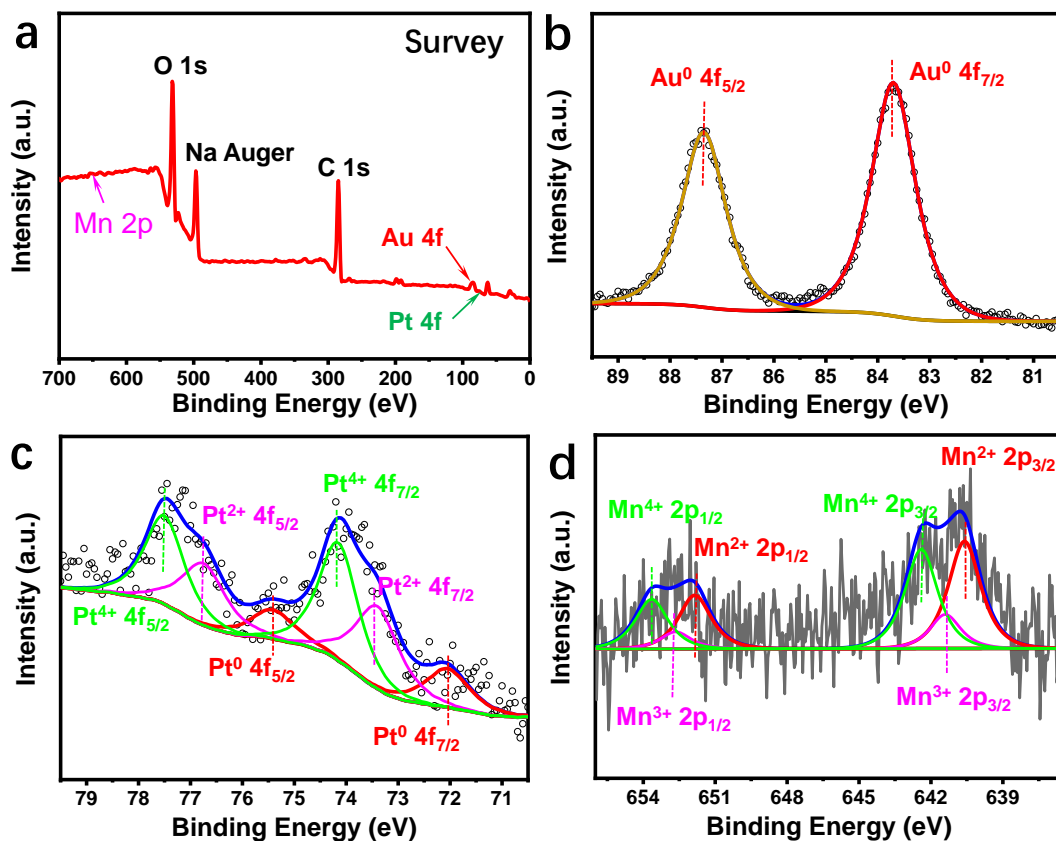


Figure S4. XPS spectra of $\text{Au}_{10}\text{Pt}_1\text{@MnO}_2\text{-H}$: (a) Survey; (b) Au; (c) Pt; (d) Mn.

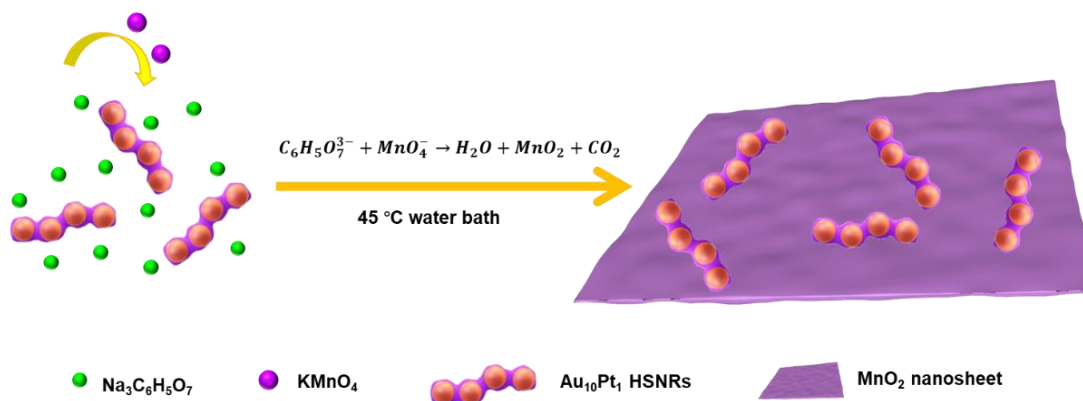


Figure S5. Formation mechanism of $\text{Au}_{10}\text{Pt}_1\text{@MnO}_2$ composite structure.

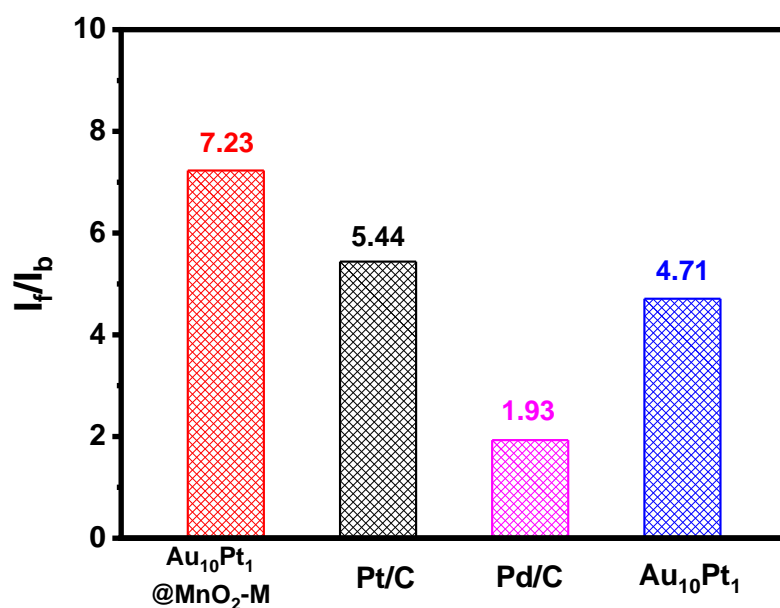


Figure S6. The I_f/I_b ratio of MOR with different catalysts.

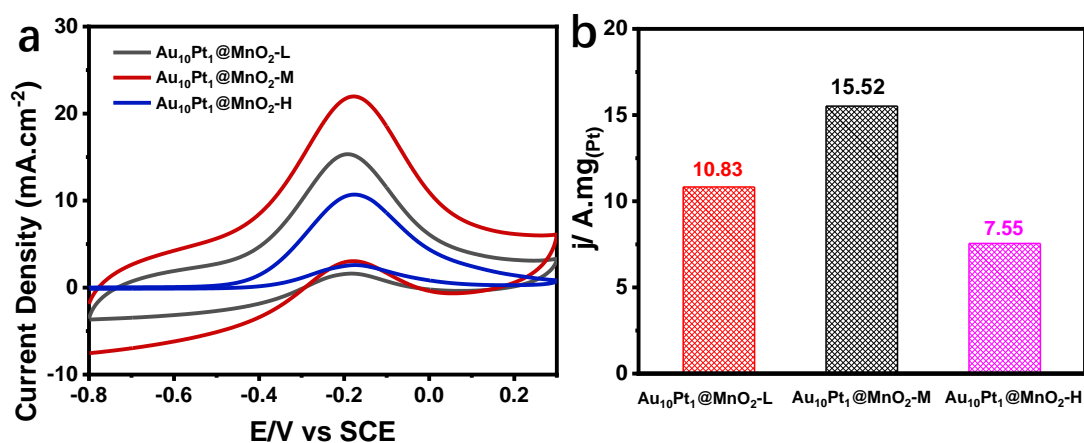


Figure S7. The electrocatalytic MOR of different catalysts in 1 M KOH and 1 M CH_3OH solutions: (a) CV curve of mass activity; (b) mass activity at the highest current density.

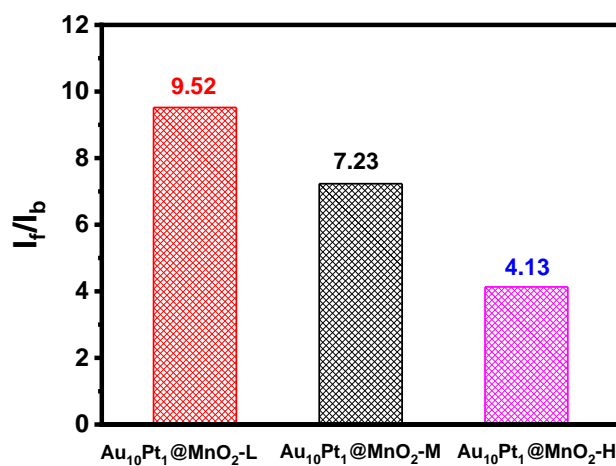


Figure S8. The I_f/I_b ratio of MOR with different catalysts.

Table S1. The ratios of different states of elements from XPS analysis about Au₁₀Pt₁@MnO₂-M.

Element	State	Ratios (%)
Au	Au ⁰	100
	Pt ⁰	26.1
Pt	Pt ²⁺	73.9
	Mn ²⁺	36.4
Mn	Mn ³⁺	26.0
	Mn ⁴⁺	37.6

Table S2. The ratios of different states of elements from XPS analysis about Au₁₀Pt₁@MnO₂-H.

Element	State	Ratios (%)
Au	Au ⁰	100
	Pt ⁰	17.0
Pt	Pt ²⁺	36.3
	Pt ⁴⁺	46.7
Mn	Mn ²⁺	45.0
	Mn ³⁺	13.4
	Mn ⁴⁺	41.6