

Supplementary Information:

Supported Sub-5nm Pt-Fe Intermetallic Compounds for

Electrocatalytic Application

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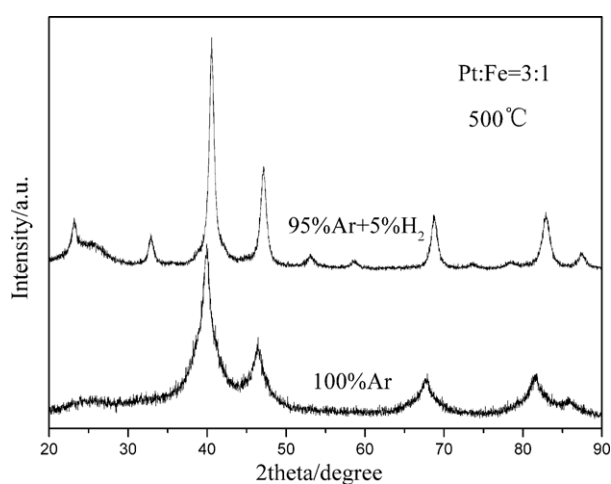


Figure S1. Powder XRD patterns of as-prepared Pt₃Fe₁/C annealed under inert and reducing atmosphere.

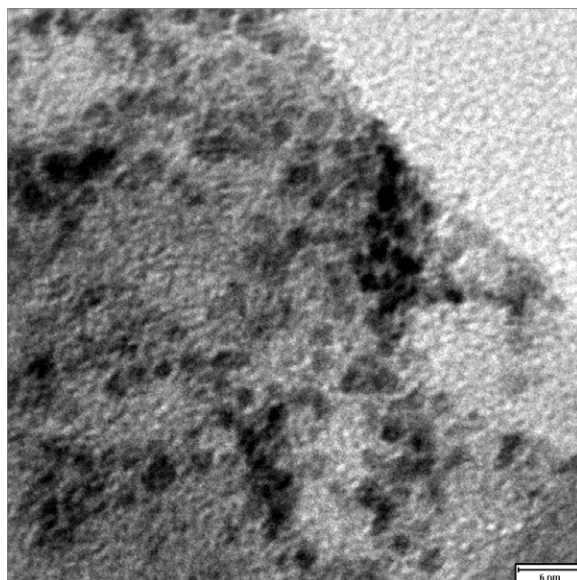


Figure S2. TEM images of typical as-synthesized supported chemically disordered FCC structure Pt-Fe nanoparticles

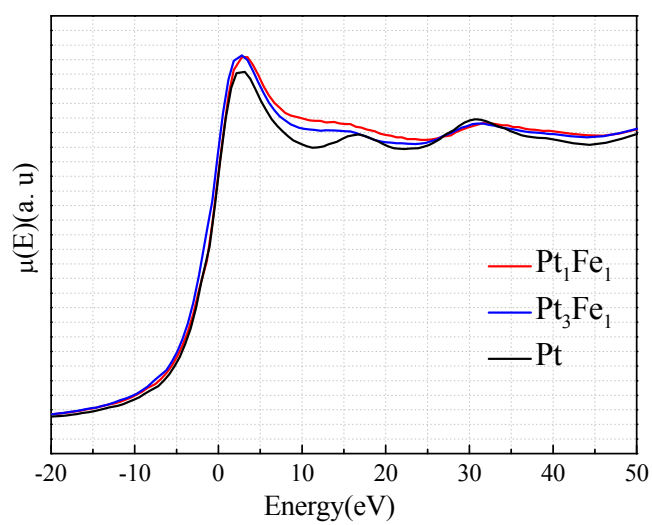


Figure S3. Normalised Pt L₃-edge XANES spectra of Pt, Pt₃Fe₁/C and Pt₁Fe₁/C. Pt L₃:11564eV

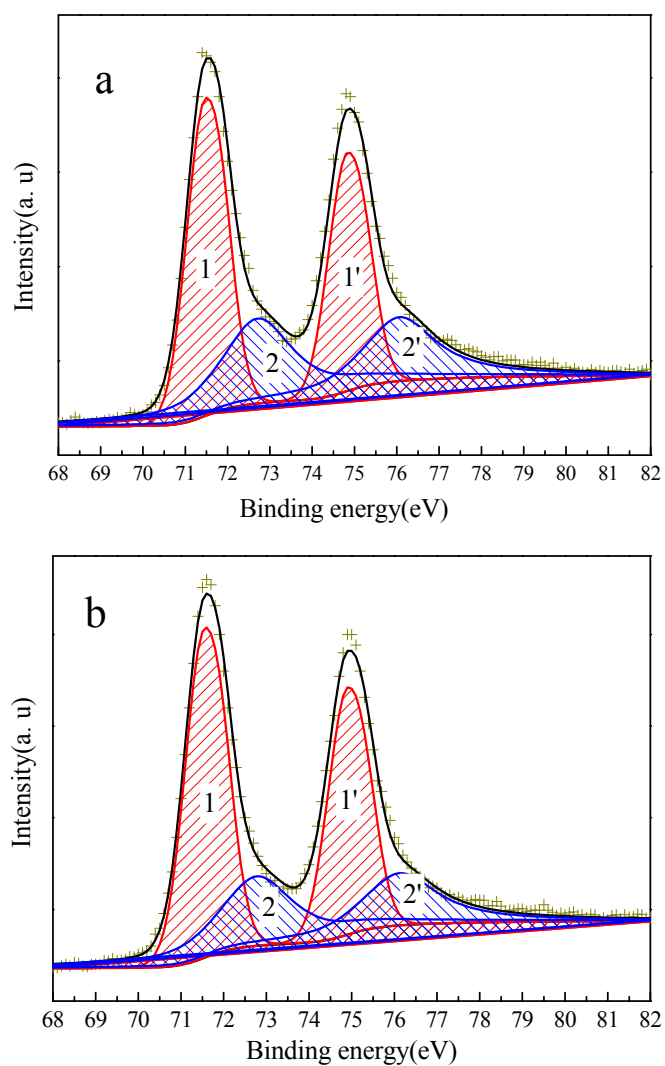


Figure S4. Pt 4f core level spectrum of a)Pt₃Fe₁/C; b)Pt₁Fe₁/C. The doublet peaks (labelled 1 and 1') are generated by photoelectrons emitted from Pt(0) and the other doublet peaks (labelled 2 and 2') are generated by photoelectrons emitted from Pt(II).

Table S1. XPS analysis of Pt₃Fe₁/C and Pt₁Fe₁/C.

Electrocatalyst	Species	Binding energy of 4f _{7/2} /eV	Relative intensity/%
Pt ₃ Fe ₁ /C	Pt(0)	71.5	59
	Pt(II)	72.8	41
Pt ₁ Fe ₁ /C	Pt(0)	71.5	65
	Pt(II)	72.7	35