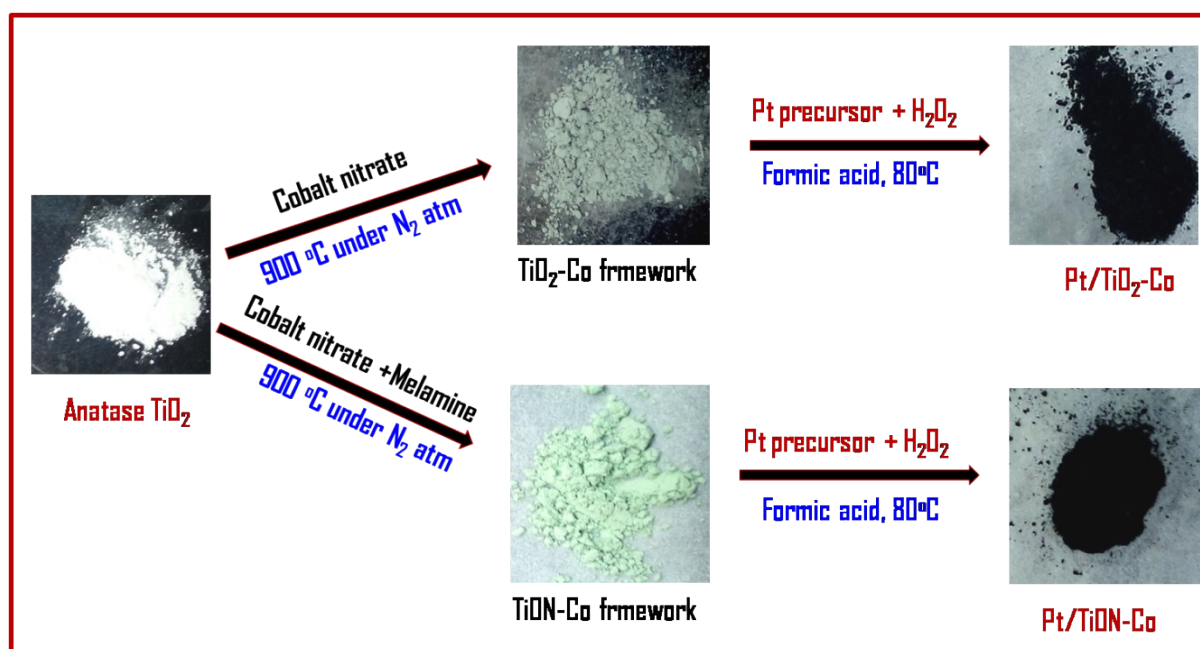


Nitrogen and cobalt co-doped titanium dioxide framework as stable catalyst support for polymer electrolyte fuel cells

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Scheme 1: Various stages of colour change are observed for preparation of Pt deposited on TiO₂ electrocatalysts.

Table 1: EDX of various cathode electrocatalysts

Type	Pt (Wt. %)	C (Wt. %)	N (Wt. %)	Co (Wt. %)	Ti (Wt. %)	O (Wt. %)
Pt/C	39-41	59-61	----	----	----	----
Pt/TiO ₂ -Co	40-42	----	----	1.5-2.00	34-36	21-23
Pt/TiON-Co/	40-42	2.5-3.5	6-8	1.5-2.00	30-32	15-17

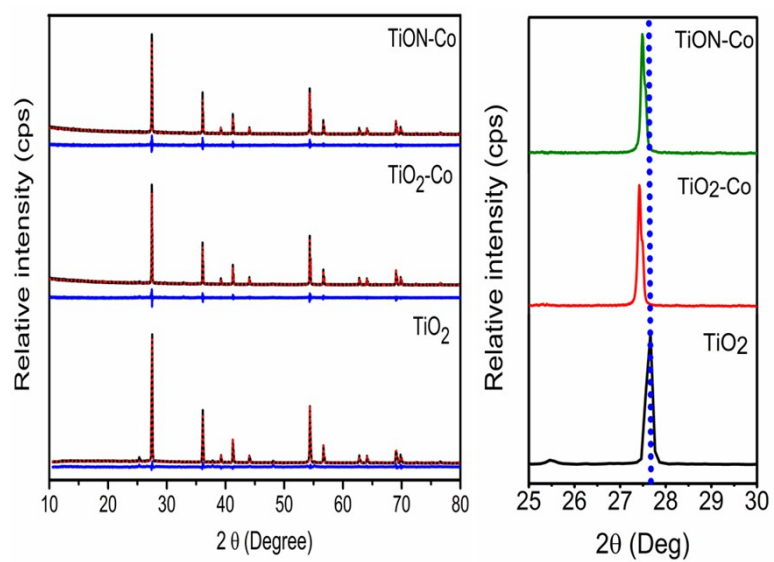


Fig. 1S. XRD refinement for TiO₂, TiO₂-Co and TiON-Co and their major plane (110) peak shift.

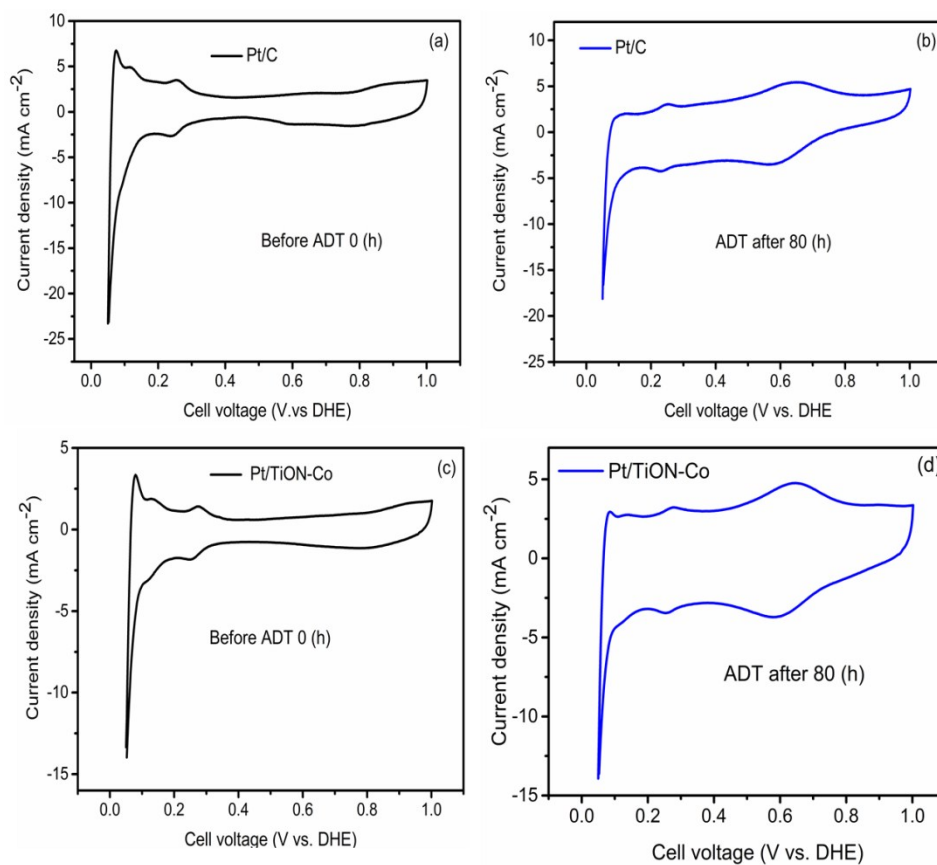


Fig. 2S. PEFCs with CV at room temperature with scan rate of 50 mV s⁻¹. (a) Pt/C before ADT (b) Pt/C after 80 h of ADT and (c) Pt/TiON-Co before ADT and (d) Pt/TiON-Co after 80 h of ADT.

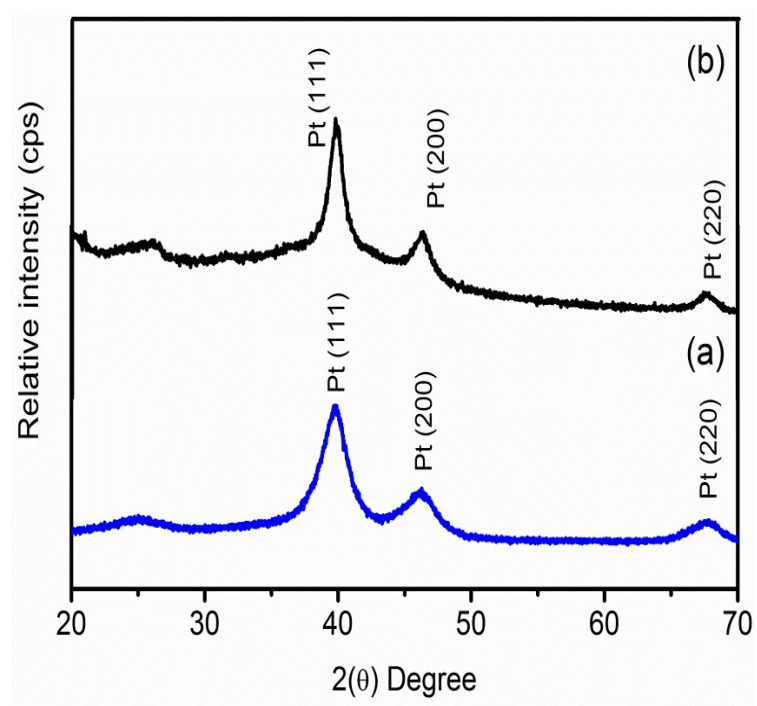


Fig. 3S. X-ray diffraction pattern of Pt deposited on carbon (a) before ADT and (b) after 80 h of ADT.

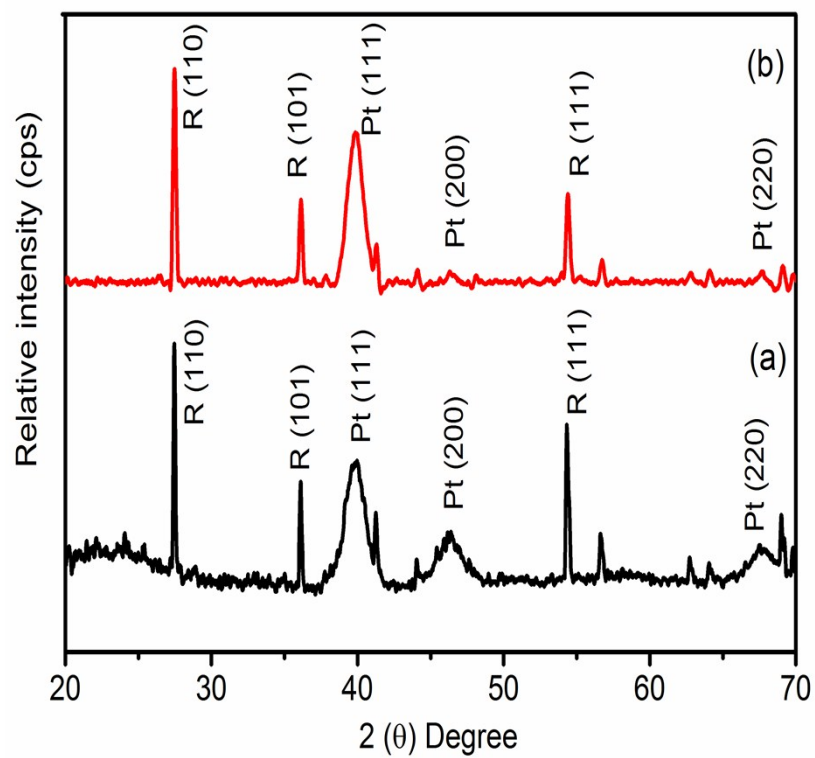


Fig. 4S. X-ray diffraction pattern of Pt deposited on TiON-Co electrocatalyst (a) before ADT and (b) after 80 h of ADT.

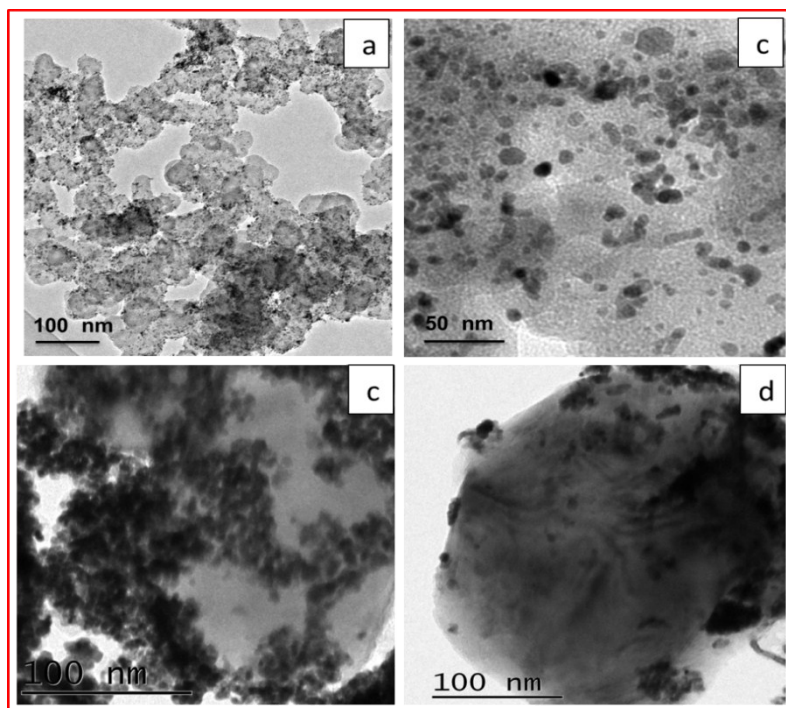


Fig. 5S. HR-TEM image of Pt/C and Pt/TiON-Co cathode electrocatalyst (a & b) before ADT, (c & d) after 80 h of ADT.