Electronic Supplementary Material (ESI) for New Journal of Chemistry.

ESI - Supplementary material

Surfactant free synthesis of high surface area Pt@PdM$_3$ (M = Mn, Fe, Co, Ni, Cu) core/shell with enhanced electrocatalytic activity and durability for PEM fuel cell application.

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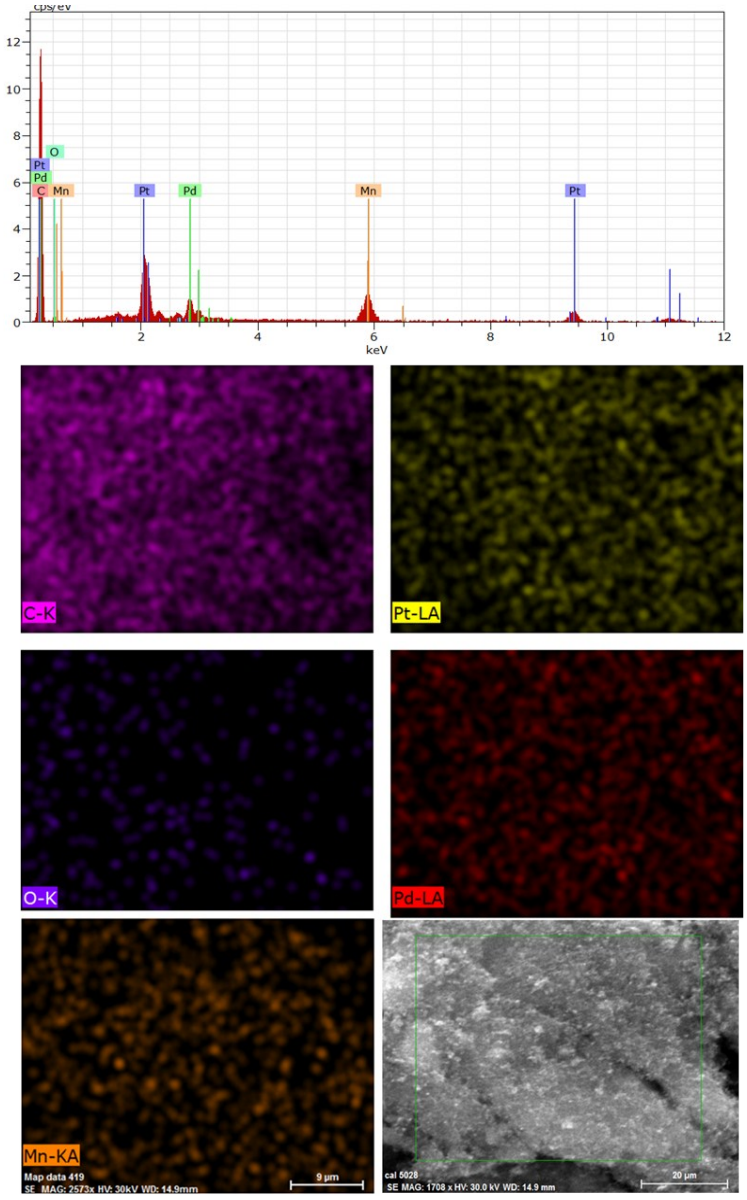


Fig. S1 SEM EDAX and elemental mapping images of Pt@PdMn$_3$/C electrocatalyst.

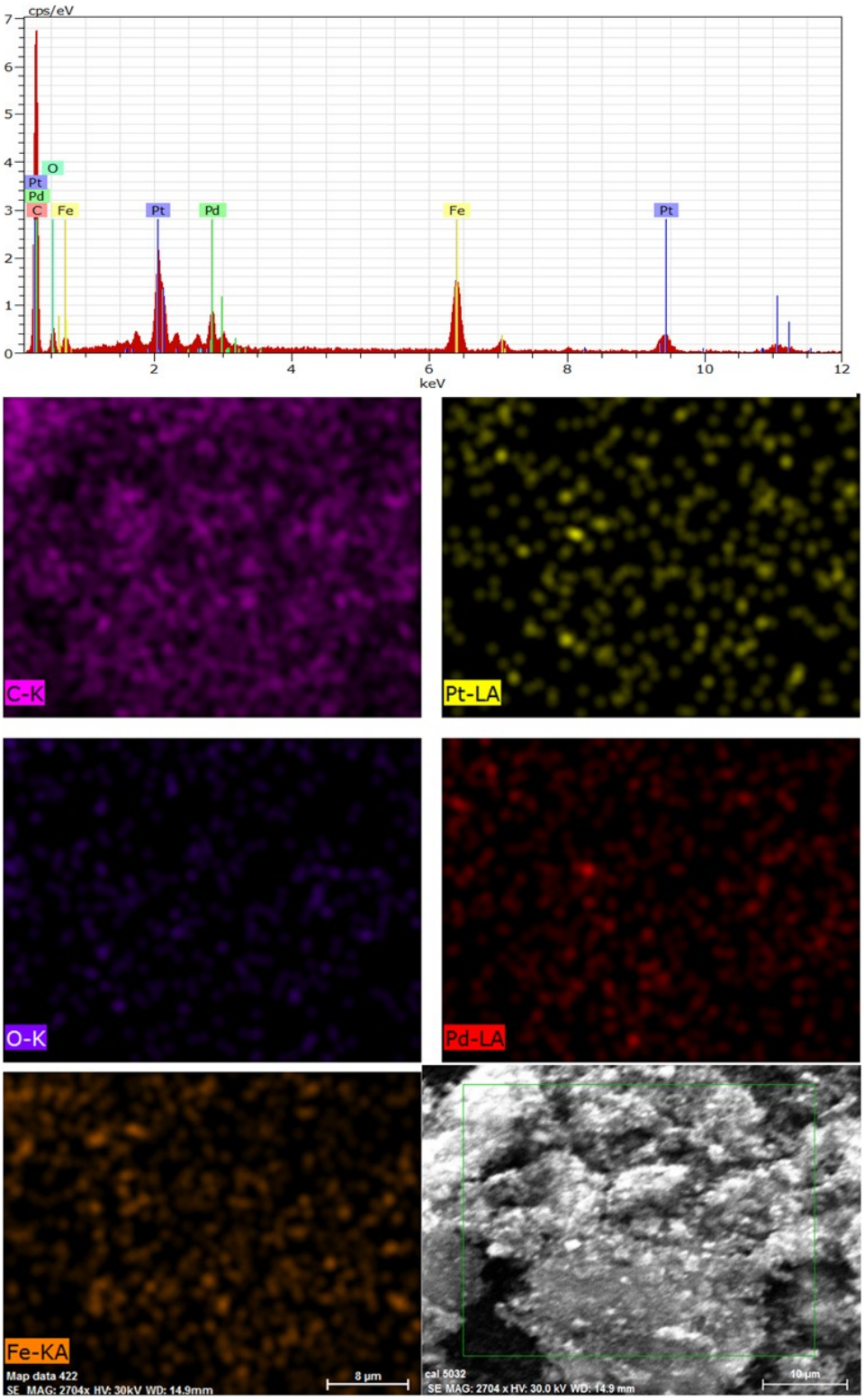


Fig. S2 SEM EDAX and elemental mapping images of Pt@PdFe$_3$/C electrocatalyst.

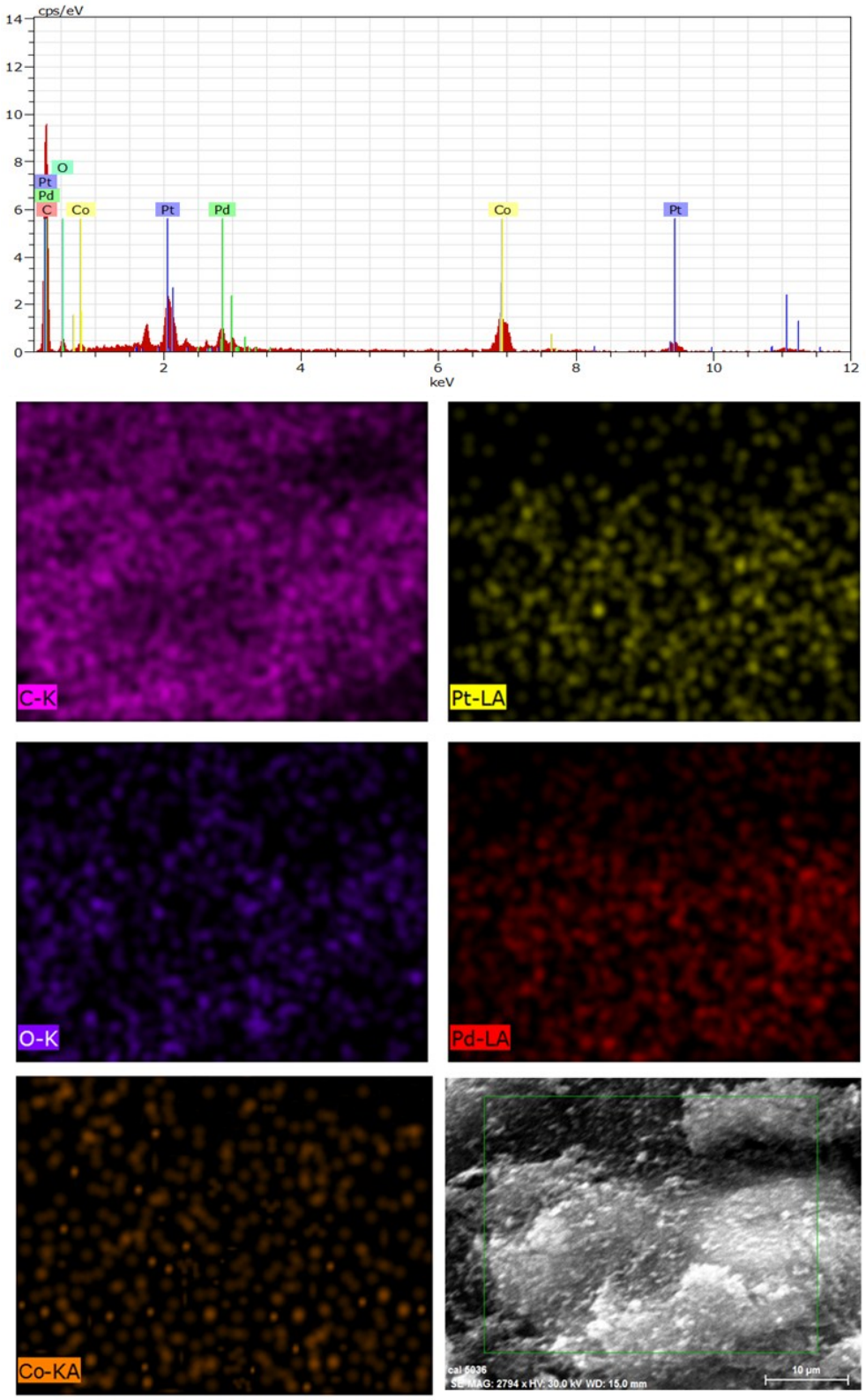


Fig. S3 SEM EDAX and elemental mapping images of Pt@$PdCo_3$/C electrocatalyst.

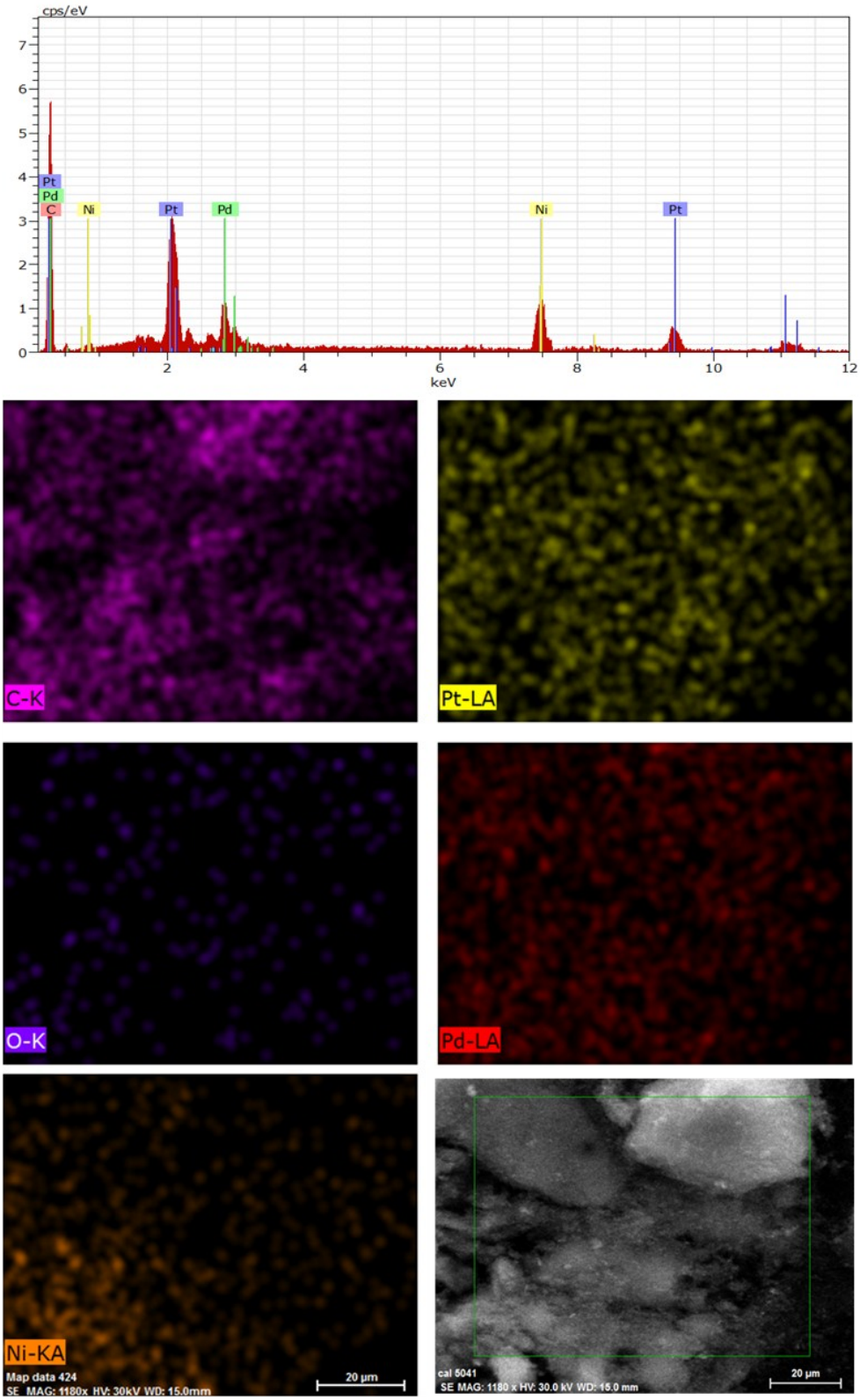


Fig. S4 SEM EDAX and elemental mapping images of Pt@PdNi$_3$/C electrocatalyst.

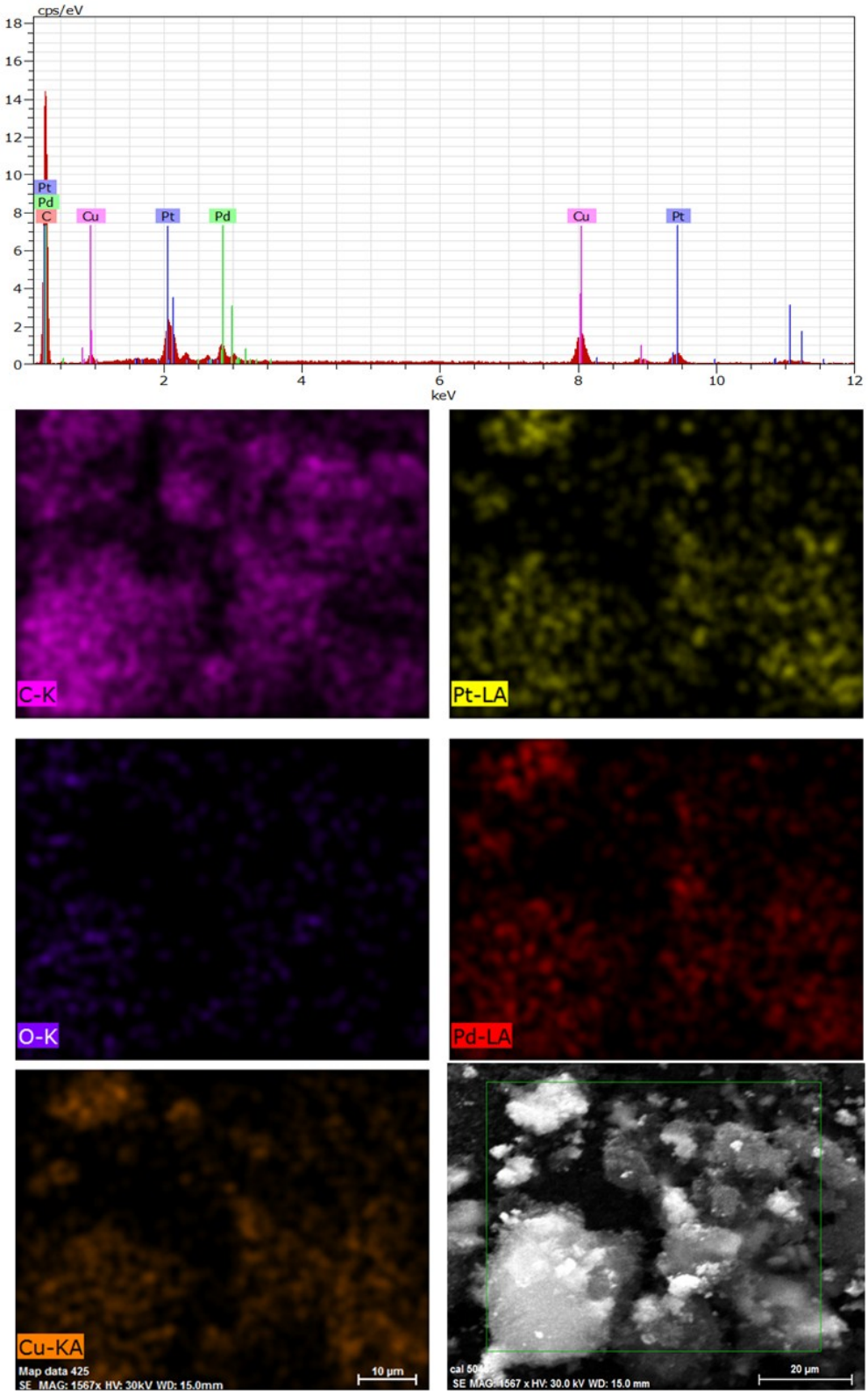
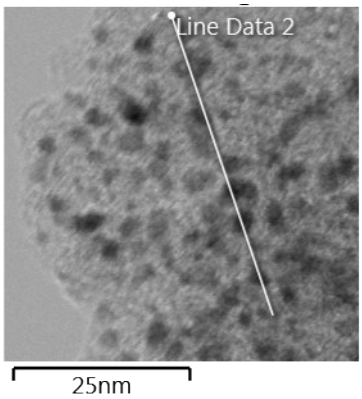
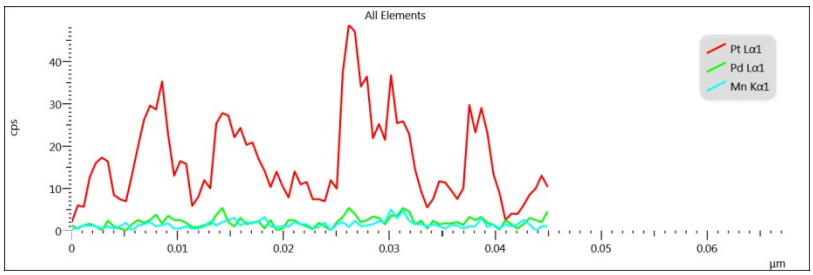


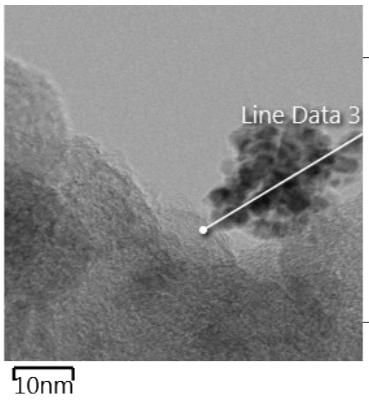
Fig. S5 SEM EDAX and elemental mapping images of Pt@PdCu$_3$/C electrocatalyst.

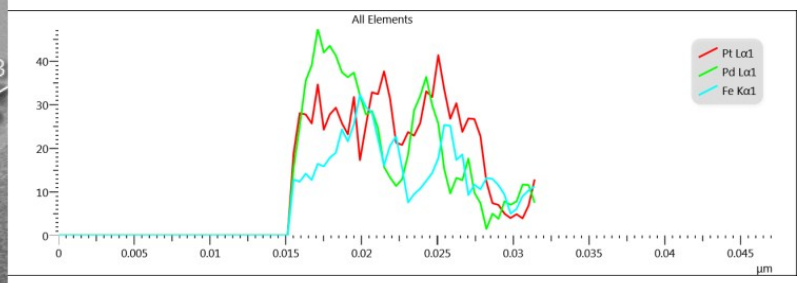
Pt@PdMn$_3$/C



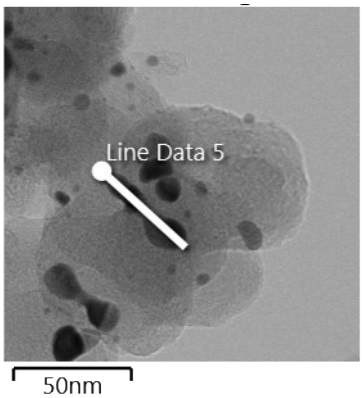


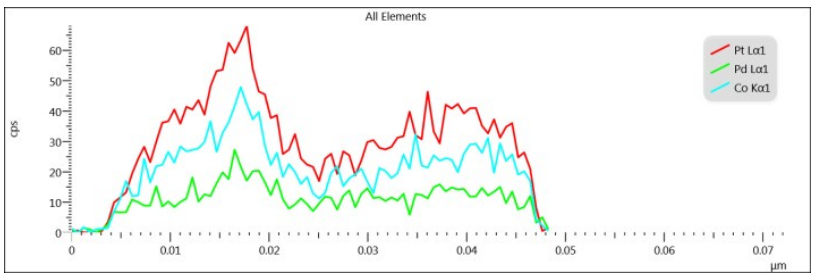
Pt@PdFe$_3$/C



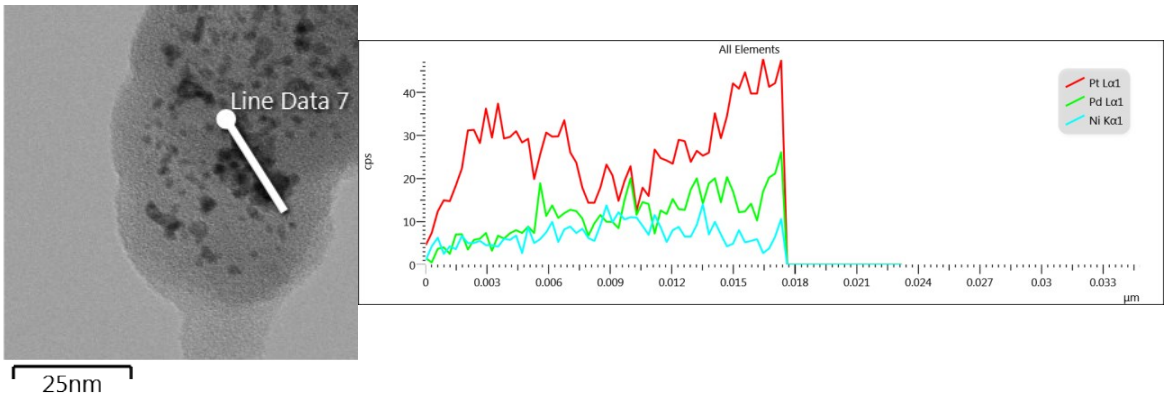


Pt@PdCo$_3$/C





Pt@PdNi$_3$/C



Pt@PdCu$_3$/C

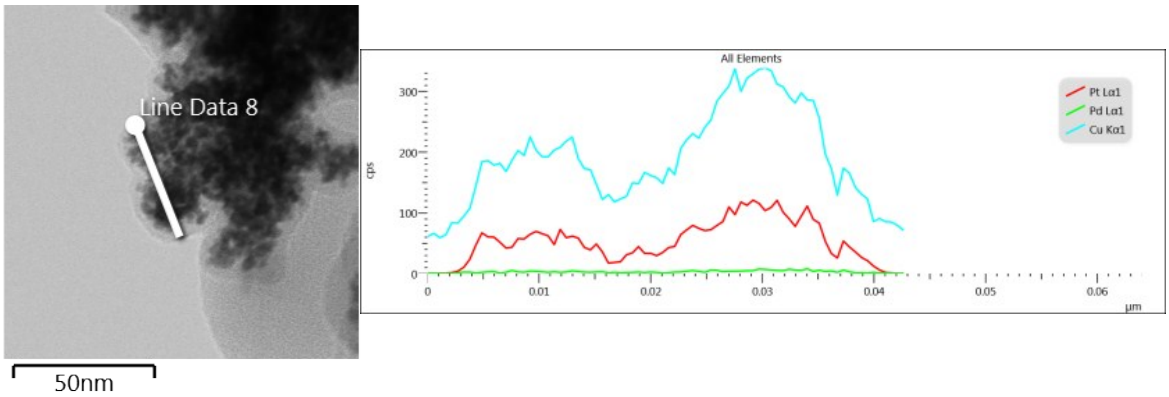


Fig. S6 TEM line elemental mapping images of Pt@PdM$_3$/C (M = Mn, Fe, Co, Ni, Cu) electrocatalyst

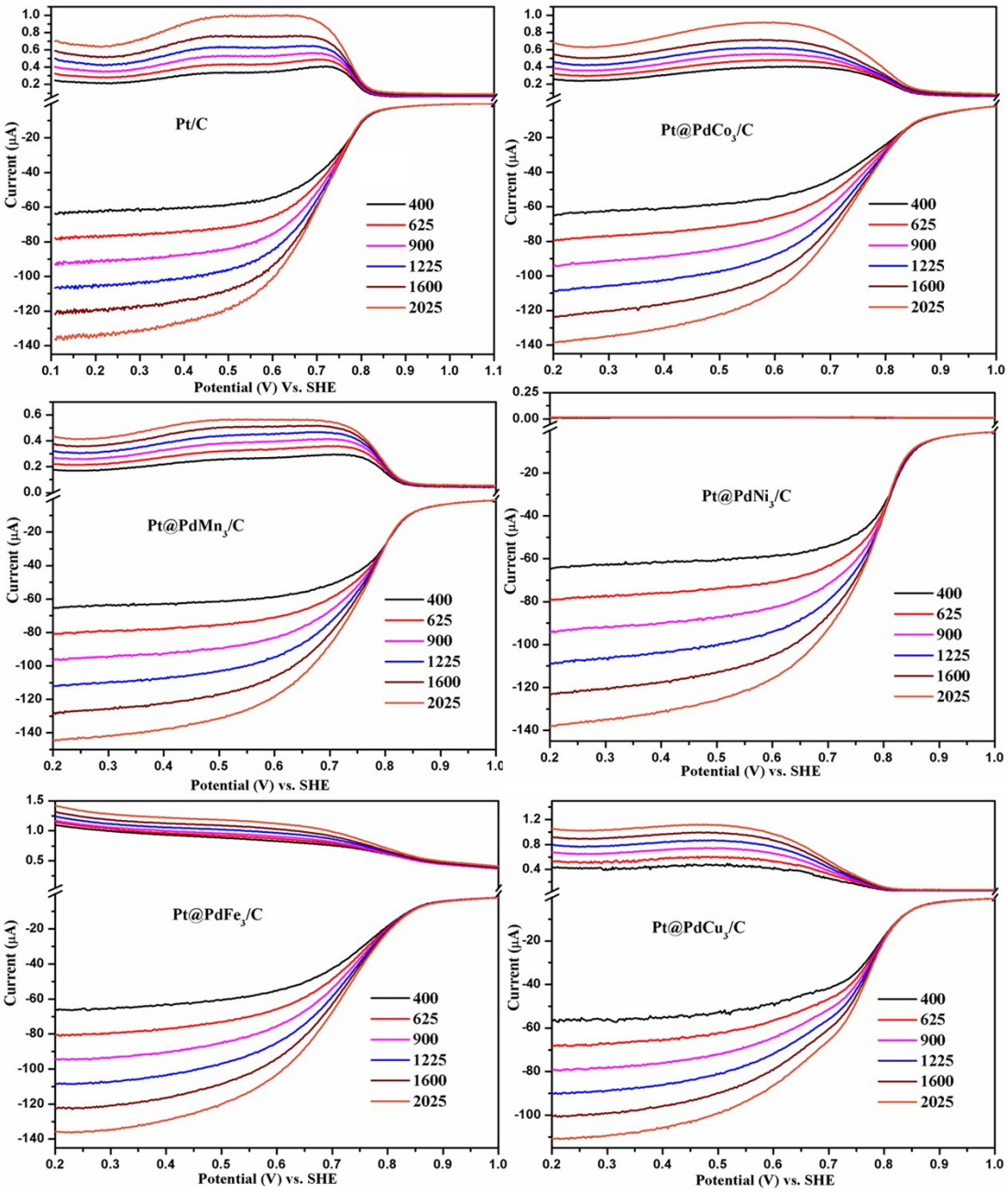


Fig. S7 RRDE measurements (at 400 – 2025 rpm values) of oxygen reduction reaction of Pt/C, Pt@PdM$_3$/C (M = Mn, Fe, Co, Ni, Cu) electrocatalysts in O_2 saturated 0.5 M H_2SO_4 at a scan rate of 10 mV s^{-1}. Ring electrode potential was fixed at 1.2 V vs. SHE.

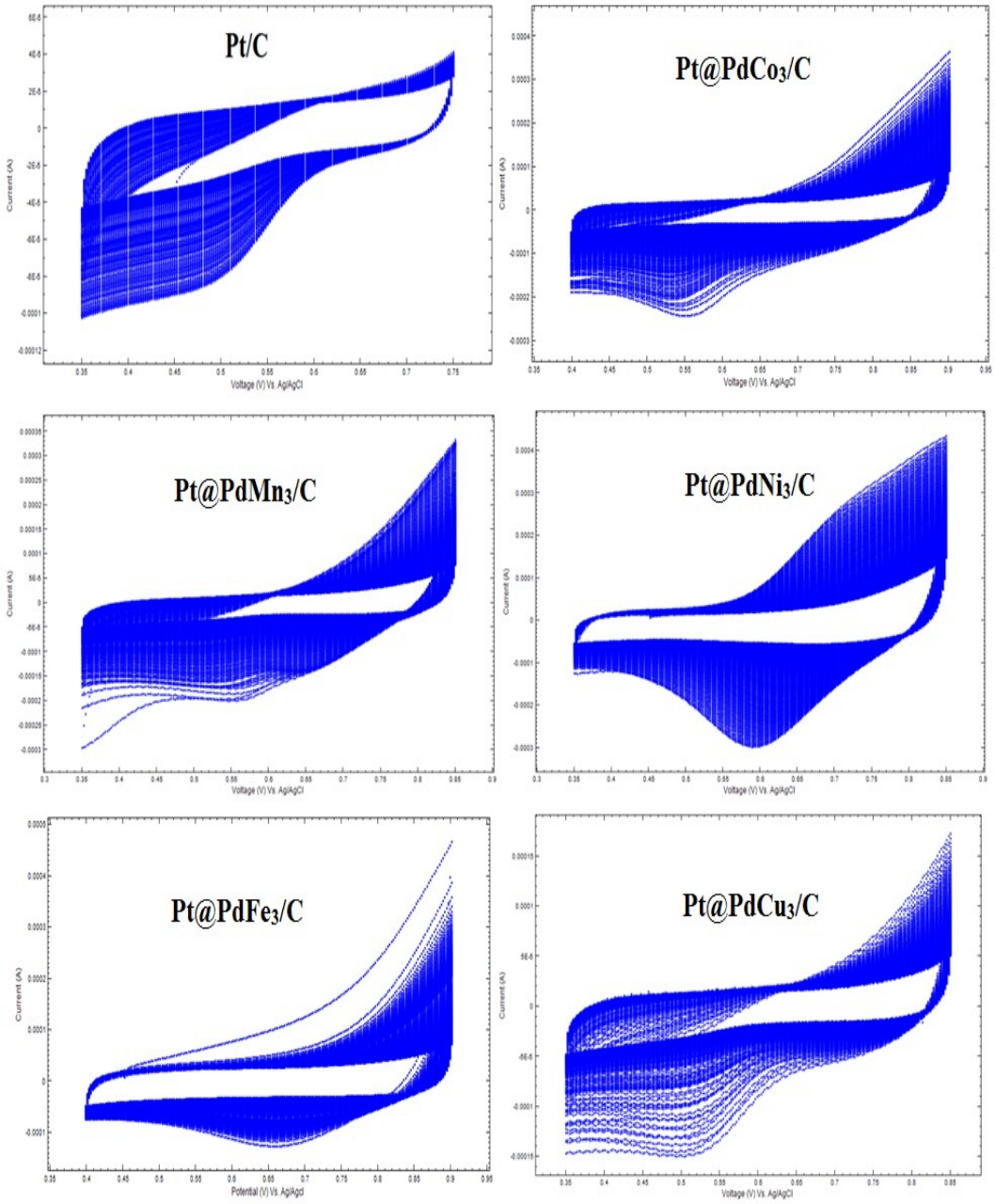


Fig. S8 1000 Potential cycling in the potential window of 0.3 to 0.8 V vs. Ag/AgCl in presence of N_2 saturated 0.5 M H_2SO_4.