Flexible-Fiber Shaped Cobalt Modified with Au-Mn **Nanoparticles for Formic Acid Electro-Oxidation**



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In this study, flexible catalysts have been prepared via facile electrochemical approach with the aim to use them as the anode material in direct formic acid fuel cells (DFAFCs).

FABRICATION OF CATALYSTS







ELECTROOXIDATION OF FORMIC ACID







CONCLUSIONS

found that the lt was deposition of Au, Mn or Au-

Fig. 2. CVs of Co_{fiber} (a, b), $MnCo_{fiber}$ (a) and $Au_{IM}Co_{fiber}$ (b) catalysts deposited on Cu/PI in 0.3 M formic acid and 1 M NaOH at 100 mV s⁻¹.







Fig. 3. CVs of MnCo_{fiber}, AuMnCo_{fiber} and MnAuCo_{fiber} catalysts deposited on Cu/PI in 0.3 M formic acid and 1 M NaOH at 100 mV s⁻¹.



Fig. 6. (a) Anodic scans for AuMnCo_{fiber}/Cu/PI recorded in 0.3 M formic acid and 1 M NaOH at scan rates from 10 to 200 mV s⁻¹. (b) Dependence of peak current on scan rate.



Fig. 4. CVs of Mn deposited on bare Au and bare Au catalysts in 0.3 M formic acid and 1 M NaOH at 100 mV s⁻¹.



Fig. 9. (a) Anodic scans for AuMn

Mn nanoparticles on Co_{fiber}/Cu/PI results in enhanced electrocatalytic activity of latter catalysts electrotowards the oxidation of formic acid in medium as alkaline an with that for compared Au MnAu bare and Moreover, the catalysts. prepared flexible catalysts seem to be a promising anode material for DFAFCs.

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