

Supporting Information:

**Enhanced Electrocatalytic Performance of Interconnected Rh
Nano-chains towards Formic Acid Oxidation**

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SI –I: Cyclic Voltammograms of Rh electrocatalysts in 0.5 M H₂SO₄

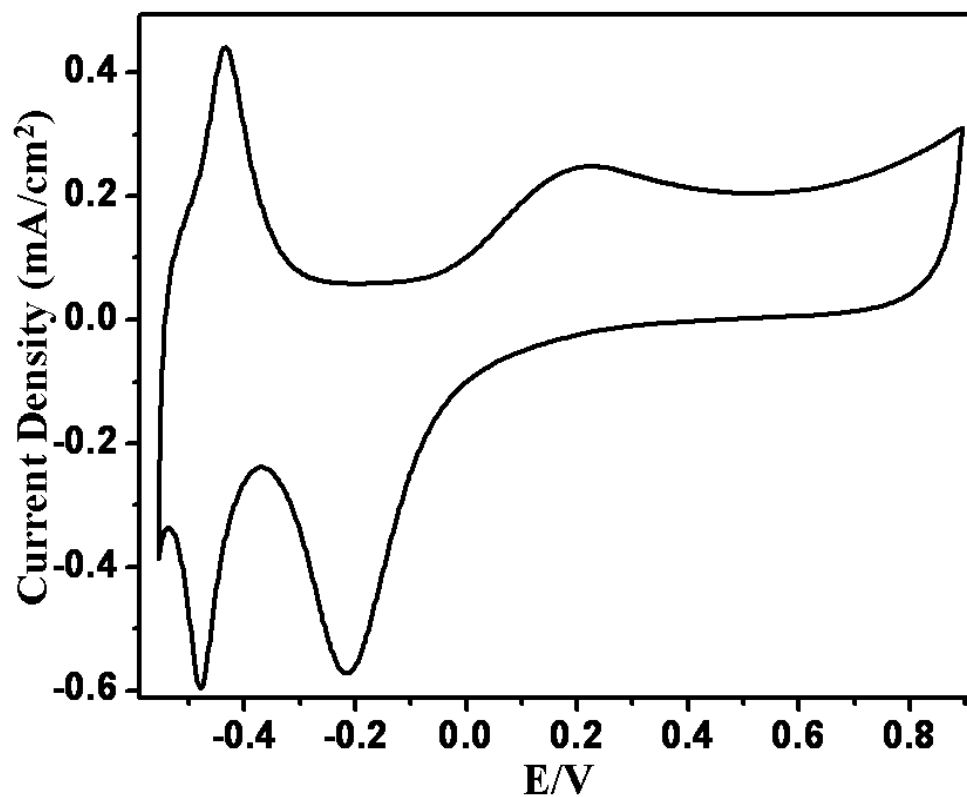


Figure: Cyclic voltammogram of Rh-TA nano-chain electro-catalysts coated on a 3 mm diameter glassy carbon electrode in 0.5 M H₂SO₄ using a Hg-Hg₂SO₄ as reference electrode and Pt foil as a counter electrode at a scan rate of 50 mV/s (voltammograms is of second cycle).

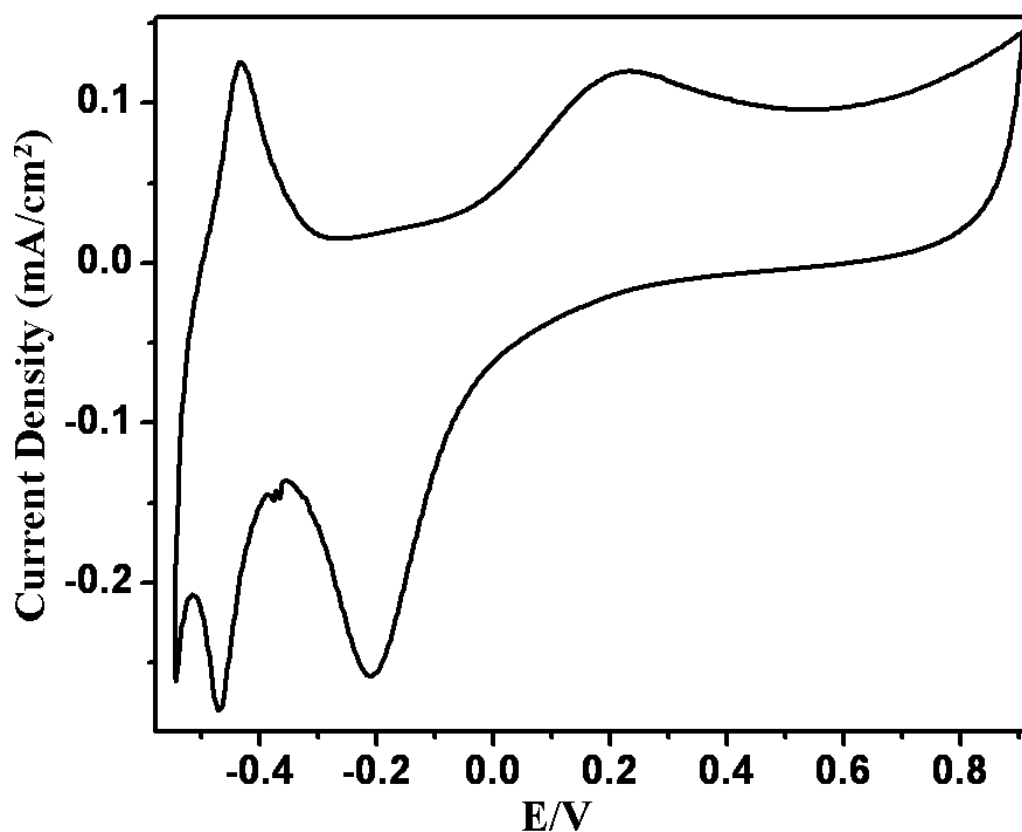


Figure: Cyclic voltammogram of Rh-AA nano-chain electro-catalysts coated on a 3 mm diameter glassy carbon electrode in 0.5 M H₂SO₄ using a Hg-Hg₂SO₄ as reference electrode and Pt foil as a counter electrode at a scan rate of 50 mV/s (voltammograms is of second cycle).

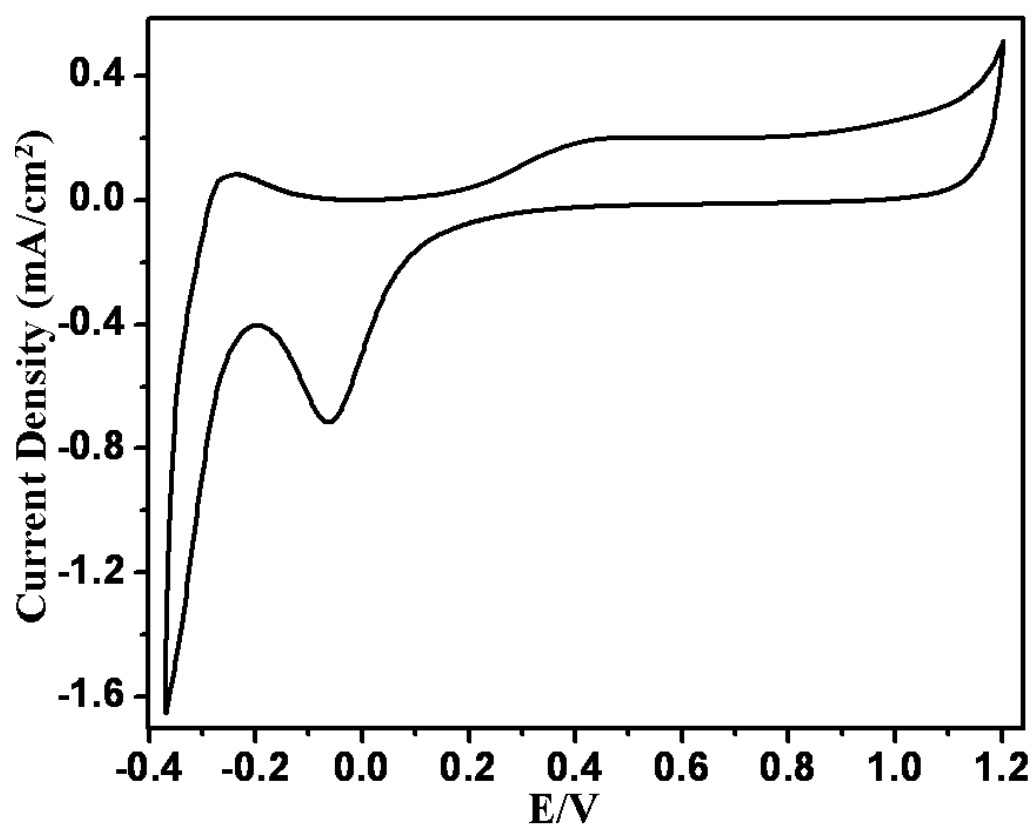


Figure: Cyclic voltammogram of bulk Rh (wire) in 0.5 M H₂SO₄ using a Hg-Hg₂SO₄ as reference electrode and Pt foil as a counter electrode at a scan rate of 50 mV/s (voltammograms is of second cycle).

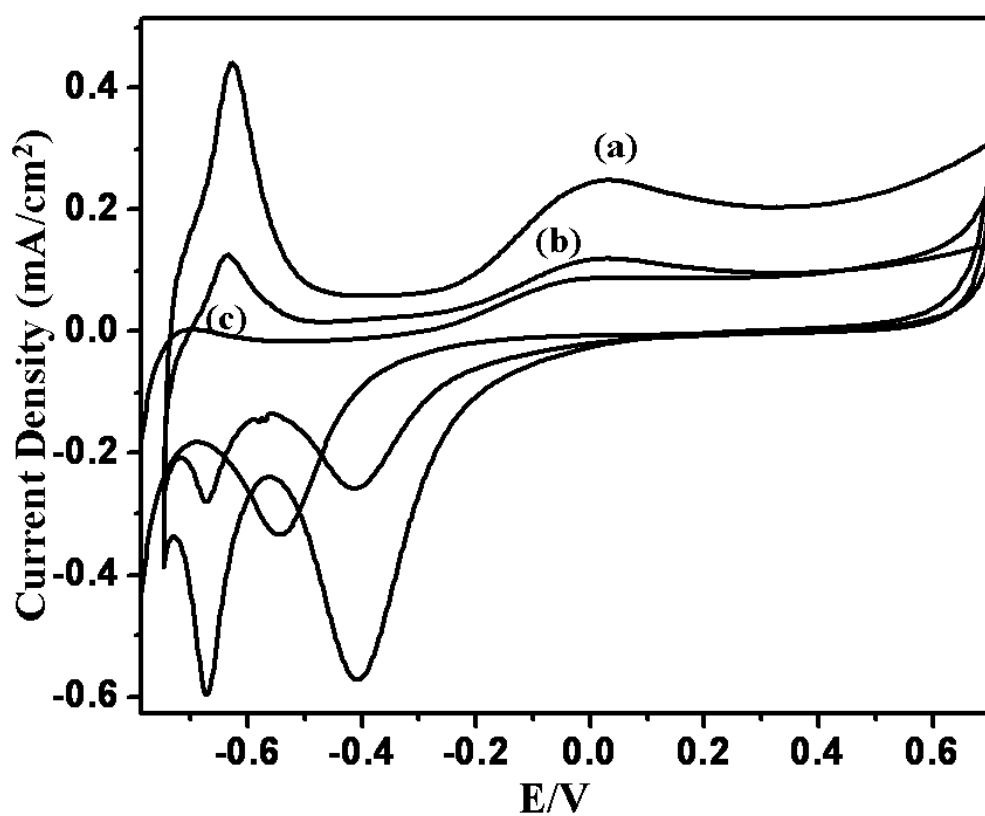
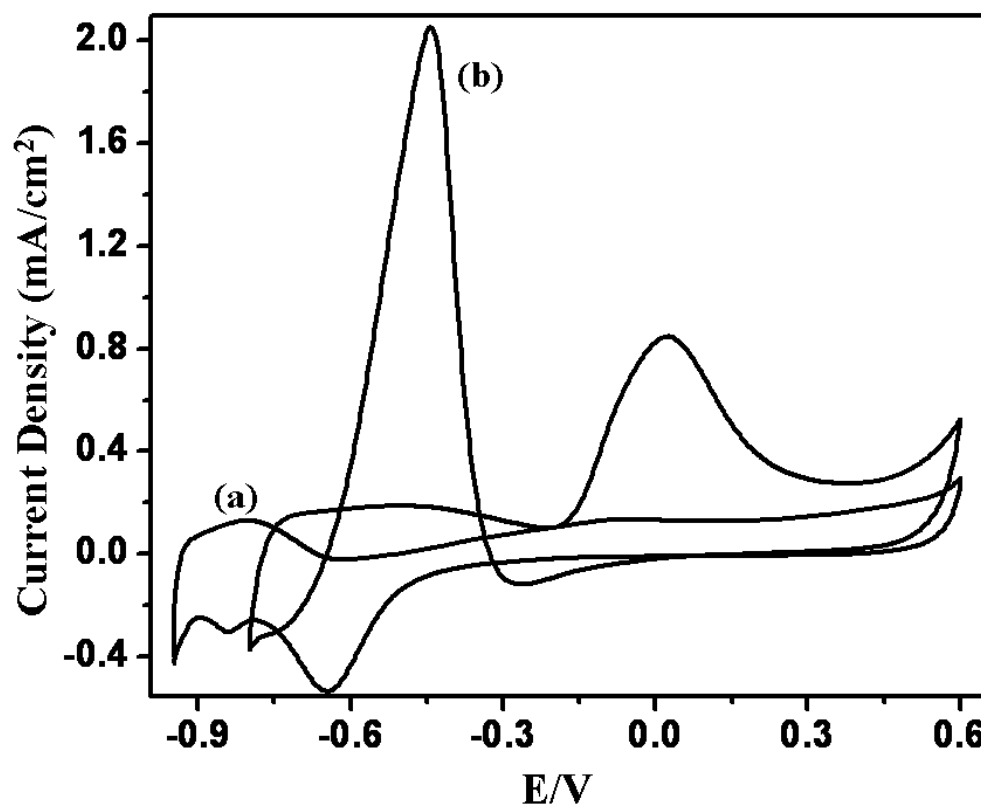
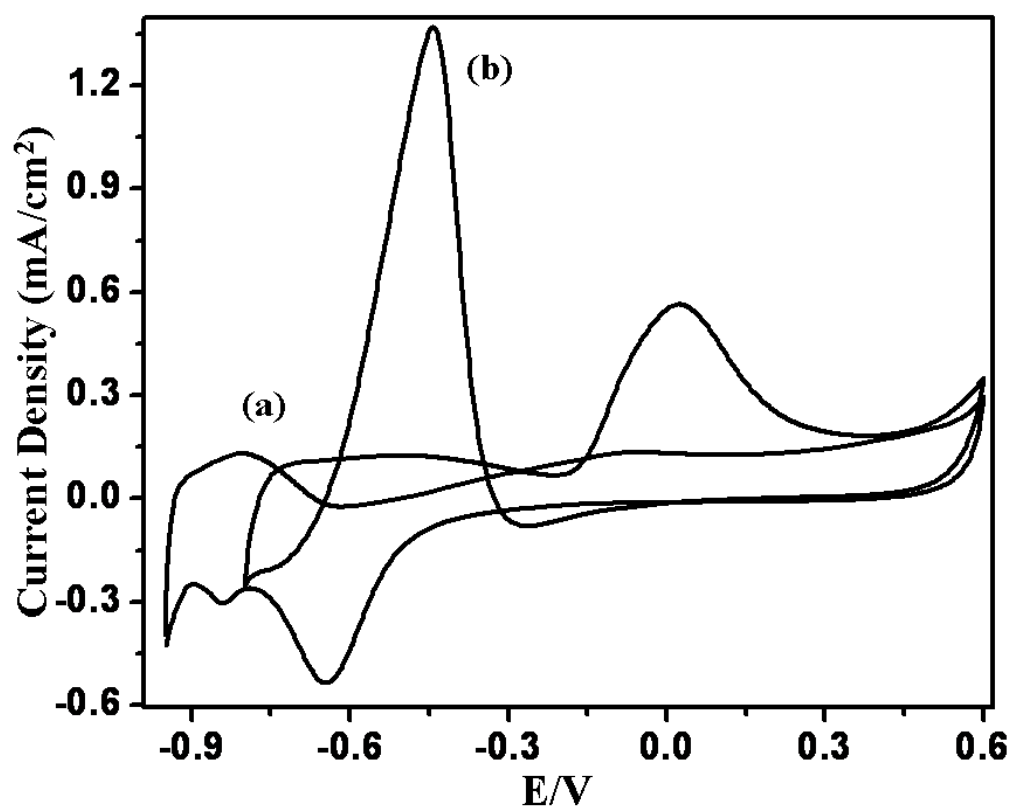


Figure: Superimposed cyclic voltammetric response of (a) Rh-TA, (b) Rh-AA and (c) Rh bulk in 0.5 M H₂SO₄ at 50 mV/s.

SI-II: Superimposed Cyclic Voltammograms of Rh electrocatalysts in 0.5 M HClO₄ and in 0.5 M HClO₄ and 0.5 M HCOOH solution.

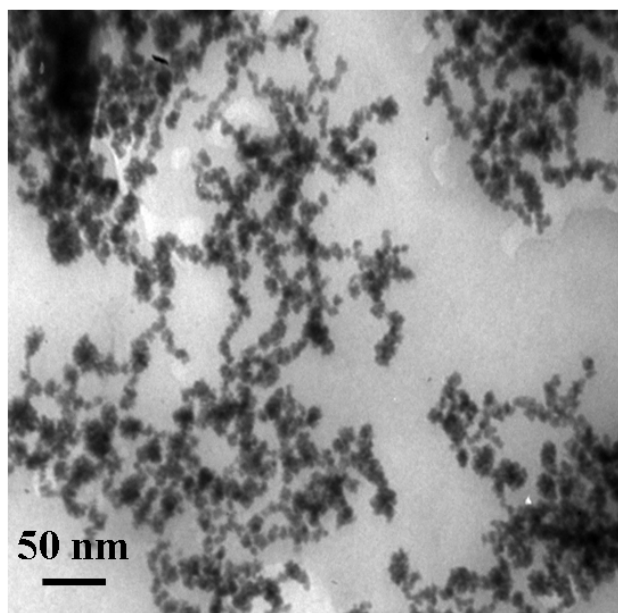


Superimposed cyclic voltammetric response of Rh-TA, in (a) 0.5 M HClO₄ and (b) in the mixture of 0.5 M HCOOH and 0.5 M HClO₄ solution at 50 mV/s.

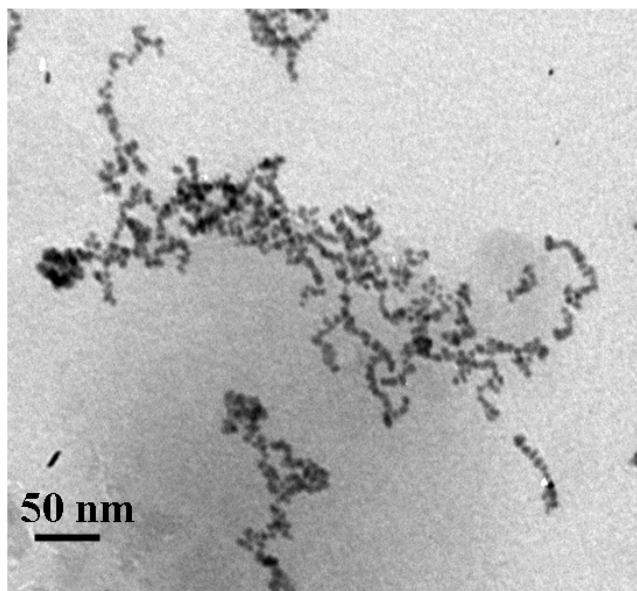


Superimposed cyclic voltammetric response of Rh-AA, in (a) 0.5 M HClO₄ and (b) in the mixture of 0.5 M HCOOH and 0.5 M HClO₄ solution at 50 mV/s.

SI-III: Transmission Electron Spectroscopy (TEM) after electrochemical studies:



(A) Rh- TA nanochains after electrochemical studies



(B) Rh- AA nanochains after electrochemical studies