

Supplementary Information

Proactive Effect of Algae-Based Graphene Support on the Oxygen Evolution Reaction Electrocatalytic Activity of NiFe

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1-Comparison of the reduction temperature in the OER activity.

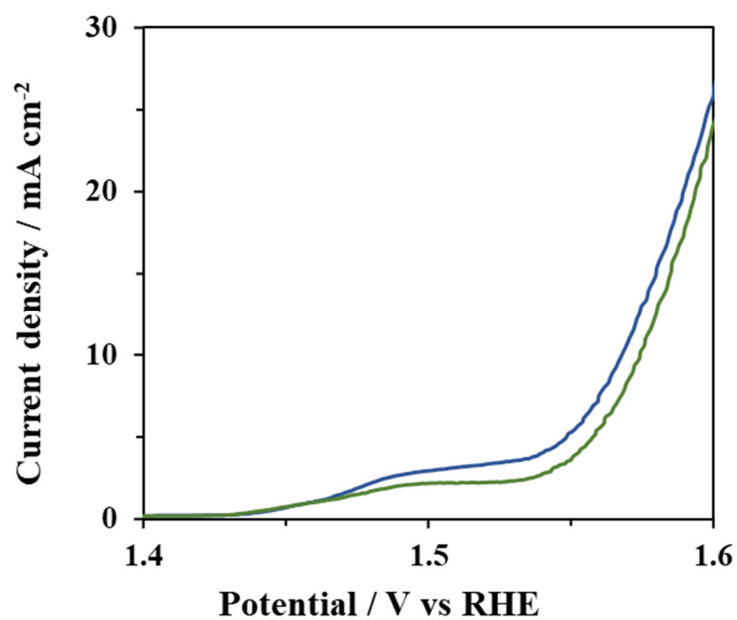


Figure S1. Linear sweep voltammetry of the samples TCP-G-GO-400-NiFe (blue) and TCP-G-GO-800-NiFe (green) recorded at 10 mVs⁻¹ in N₂ saturated KOH 1 M electrolyte.

2-SEM images:

a-SEM image of base TCP

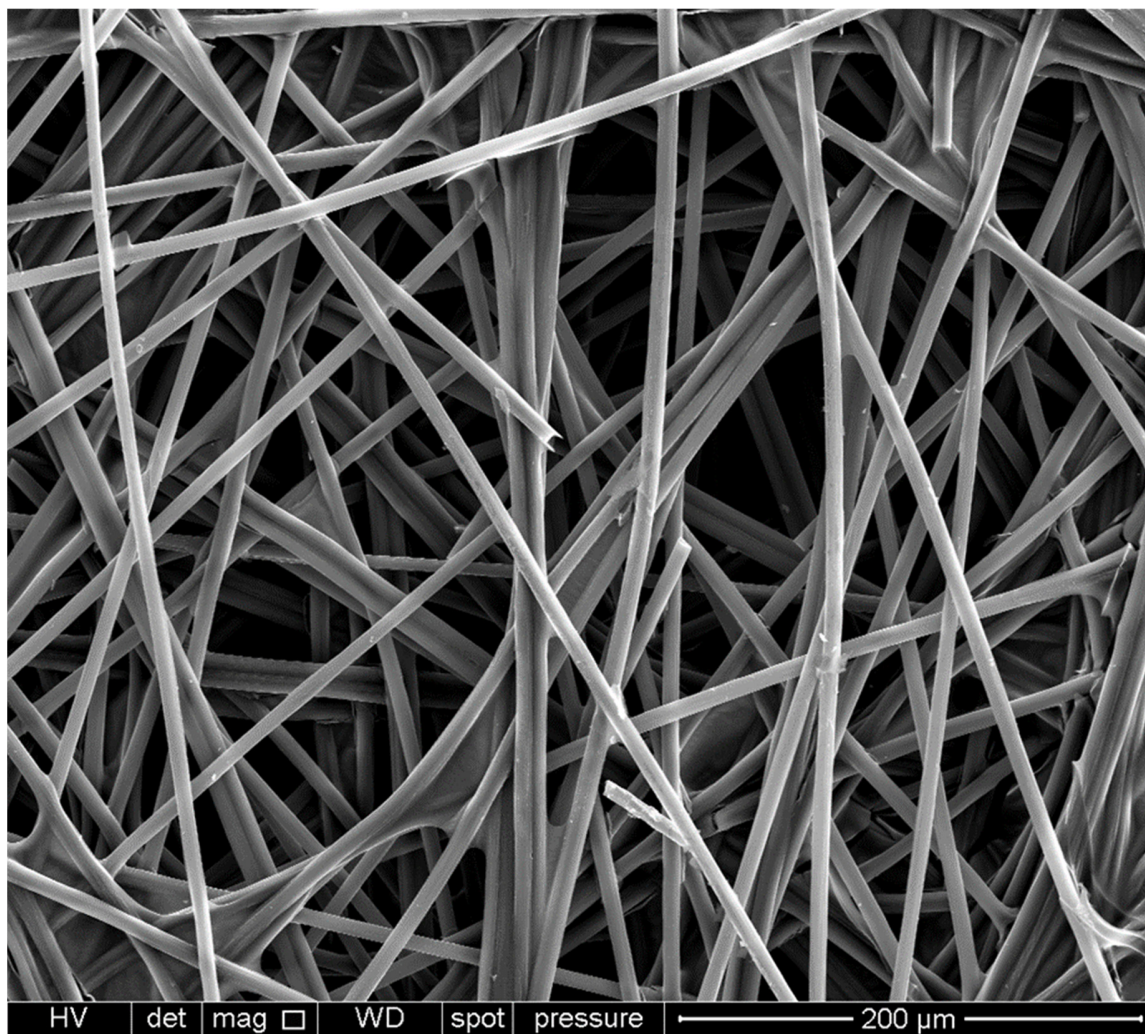


Figure S2. SEM image of thermally treated Toray Carbon Paper.

b-SEM analysis of graphite-based graphene material

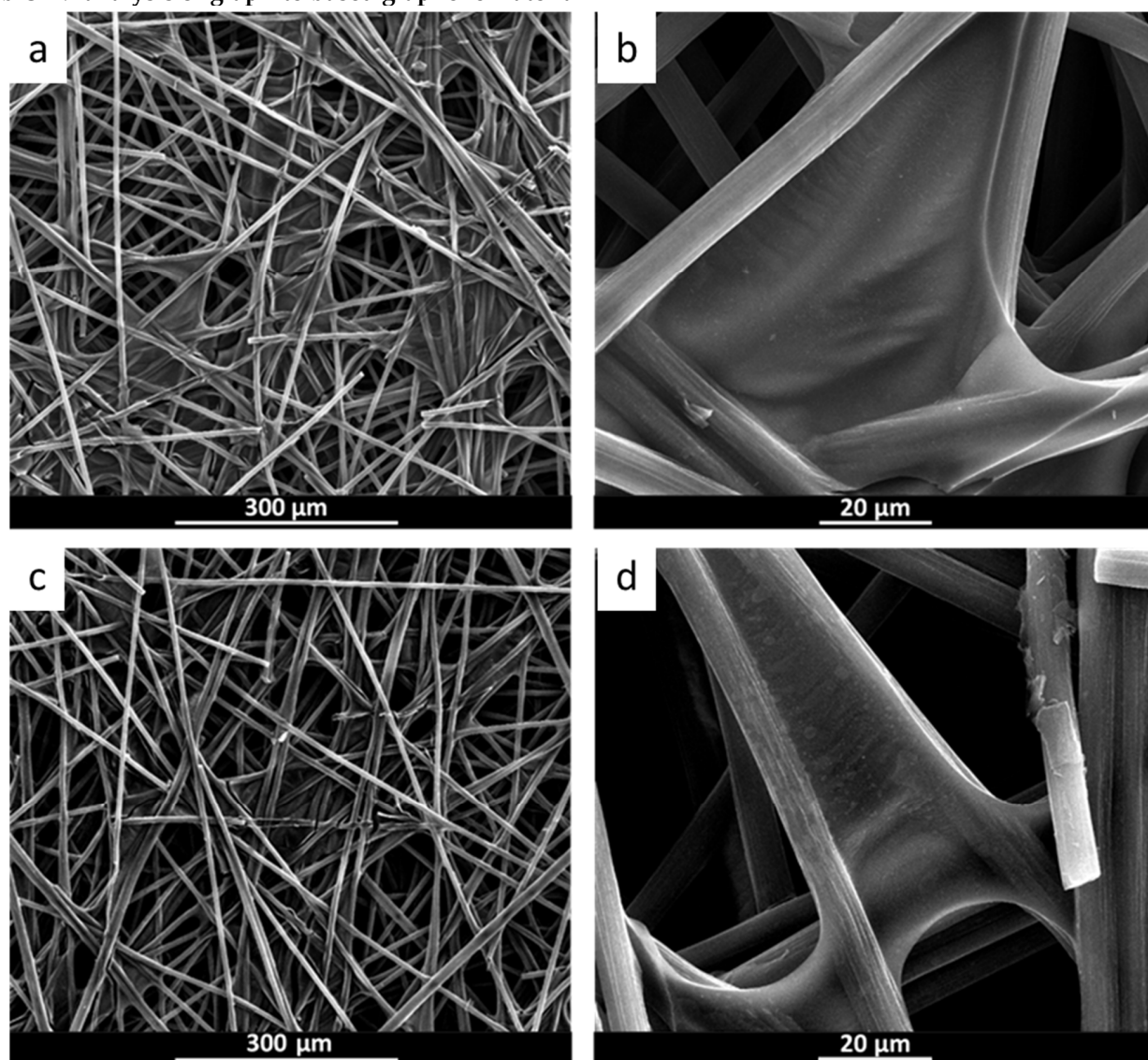


Figure S3. SEM analysis of graphite-based graphene material: a,b) deposited on TCP. c,d) after electrodeposition of NiFe.

c-SEM analysis of pos-catalysis hybrid materials

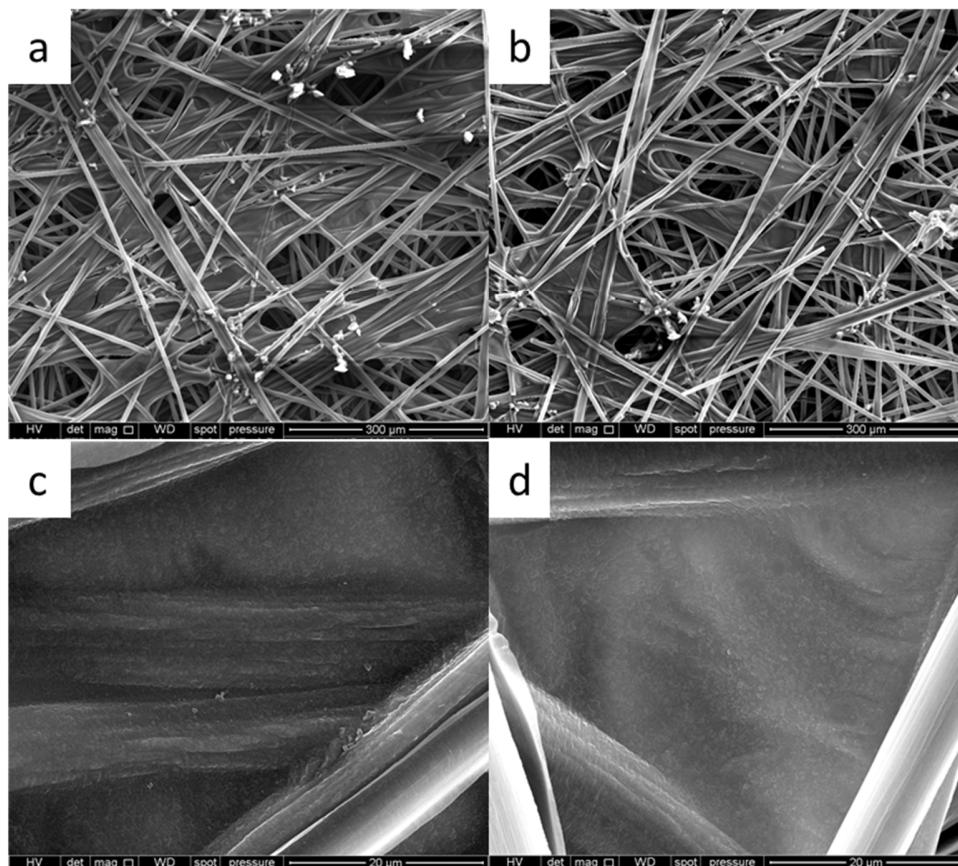


Figure S4. SEM analysis of post-catalysis hybrid electrodes a,c) TCP-Al-GO-NiFe and b,d) TCP-G-GO-NiFe.

3-STEM-EDX analysis of TCP-G-GO-400-NiFe

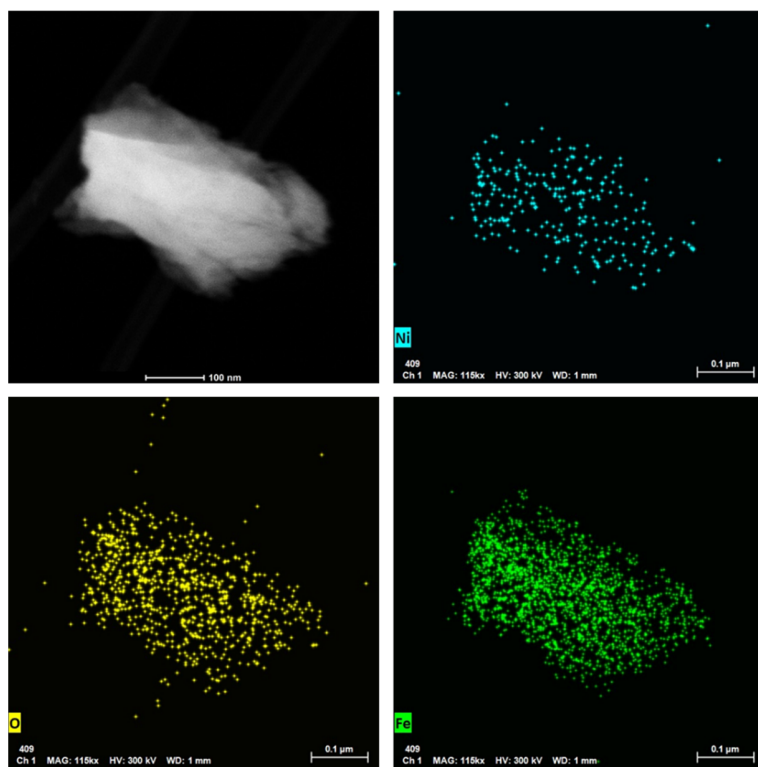


Figure S5. STEM-EDX images and mapping of TCP-G-GO-400-NiFe the homogeneous distributions of elemental Ni, Fe and O along the graphene surface.

4- Electrochemical measurements

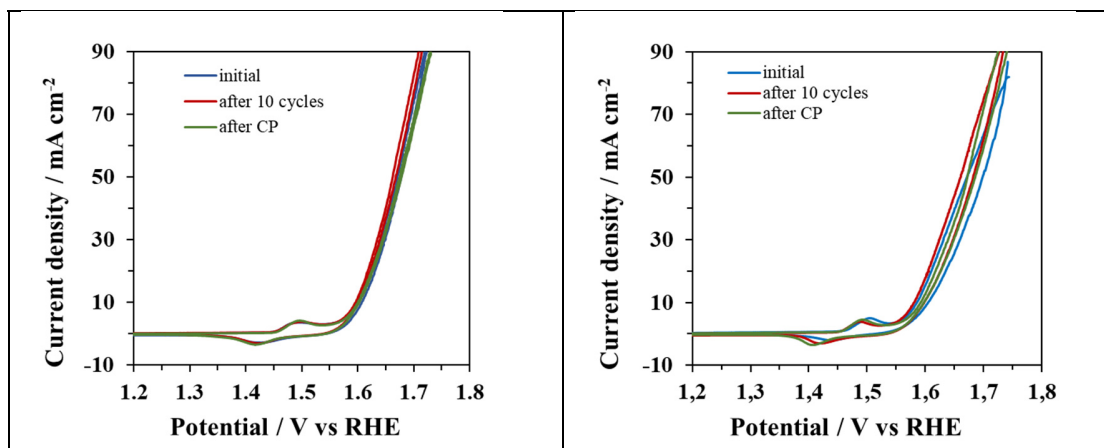


Figure S6. Potential cycling stability results for TCP-G-GO-NiFe (left) and TCP-Al-GO-NiFe (right). All the experiments were carried out at 20 mVs⁻¹ in KOH 1M.