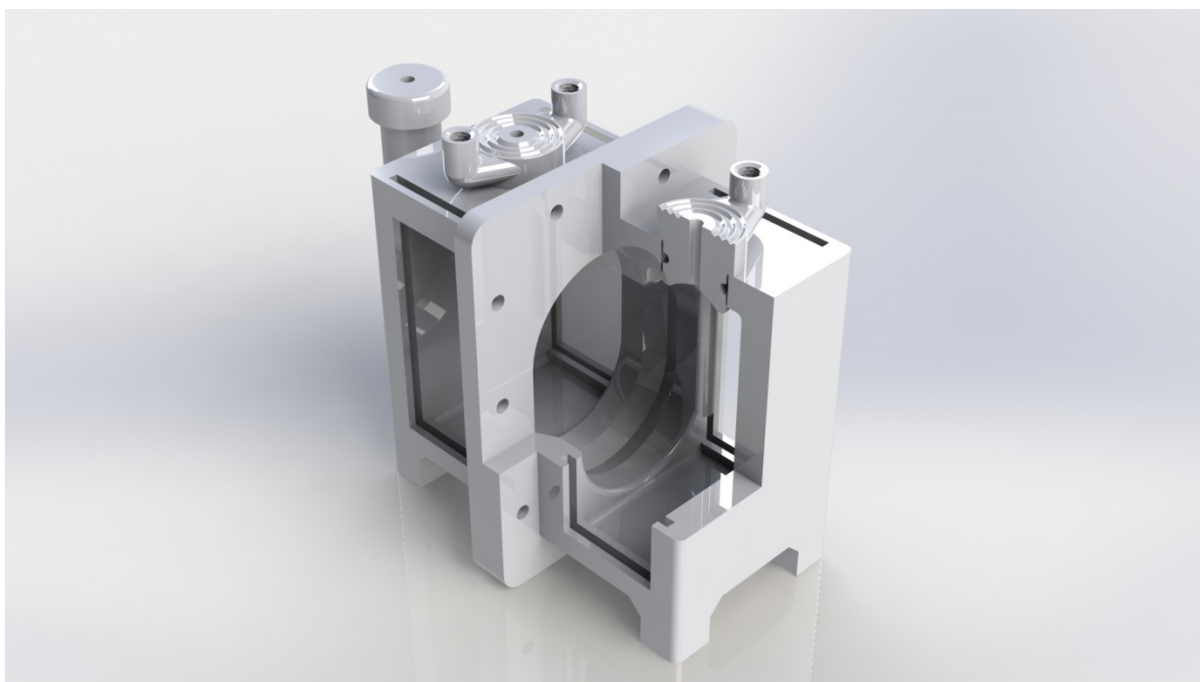


SUPPLEMENTARY MATERIAL

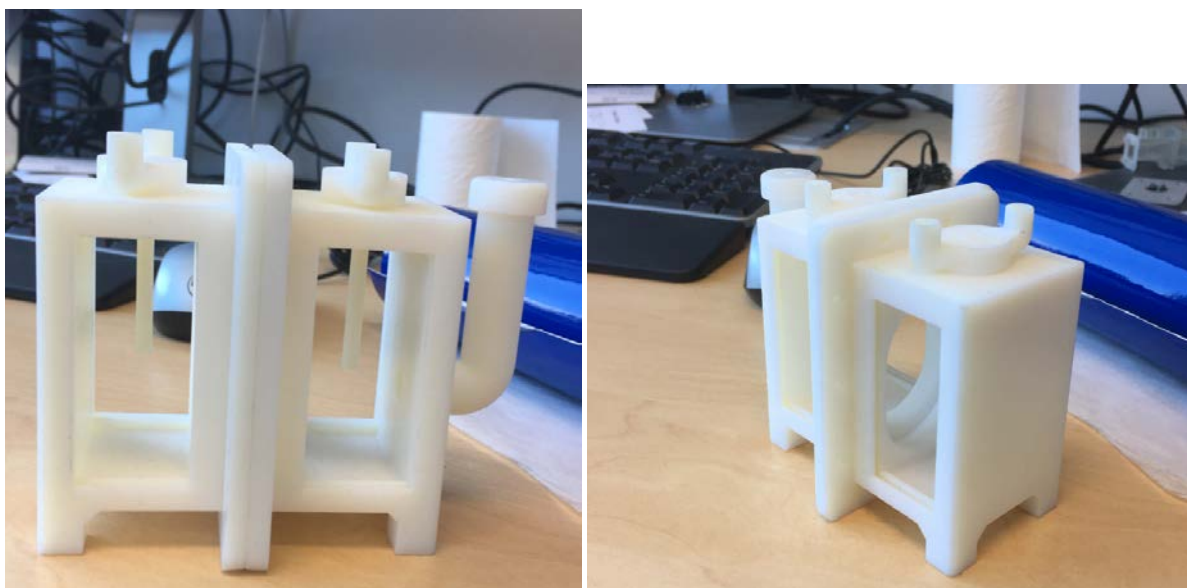
Synergistic Amplification of Catalytic Hydrogen Generation by a Thin-Film Conducting Polymer Composite

Mohammed Alsultan, Jaecheol Choi, Rouhollah Jalili, Pawel Wagner and Gerhard F. Swiegers*

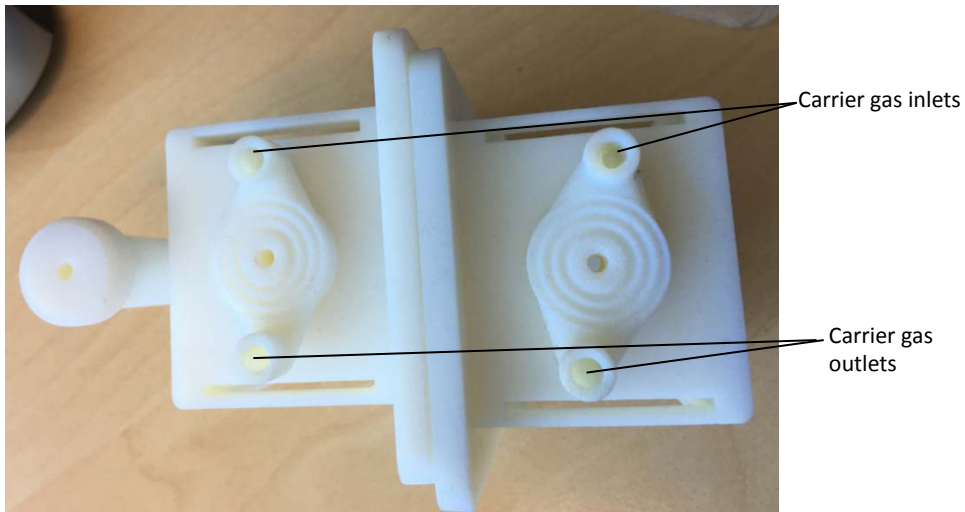
FIGURE S1: Images of the sealed cell used in the gas analysis studies



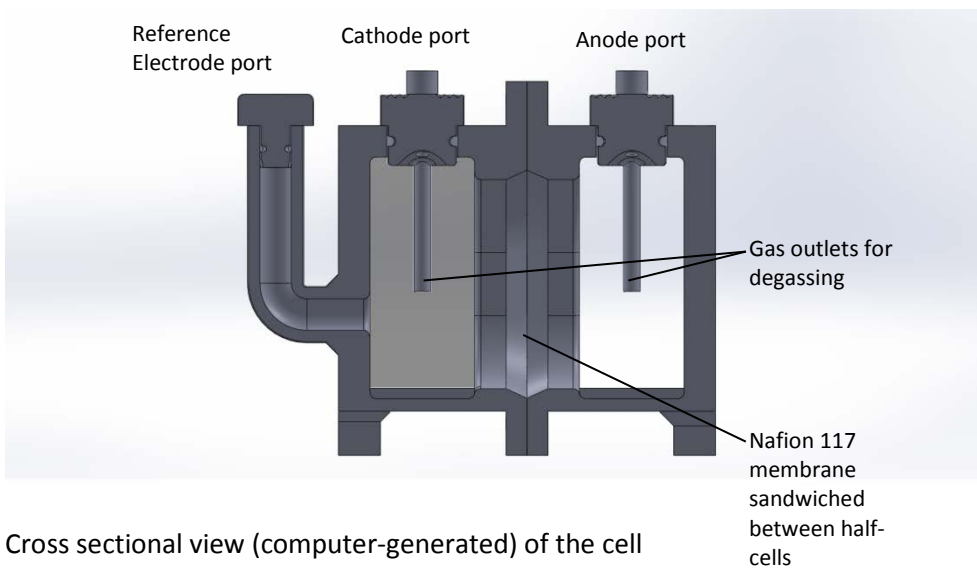
Partially cut-away view (computer-generated) showing the two half-cells



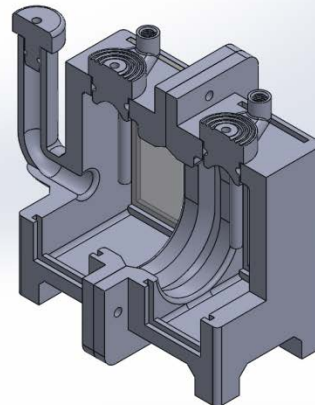
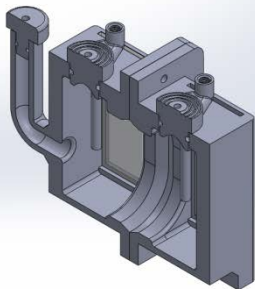
Photographs of the cell prior to being fitted with quartz windows



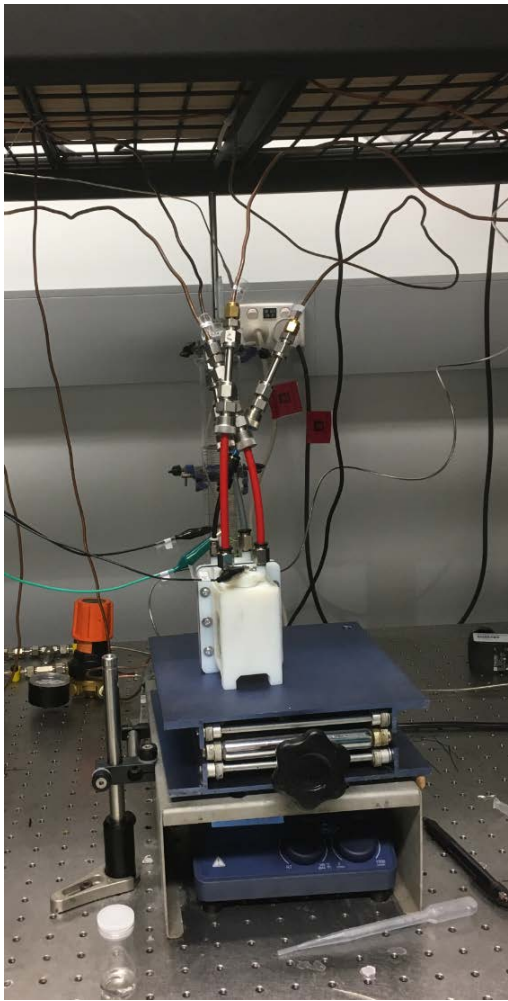
Photographs of the top-view of the cell prior to being fitted with quartz windows



Cross sectional view (computer-generated) of the cell



Cutaway, cross-sectional view (computer generated) of the cell



Cell in operation

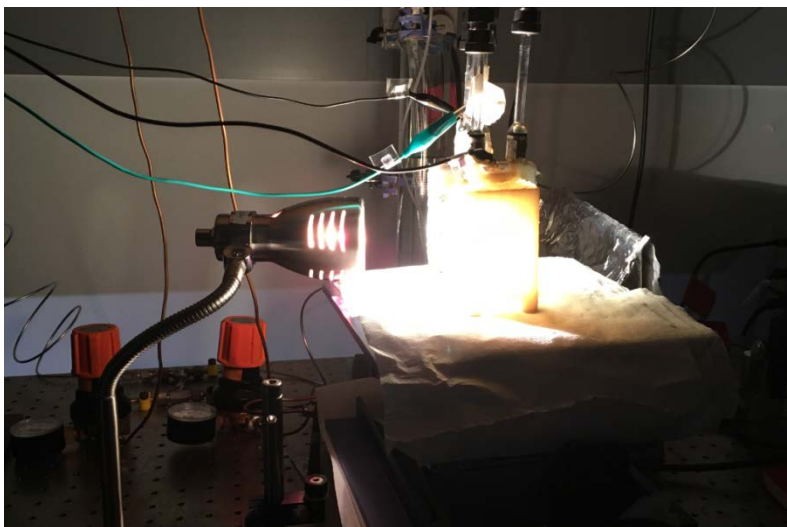


FIGURE S2: Pourbaix diagram for Ni

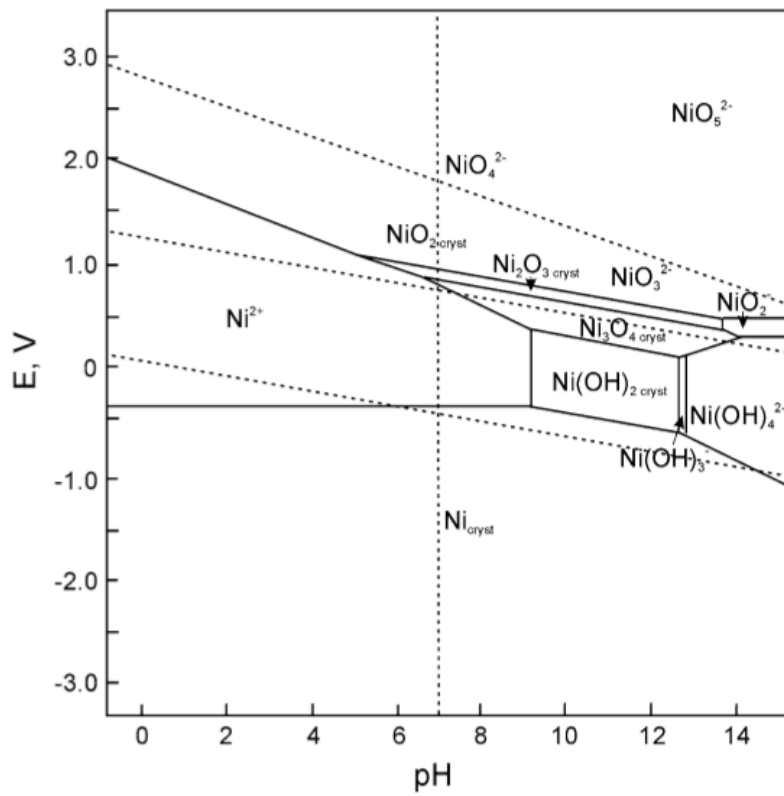
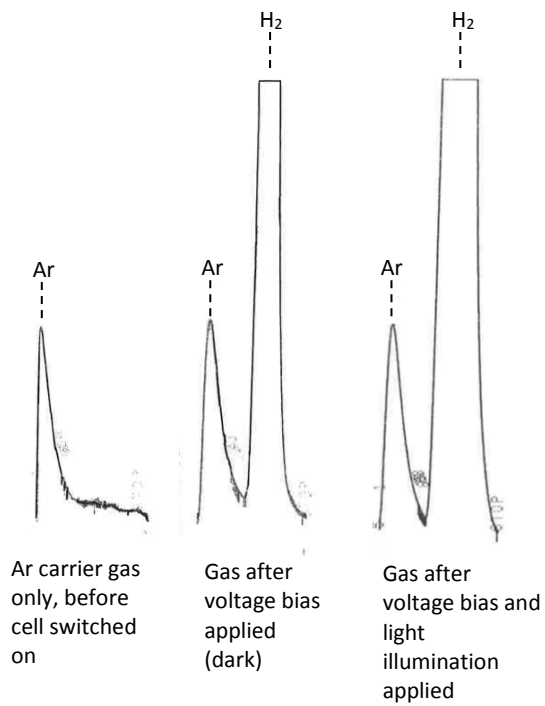


FIGURE S3: Gas chromatography trace of the gas collected



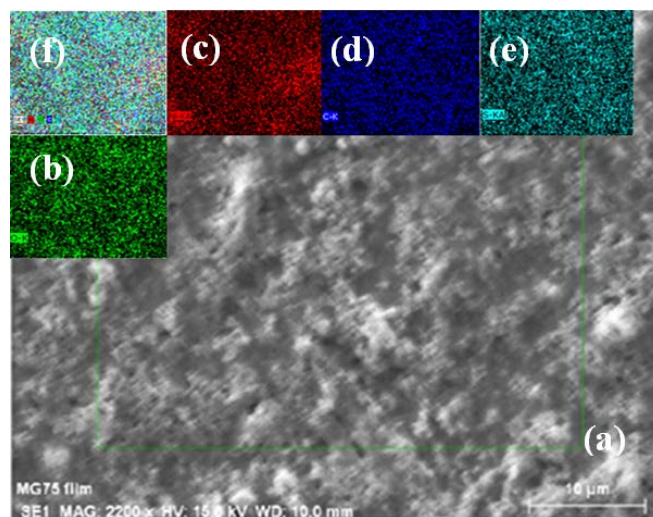


FIGURE S4: Scanning electron microscope (SEM) image of the most active PEDOT/Nano-Ni/rGO after preparation and prior to catalytic reaction. The inset images show the elemental distributions, using EDX, of: (b) O, (c) Ni, (d) C, (e) S, and (f) O, Ni, C, S together.

FIGURE S5: Visible absorbance of GO and rGO after being reduced electrochemically via cyclic voltammetry in range 0.8 to 1.2 V vs Ag/AgCl in Na₂SO₄; scan rate 50 V/s (8 cycles). Inset: the GO film before (left) and after (right) reduction

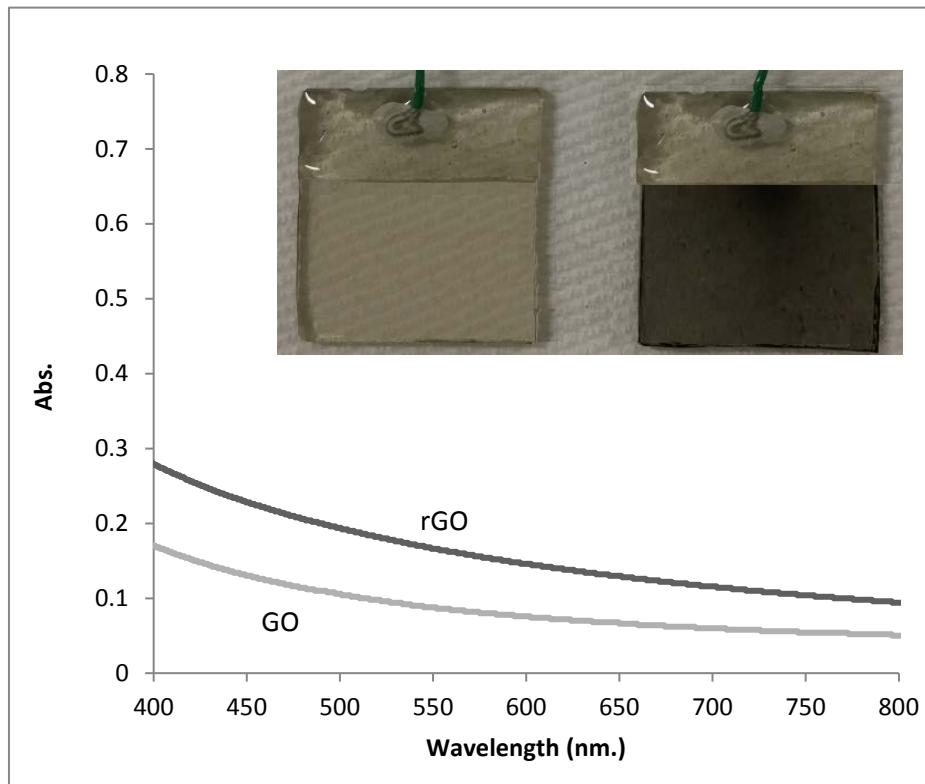


FIGURE S6: Visible absorbance of (i) PEDOT; (ii) rGO; (iii) (PEDOT/rGO); (iv) PEDOT/nano-Ni/rGO

