Supplementary Materials

Nitrogen-Doped Flower-Like Hybrid Structure Based on Three-Dimensional Graphene

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Schematic of the Stage-Wise Growth of the Hybrid Structure

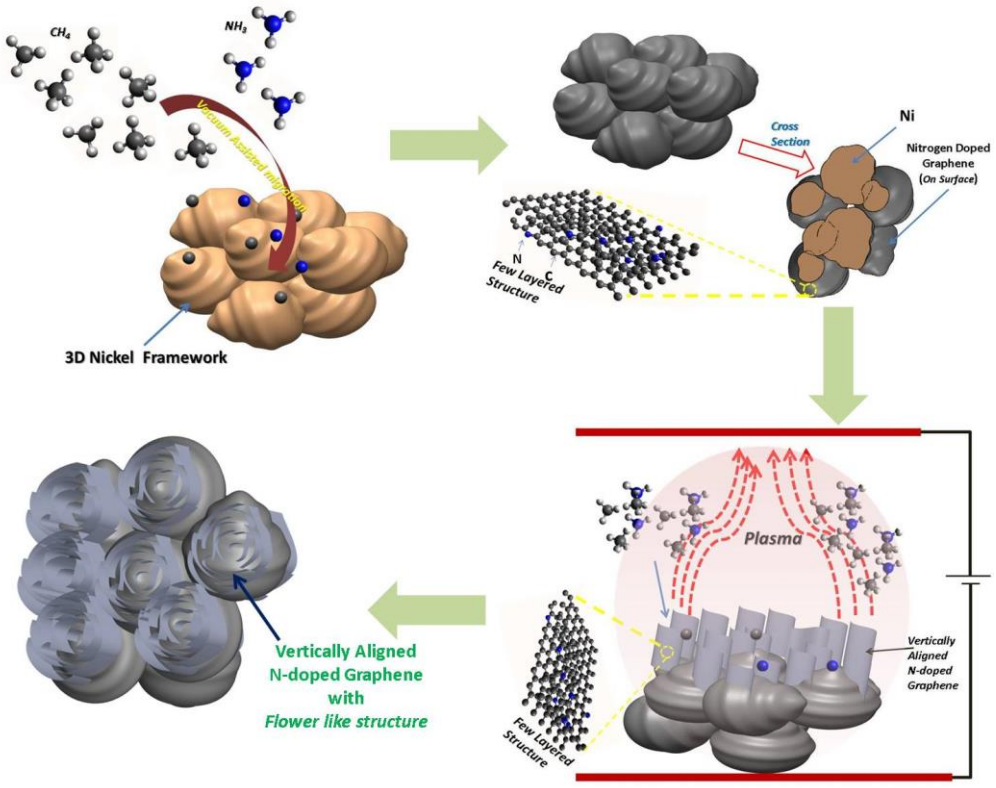

Figure S1: Schematic of the stage-wise growth of graphene flower-like hybrid structure

Specific Surface Area Determination by BET Method

The specific surface area of hybrid flower-like structure H2 (N-GF on N-3DG) was determined by BET method.

Figure S2 shows the Adsorption-Desorption isotherm of the sample H2.

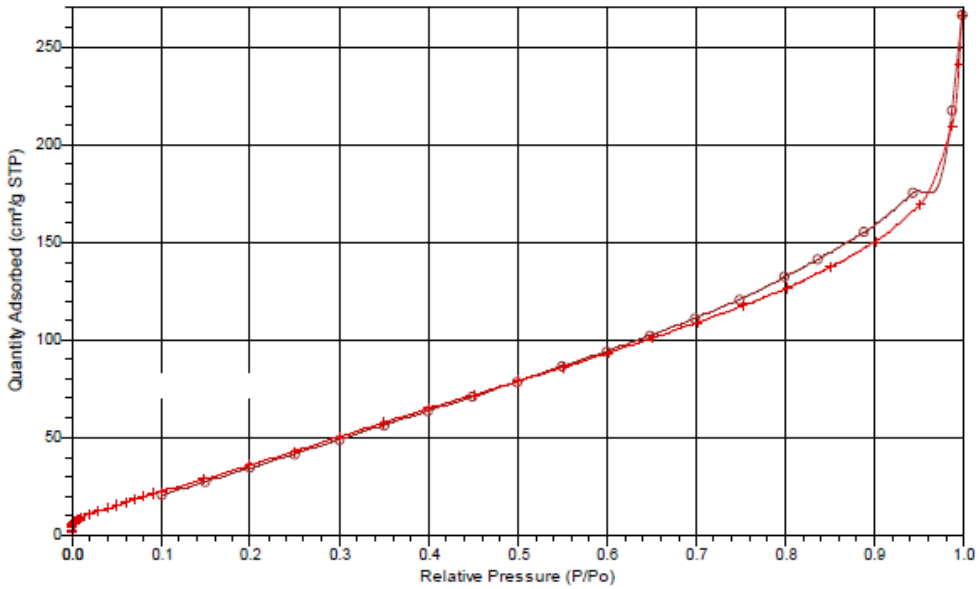

Figure S2: Nitrogen Adsorption-Desorption Isotherm for sample H2

Figure S3 shows the BET plot

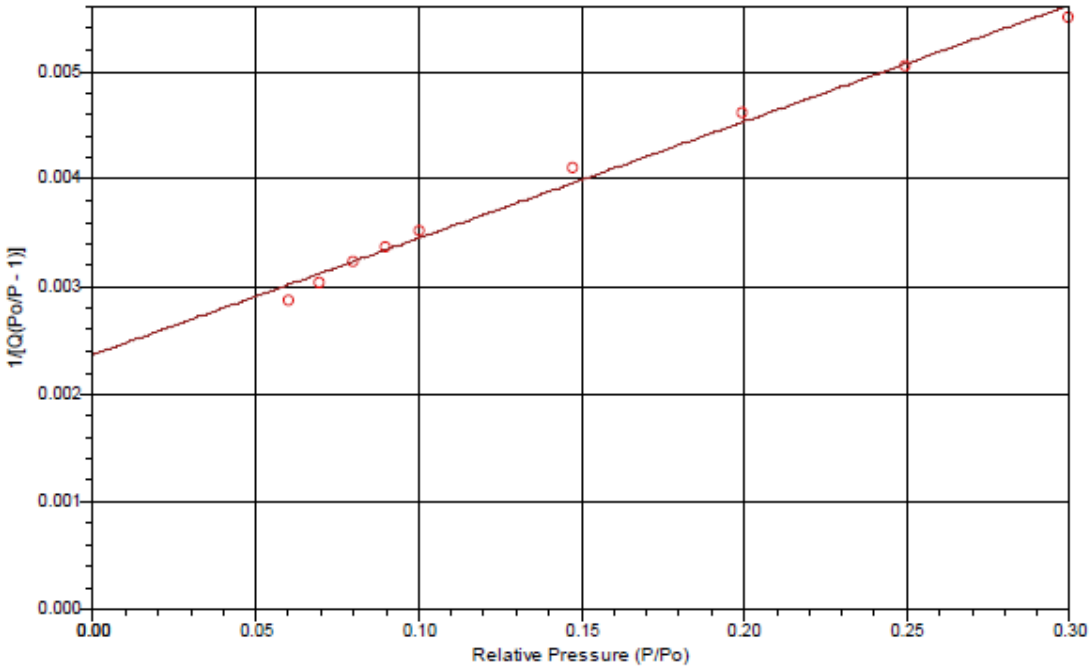

Figure S3: BET Plot of sample H2

Figure S4 shows the pore size distribution

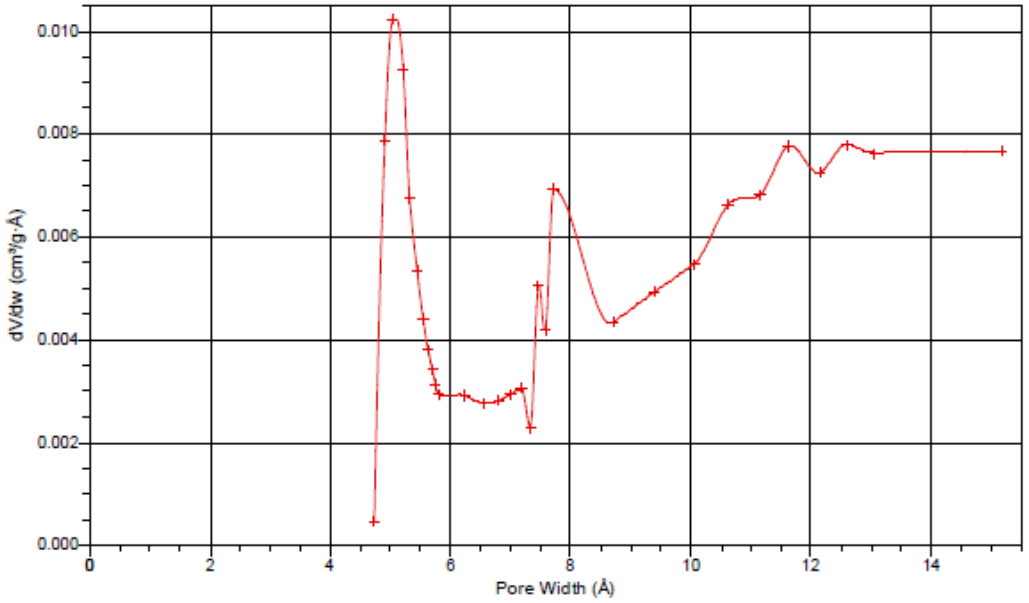

Figure S4:Pore size distribution (H-K) of sample H2

The specific surface area is 330 m^2/g

Optical Emission Spectra (OES) for Plasma

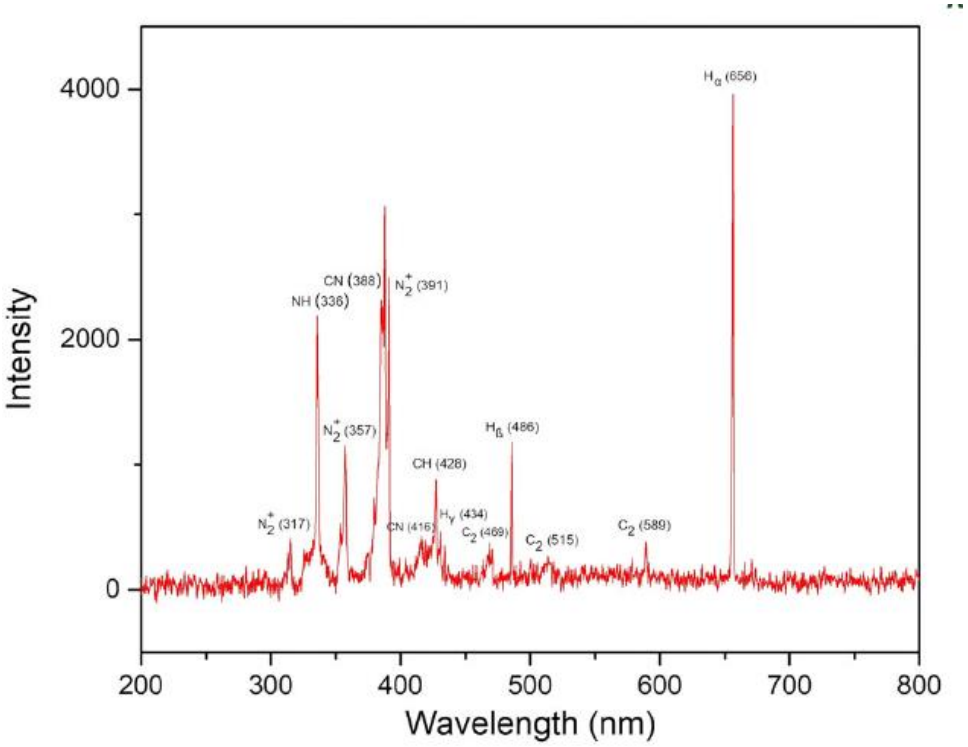

Figure S5: Optical emission spectra of NH3-C2H2 plasma during synthesis of sample H2

Wide scan XPS spectra

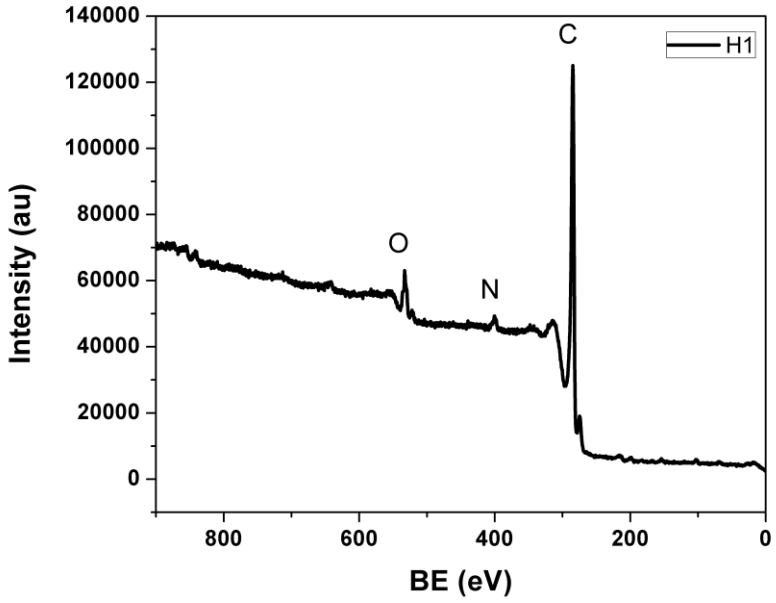

Figure S6: Wide scan spectra of sample H1 showing C, N and O peaks

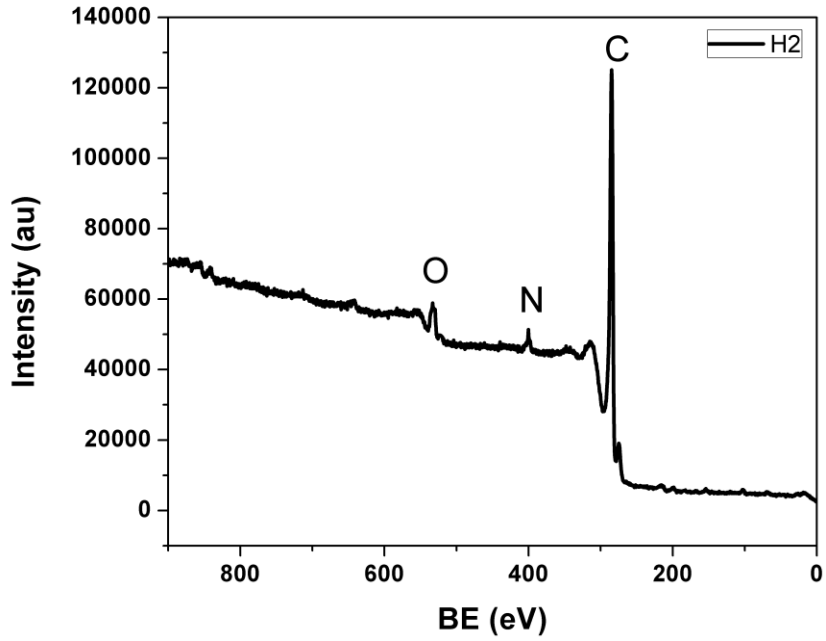

Figure S7: Wide scan spectra of sample H2 showing C, N and O peaks

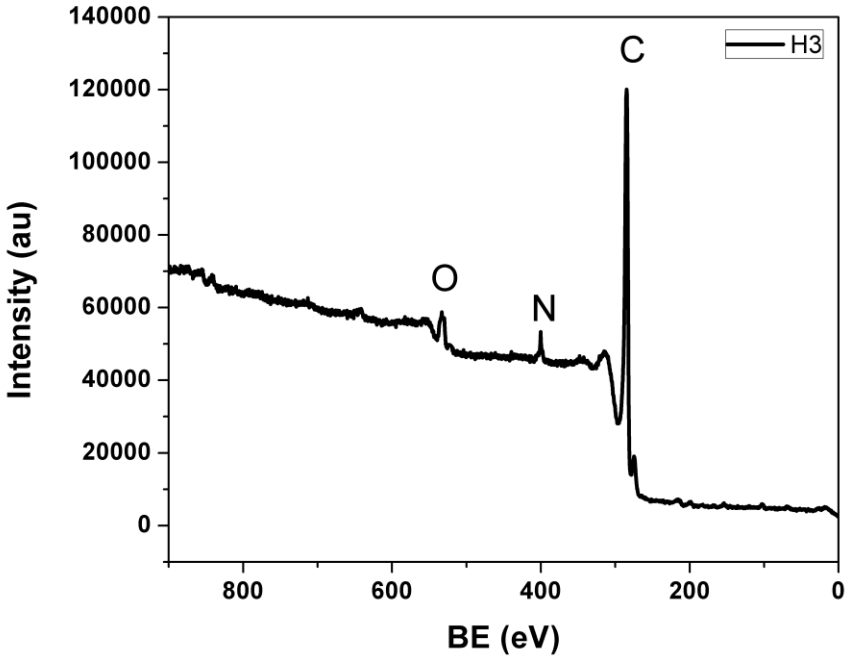

Figure S8: Wide scan spectra of sample H3 showing C, N and O peaks

Typical CV curve of PANI loaded H2

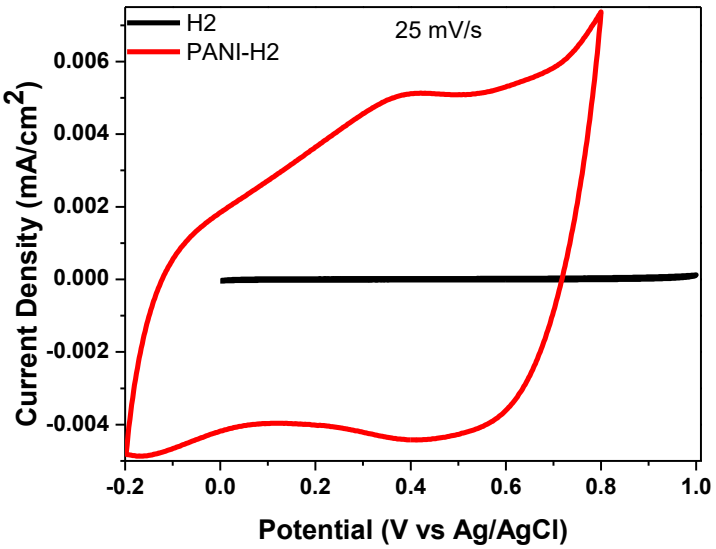

Figure S9: Significant improvement in electrochemical property with PANI incorporation in sample H2