

Electronic Supplementary Material (ESI) for Sustainable Energy & Fuels.

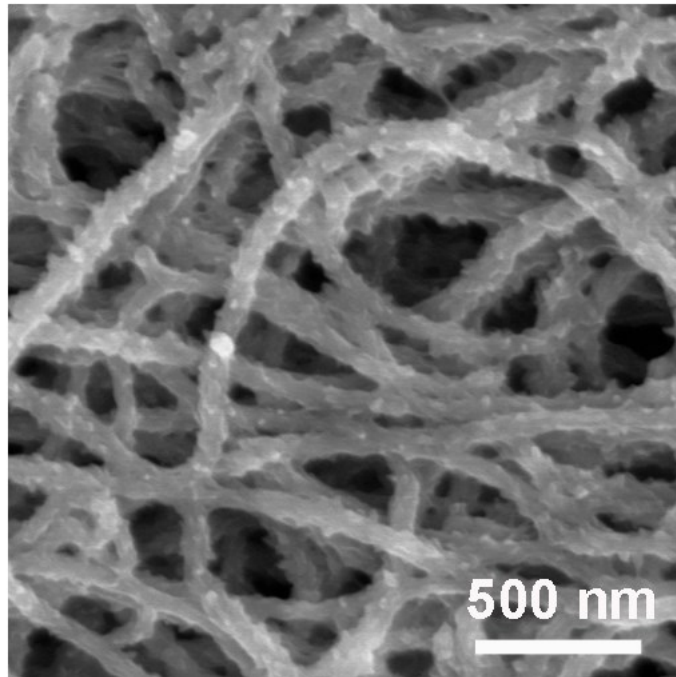
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## Supporting information

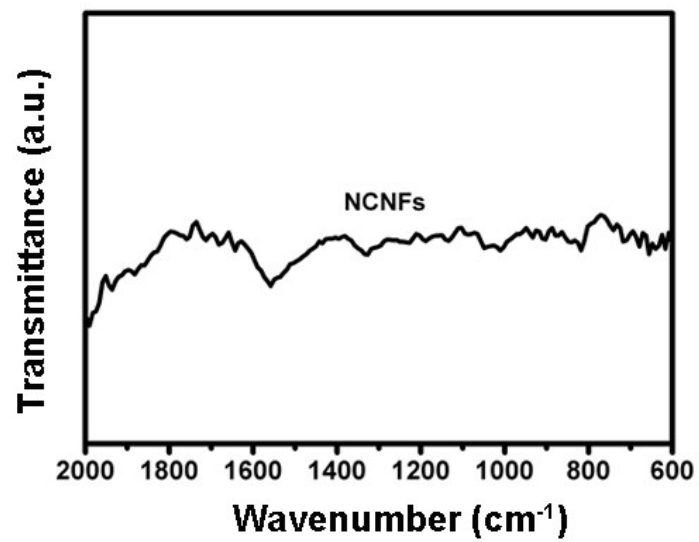
**When amine-based conducting polymers meet Au nanoparticles: Suppressing H<sub>2</sub> evolution and promoting the selective electroreduction of CO<sub>2</sub> to CO at low overpotentials**

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**Figure S1.** FE-SEM images of the PANI derived NCNFs.



**Figure S2.** FTIR spectrum of the PANI derived NCNFs.

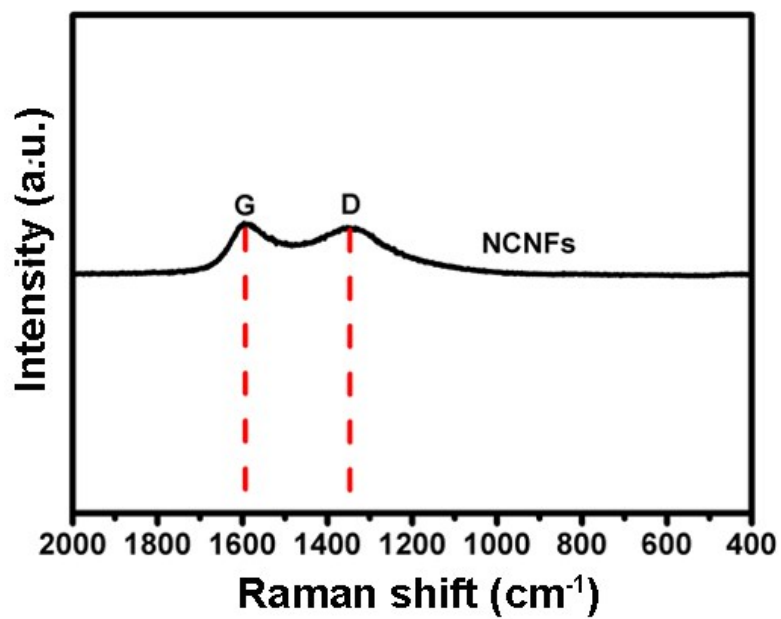


Figure S3. Raman spectrum of the PANI derived NCNFs before the CO<sub>2</sub>RR.

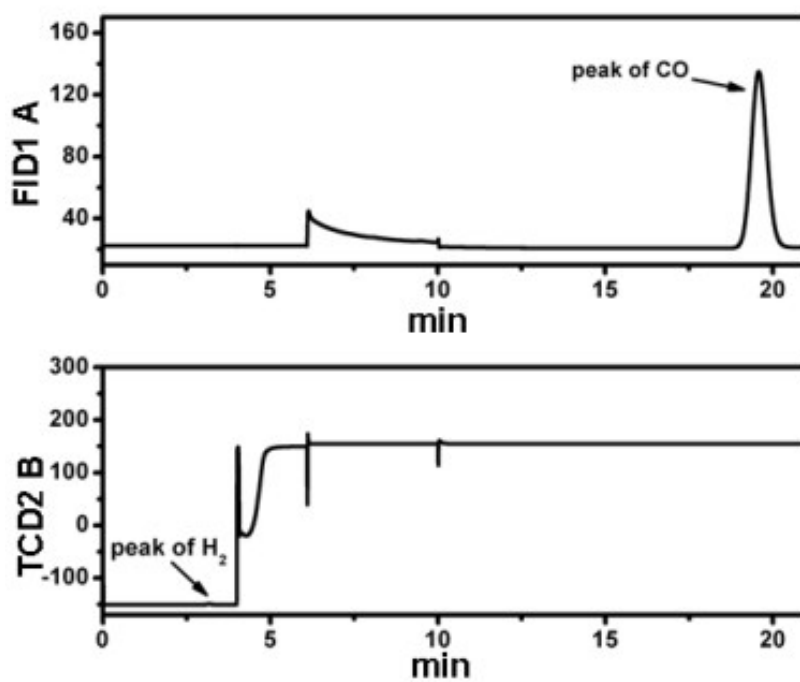


Figure S4. Reduction product tested by gas chromatography.

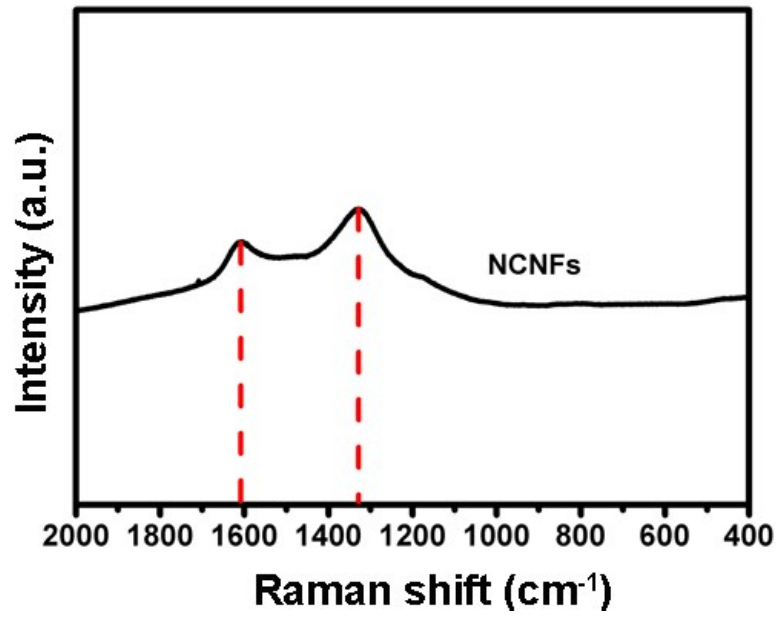


Figure S5. Raman spectrum of the NCNFs after the CO<sub>2</sub>RR.