ELECTRONIC SUPPORTING INFORMATION

High performance direct borohydride fuel cell using bipolar interfaces and noble metal-free Ni-based anodes

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SI 1. EDS spectra of Nickel Felt (NFT) at its initial state

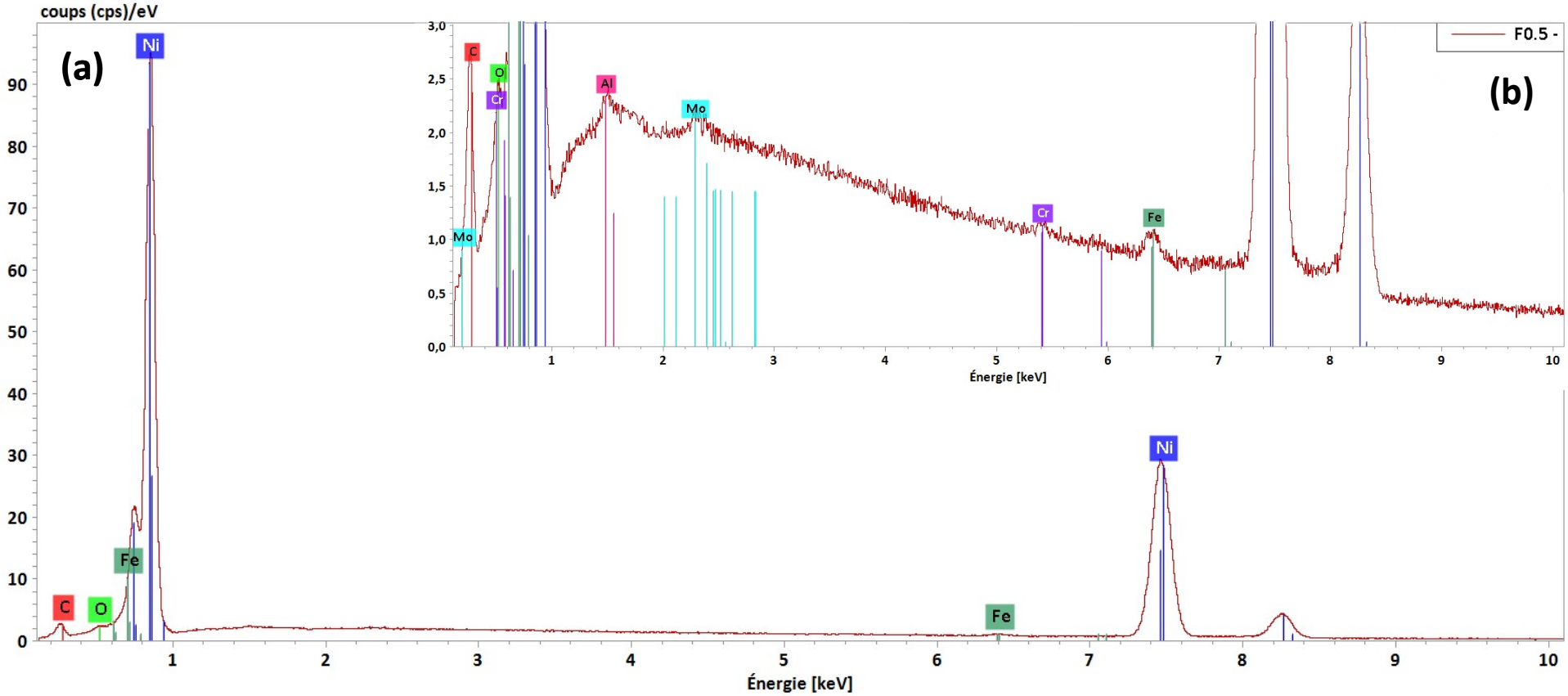

Figure SI 1. (a) EDS spectrum of nickel felt (0.5) obtained using EDAX® OCTANE ELITE 25 EDS sensor in a Zeiss® Gemini SEM-500 operated at 15 kV. Small peaks can be detected and are shown in more details on the inset (b): traces of iron, molybdenum and chromium are detected on the material. The aluminium peak is attributed to the SEM support.

SI 2. XRD pattern of Nickel Felt (NFT) at its initial state

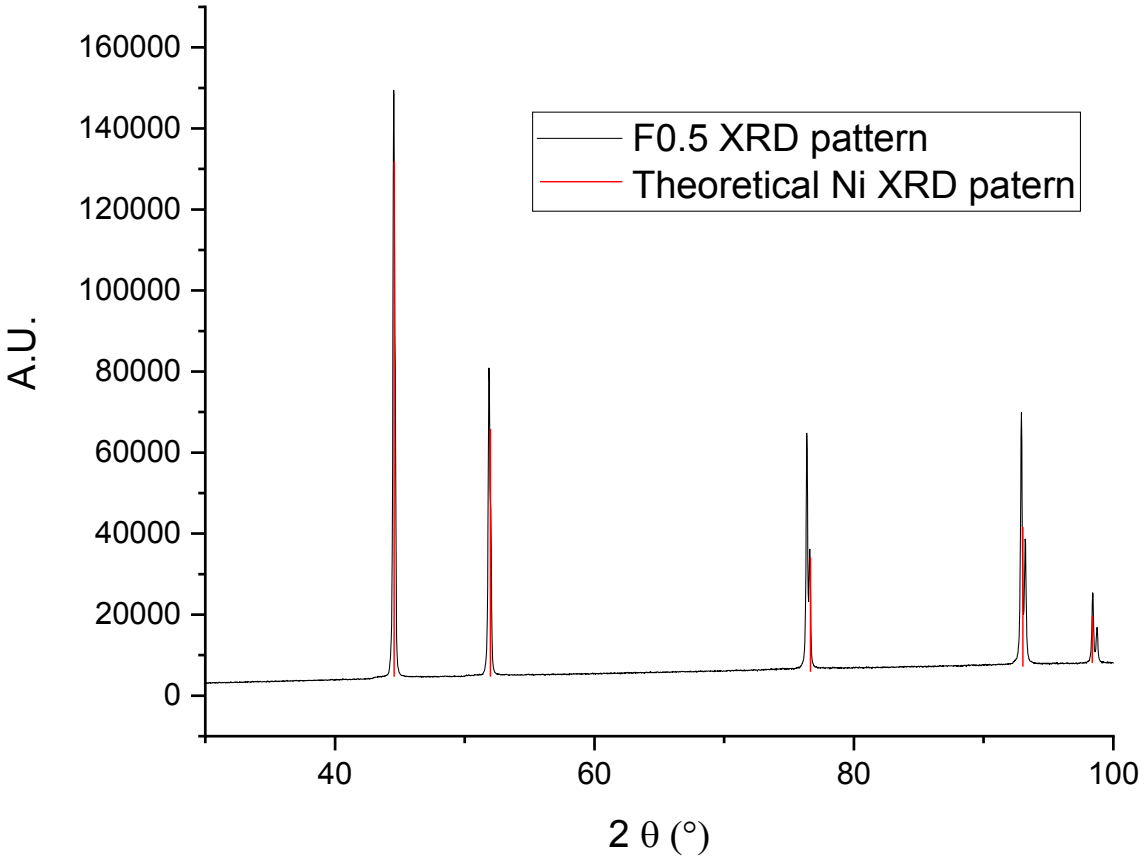

Figure SI 2. XRD pattern of the nickel felt (F0.5), obtained with a Bruker® D8 ADVANCE Diffractometer, compared to the theoretical pattern of Ni (cubic Fm-3m (225)) (red lines).

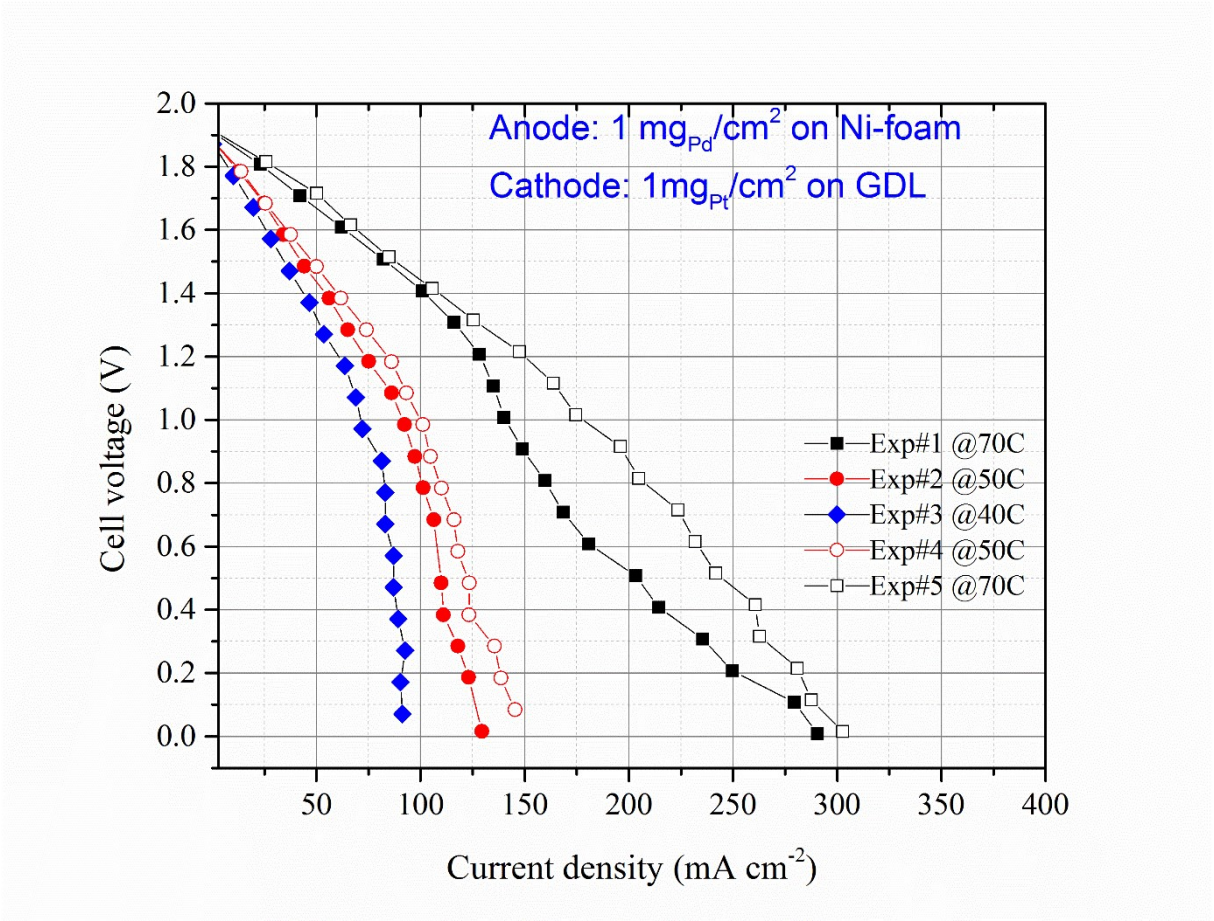

Figure SI 3. Polarization curves in DBFC conditions obtained at various cell temperatures for an anode comprising a 1 mg cm^{-2} Pd/C catalyst immobilized at a Ni foam current collector and a cathode comprising 1 mg cm^{-2} Pt/C catalyst immobilized at a carbon-based GDL. Anolyte: 3 M KOH + 1.5 M $NaBH_4$, catholyte: 1.5 M H_2SO_4 + 15 wt.% H_2O_2, flow rate: 0.4 mL.min^{-1}.cm^{-2}.

REFERENCES

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