## Supporting information

# NiMo sputter-deposition on tape-casted NiFe foam for anion exchange membrane water electrolysis

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**List**

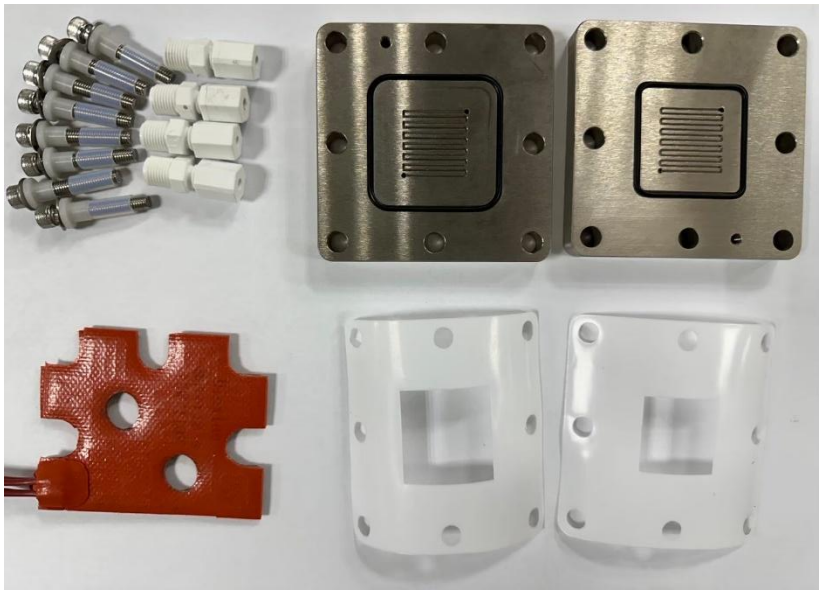

**Figure S1.** Photographs of individual components of the AEM cell

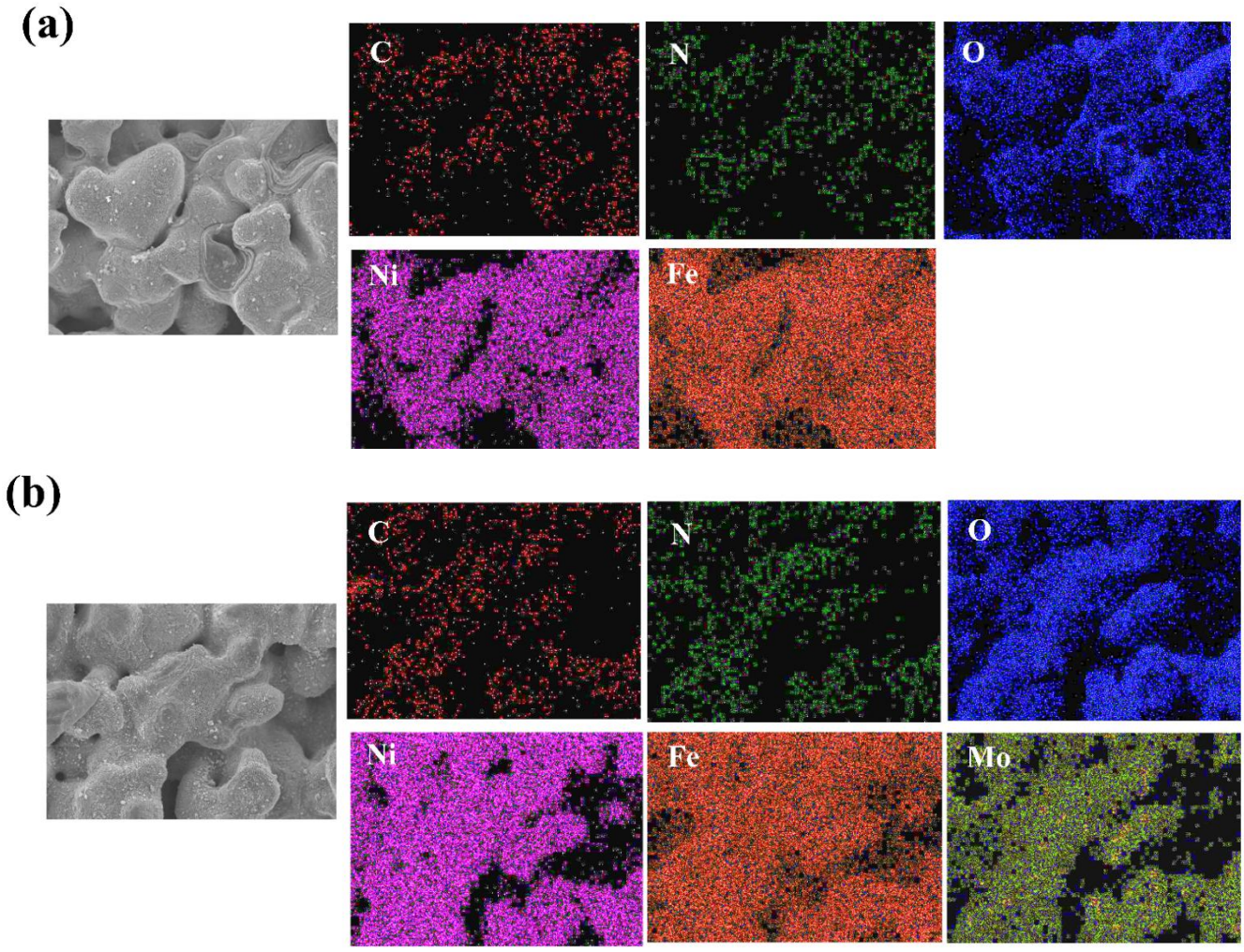


**Figure S2.** EDS mapping results: (a) NiFe foam and (b) NiMo@NiFe foam

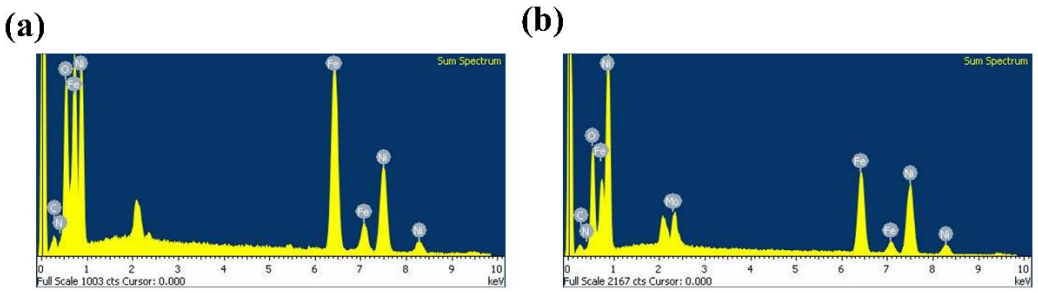


**Figure S3.** EDS elemental analysis: (a) NiFe foam and (b) NiMo@NiFe foam

**Table S1.** Proportional distribution of Ni 2p oxidation states

| Element | $Ni^0$ | $Ni^{2+}$ | $Ni^{3+}$ | $Ni^{3+}/Ni^{2+}$ |
|---|---|---|---|---|
| NiFe foam | 0.68% | 73.31% | 25.99% | 0.35 |
| NiMo@NiFe foam | 4.02% | 75.23% | 20.74% | 0.27 |

**Table S2.** Proportional distribution of Fe 2p oxidation states

| Element | $Fe^{2+}$ | $Fe^{3+}$ | $Fe^{3+}/Fe^{2+}$ |
|---|---|---|---|
| NiFe foam | 70.60% | 29.39% | 0.42 |
| NiMo@NiFe foam | N/A | N/A | N/A |

**Table S3.** Proportional distribution of Mo 3d oxidation states

| Element | $Mo^{0}$ | $Mo^{4+}$ | $Mo^{5+}$ | $Mo^{6+}$ |
|---|---|---|---|---|
| NiFe foam | N/A | N/A | N/A | N/A |
| NiMo@NiFe foam | 1.81% | 26.66% | 51.18% | 20.36% |

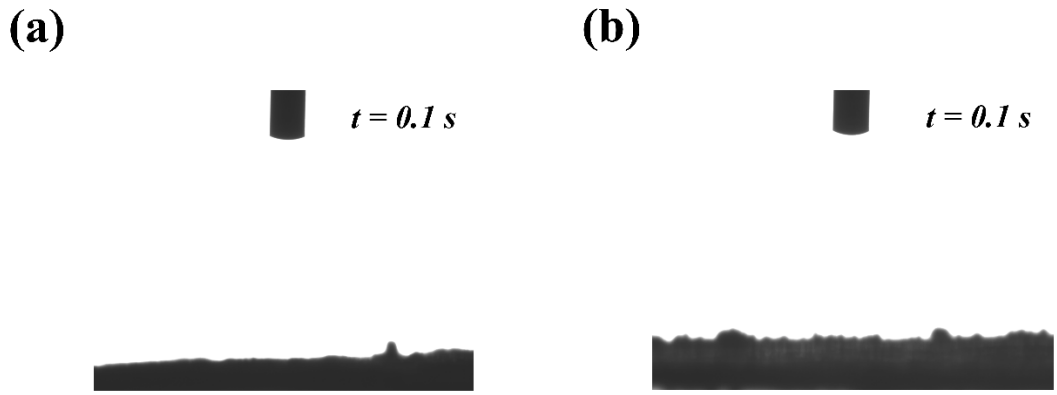


**Figure S4.** Water contact angle measurements: (a) NiFe foam and (b) NiMo@NiFe foam

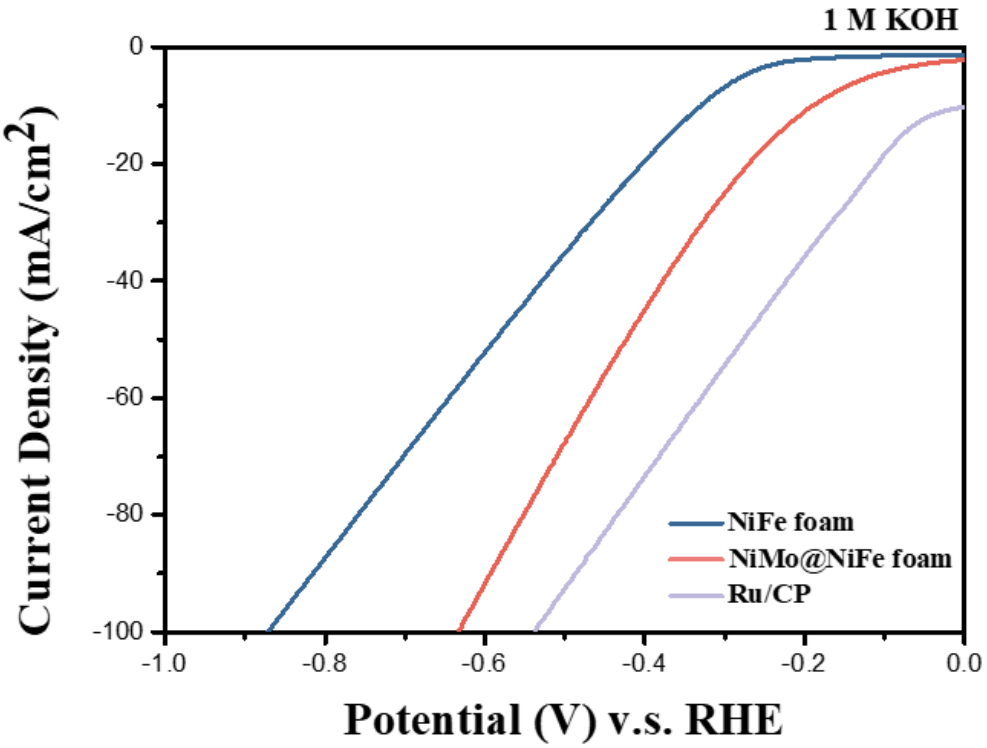


**Figure S5.** LSV polarization curves for HER without iR-compensation

**Table S4.** HER overpotentials without iR-compensation

| Overpotential (mV) | @ 10 mA/cm$^2$ | @ 50 mA/cm$^2$ | @ 100 mA/cm$^2$ |
|---|---|---|---|
| NiFe foam | 330.1 | 588.9 | 872.7 |
| NiMo@NiFe foam | 189.1 | 442.9 | 663.2 |
| Ru/CP | 29.8 | 276.4 | 540.7 |

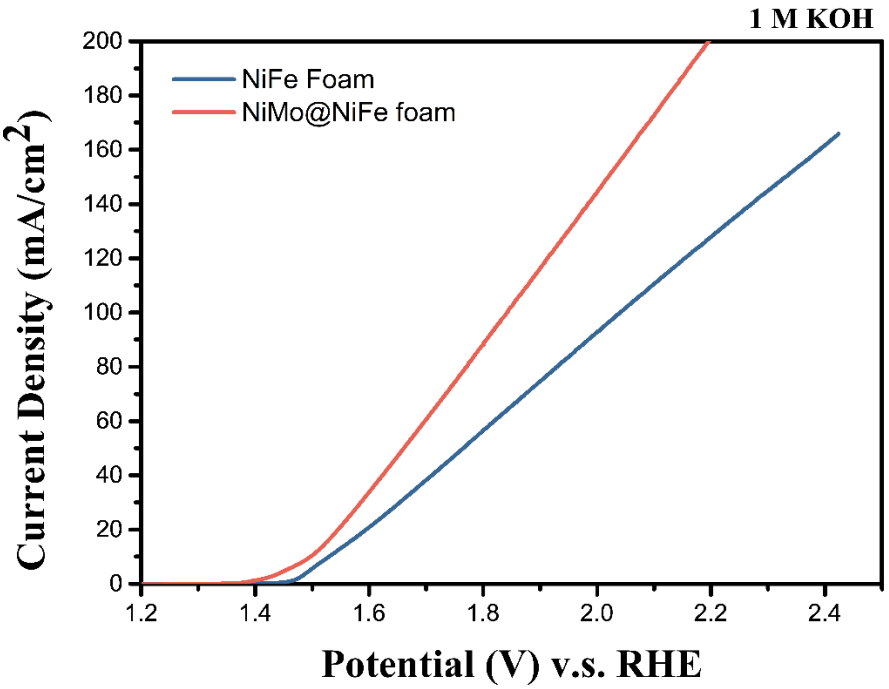


**Figure S6.** LSV polarization curves for OER without iR-compensation

**Table S5.** OER overpotentials without iR-compensation

| Overpotential (mV) | @ 10 mA/cm$^2$ | @ 50 mA/cm$^2$ | @ 100 mA/cm$^2$ |
|---|---|---|---|
| NiFe foam | 298.7 | 535.7 | 810.7 |
| NiMo@NiFe foam | 267.3 | 430.8 | 610.8 |

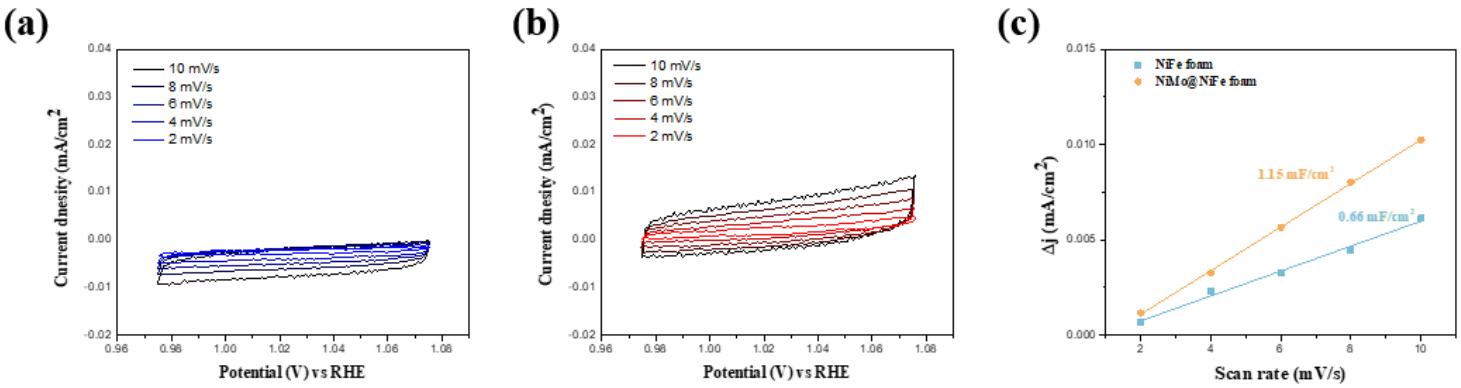


**Figure S7.** CV curves of (a) NiFe foam and (b) NiMo@NiFe foam, and (c) $2C_{dl}$ analysis.