CORRECTION

Correction: Alkoxide-intercalated NiFe-layered double hydroxides magnetic nanosheets as efficient water oxidation electrocatalysts

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Correction for 'Alkoxide-intercalated NiFe-layered double hydroxides magnetic nanosheets as efficient water oxidation electrocatalysts' by Jose A. Carrasco, *et al.*, *Inorg. Chem. Front.*, 2016, DOI: 10.1039/c6qi00009f.

The authors regret that the caption for Fig. 7 was provided incorrectly. The correct version of Fig. 7 and the associated caption are provided below.
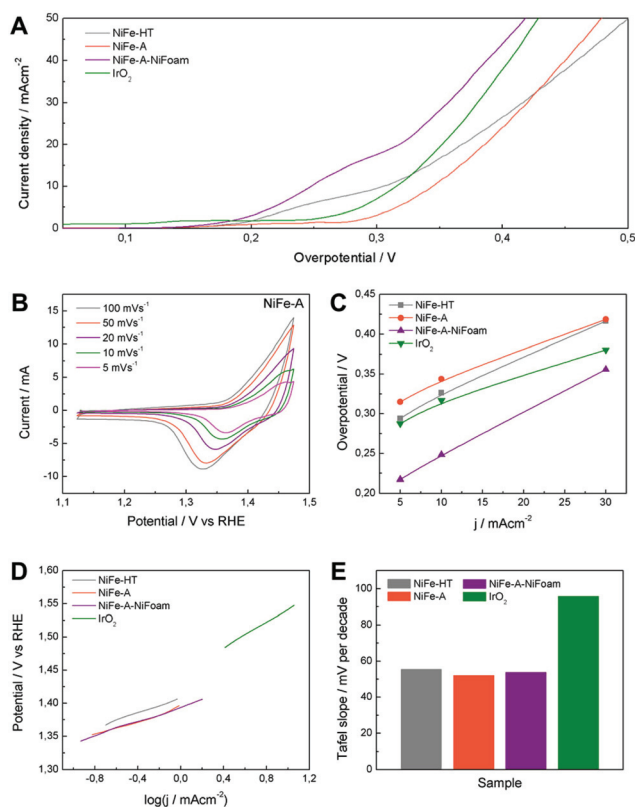
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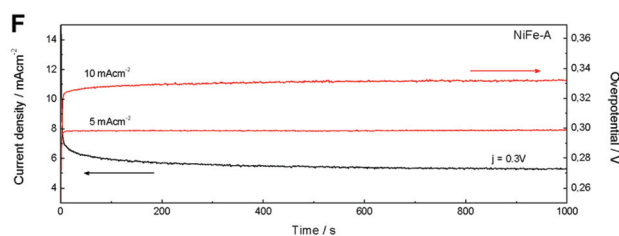
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Fig. 7 (A) Polarization curves of NiFe-LDHs and commercial IrO_2. (B) Cyclic voltammetry at different scan rates of NiFe-A in 1 M KOH solution. (C) Overpotential required at different current densities. (D) Tafel plots and (E) the histogram of corresponding values of Tafel slopes. (F) The potentiostatic and galvanostatic stability testing under a certain potential or current density.

In addition, the authors regret that any citations to Fig. 7 within the article text are incorrect. Correct versions of the affected text are provided below.

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For NiFe-A the best fit of our data to a linear form of the eqn (3) (Fig. 6F) was obtained for T_g = 3.8 K, τ_0 = 1.99 × 10^{-9} s and a $z\nu$ = 13.7.

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The cyclic voltammetry at different scan rates of NiFe-A (Fig. 7B) reveals the presence of a redox peak around 1.35 V *vs.* RHE, that can be assigned to the Ni(II)/Ni(III or IV) redox processes, probably related with the transformation between $Ni_{1-x}Fe_x(OH)_2$ and $Ni_{1-x}Fe_xOOH$ (see ESI 7† for additional CVs of the other samples).[14,33,58] Moreover, the anodic wave of the NiFe-A catalyst is nearly merged with the catalytic wave but a distinct cathodic feature is evident, in excellent accordance with previous reports (see ESI 7† for pristine Ni-foam blank experiments and additional CVs of the other sample).[58,59]

The catalytic materials were measured by linear sweep voltammetry, showing the lowest onset potential for the NiFe-A-NiFoam (1.51 V *vs.* RHE), followed by the NiFe-HT and the pristine NiFe-A (Fig. 7A and ESI 7†). Different parameters were calculated to quantify the improvements of activity: the overpotential (η) at different current densities (5, 10 and 30 mA cm^{-2}), the current density (j) at η = 300 mV and the Tafel slopes (the performance of the different samples have been summarized in ESI 8†). The current density of 10 mA cm^{-2} was chosen because it represents the current density from a device with 12% solar to hydrogen efficiency, considered as a realistic measure of the catalytic activity.[15]

As presented in Fig. 7C, an overpotential of *ca.* 0.249 V is required at j = 10 mA cm^{-2} for NiFe-A-NiFoam, a value much smaller than that of NiFe-HT (more than 0.32 V) or NiFe-A (0.34 V) and similar to that previously published by Lu and co-workers.[33] In Fig. 7C it can be seen that the overpotential is decreased by 60–80 mV by growing the LDH directly on the Ni-foam. The excellent catalytic activity of the as-synthesized NiFe-LDHs is also reflected in the Tafel slopes, showing values in the range of 52–55 mV per decade, much smaller than that exhibited by the commercial IrO_2 (we should indicate that the Tafel slopes not solely reflect the kinetic information of water oxidation but a combined process of redox reactions and OER).

To further evaluate their electrocatalytic activity, the values of the turnover frequency (TOF) of the powdered samples were calculated by assuming that all the transition metal ions in the catalysts are contributing to the reaction, which also confirm that NiFe-A has the highest TOF of 0.01 s^{-1} at an overpotential of 0.3 V, nearly of NiFe-HT (0.007). It is worth to keep in mind that these TOF values compete favourably with those recently reported for others NiFe-LDHs.[26,33]

The stability and durability of the NiFe-A powdered catalyst was tested at constant current densities j of 5 and 10 mA cm^{-2} and with a constant overpotential of η 300 mV for 1000 s. In Fig. 7F, we can see a very high stability in both cases. When increasing the current density from 5 to 10 mA cm^{-2} the overpotential correspondingly increases to *ca.* 0.03 V (see ESI 7† for additional measurements).

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

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