Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting Information

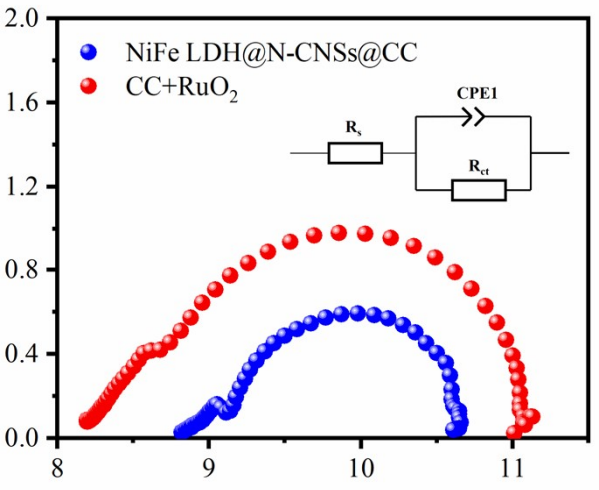

Figure S1. EIS Nyquist plots of NiFe LDH@N-CNSs@CC and Pt/C electrodes at a constant voltage of 1.6V vs RHE.

Figure S1 shows the EIS Nyquist plots of different electrodes under the same test environment, and the equivalent circuit to simulate the electrochemical system is shown in the inset figure. Especially, the R_s represents the solution resistance and R_{ct} means interfacial charge-transfer resistance. As can be seen from the figure, although the solution resistance R_s of NiFe LDH@N-CNSs@CC electrode (8.9 Ω) is bigger than that of RuO_2 electrode (8.3 Ω), the interface transfer resistance R_{ct} of NiFe LDH@N-CNSs@CC (1.8 Ω) is smaller than that of RuO_2 (2.9 Ω).

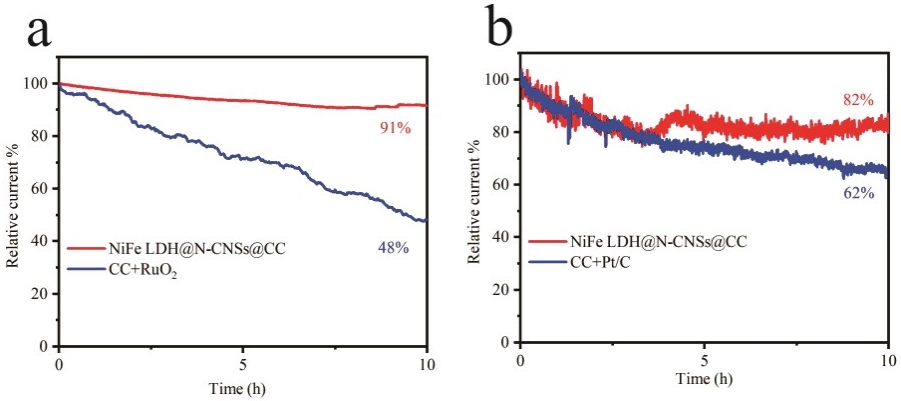

Figure S2. OER (a) and ORR (b) stabilities of NiFe LDH@N-CNSs@CC and commercial RuO_2 and Pt/C electrode measured at 1.6V vs RHE and 0.69V vs RHE.

Time-Current curves were measured to characterize the OER and ORR stability of NiFe LDH@N-CNSs@CC and commercial RuO_2 and Pt/C materials. Performing the i-t-ORR test requires a continuous flow of oxygen into the electrolyte, which is not required during the i-t-OER test. As can be seen, NiFe LDH@N-CNSs@CC showed only 9% decrease in OER current density after 10 h and 18% decrease in ORR current density after 10 h, indicating good electrochemical stability.