Supporting Information

Bimetallic IrNi Core Platinum Monolayer Shell Electrocatalysts for the Oxygen Reduction Reaction

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Figure S1  The *ex situ* XAS analysis for Pt and Ir L3 edge for the scaled-up Pt$_{ML}$/IrNi/C nanoparticles.
Figure S2 Voltammetry curves for the thin-film electrodes of the Pt$_{ML}$/IrNi/C nanoparticles and upd of Cu on them in 0.1M HClO$_4$ solution; scan rate 20mV/s.
Figure S3 Polarization curves for the ORR on the scaled-up Pt monolayer IrNi core electrocatalyst at various rpm in oxygen-saturated 0.1 M HClO$_4$. 
Figure S4 Levich-Koutecky plot for scaled-up Pt monolayer IrNi core electrocatalyst at various potentials.
Figure S5 Polarization curves for the ORR for scaled-up Pt\textsubscript{ML}/IrNi/C electrocatalysts at 1600 rpm in oxygen-saturated 0.1 M HClO\textsubscript{4} at room temperature before and after 50000 cycles; the scan rate was 10mVs\textsuperscript{-1}. The inset shows the corresponding cyclic voltammetry in argon-saturated 0.1 M HClO\textsubscript{4}; the scan rate was 20mVs\textsuperscript{-1}.