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Studies on the electrochemical intercalation/de-intercalation mechanism of NiMn₂O₄ for high stable pseudocapacitors electrodes

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Supporting Information:

Calculation for area occupation of hydrated Na⁺ ions on the surface of the electrode

area occupied hydrated ions (S) = $\frac{(CN\Delta V\sigma)}{F}m^2 g^{-1}$(2)

where *C* is the SC of the sample (F g⁻¹), *N* is Avogadro's number, ΔV is the potential window (V), σ is the cross sectional area of the hydration molecule (m²), and *F* is the Faraday constant.

 $= (202x6.023x10^{23}x1x3.14x3.58x10^{-10}x3.58x10^{-10})/96487$

=48962.088x10³/96487

 $=0.507447 \times 10^{3}$

=507.447 m² g⁻¹



Fig. S1 (a) GCDs curves of device at different current densities and the Ragone plot (b) of the device.