Supporting Information

Enhanced Electrochemical Performance of $W_{18}O_{49}$/TiN Binary Composite Electrodes for Asymmetric Supercapacitors

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Electrode Preparation

The experimental procedure related to the fabrication of the asymmetric device and electrode preparation has been revised and explained more clearly in the manuscript to improve reproducibility and reader understanding. Furthermore, for better clarity and visual understanding, two additional schematic figures have been added in the Supplementary Information section. Figure S1 illustrates the detailed synthesis procedures of $W_{18}O_{49}$, TiN, and the TiN-$W_{18}O_{49}$ nanocomposite, while Fig. S2 presents the step-by-step electrode preparation and asymmetric device assembly process using Ni foam. Appropriate references to these supplementary figures have also been included in the revised manuscript at the relevant sections.

These additions significantly improve the clarity, transparency, and reproducibility of the experimental methodology.

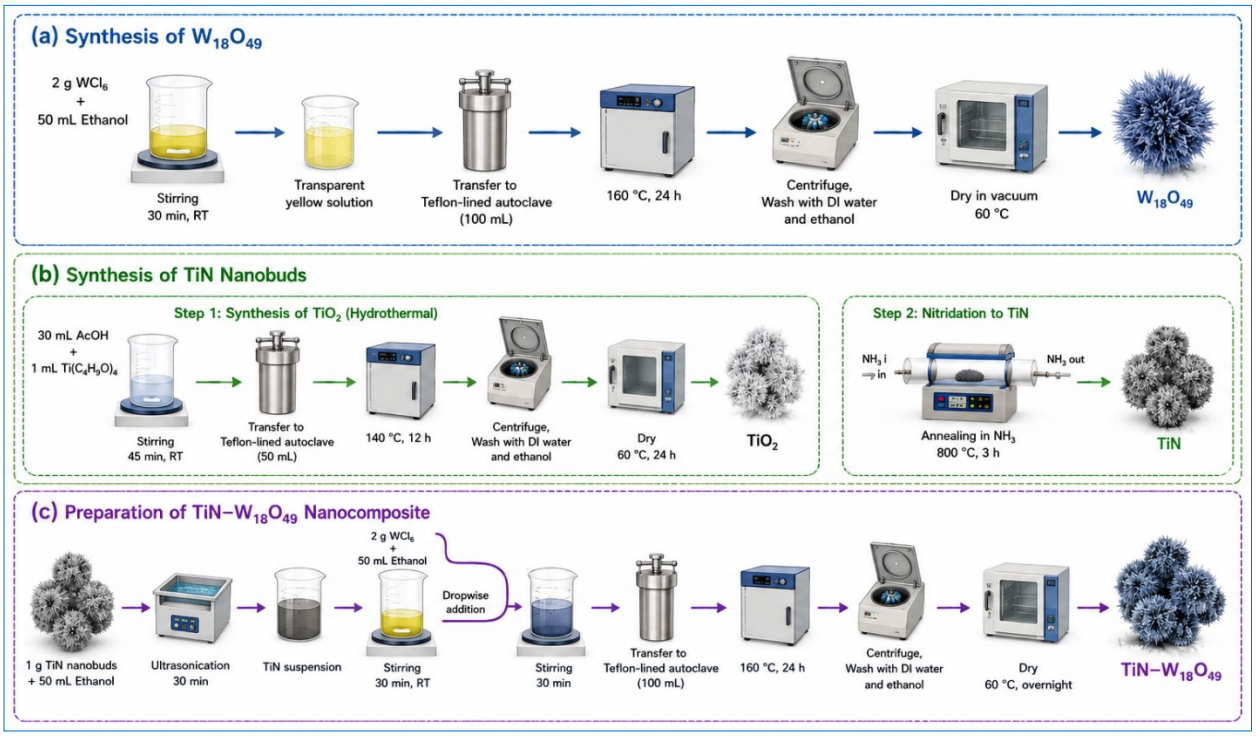

Fig S1 Schematic representation of synthesis of $W_{18}O_{49}$, TiN, and TiN-$W_{18}O_{49}$ composite

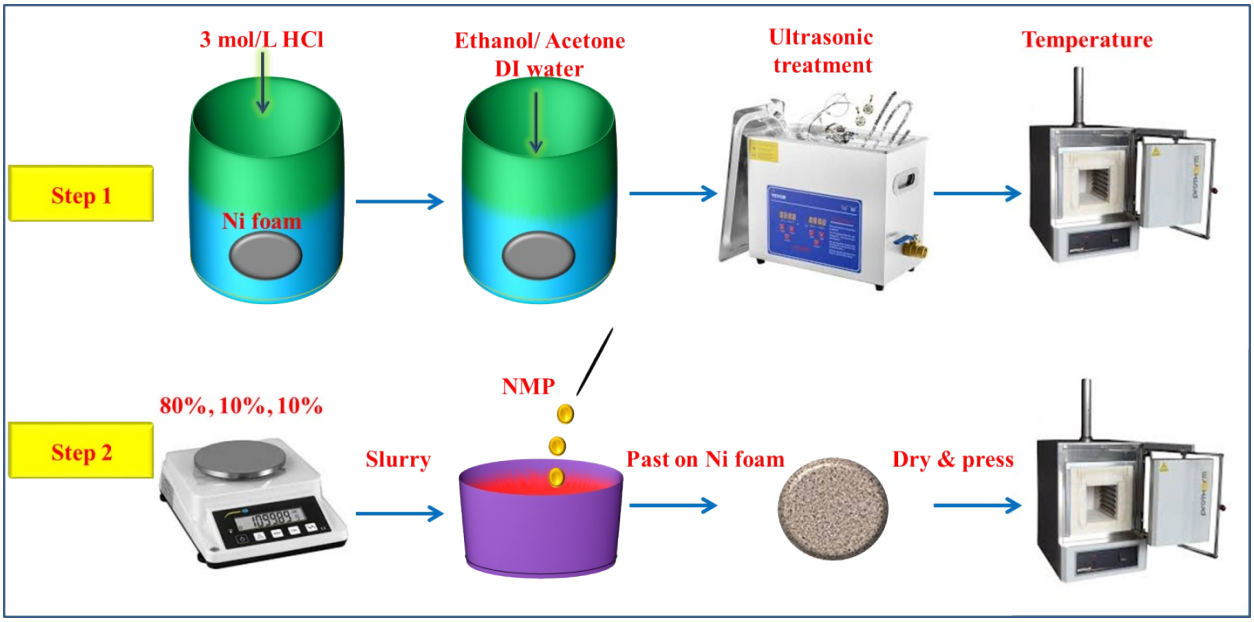

Fig S2 Schematic representation of electrode preparations