

Supplementary Information

Synergistic Integration of MXene and Metal-Organic Frameworks for Enhanced Electrocatalytic Hydrogen Evolution in an Alkaline Environment

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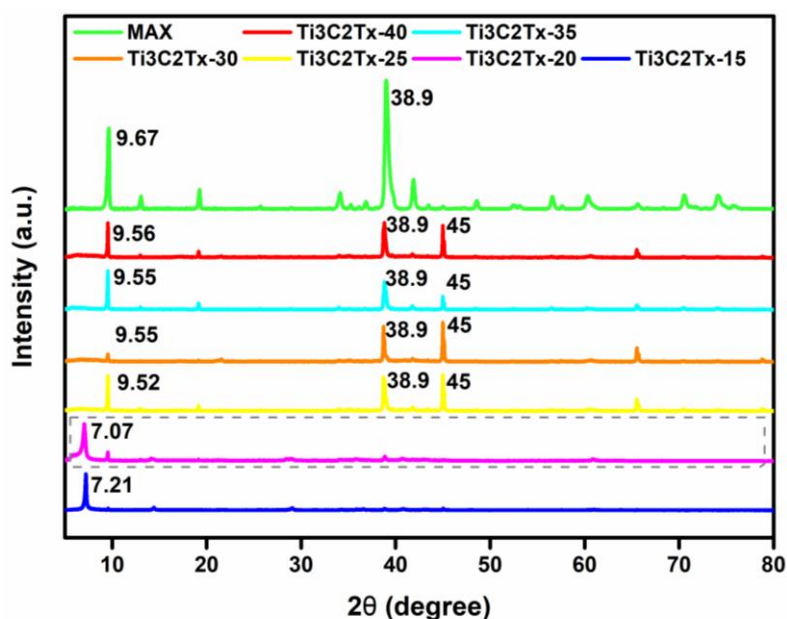


Figure S1. XRD of MXene $\text{Ti}_3\text{C}_2\text{T}_x$ with microwave irradiation time of 15-40 minutes.

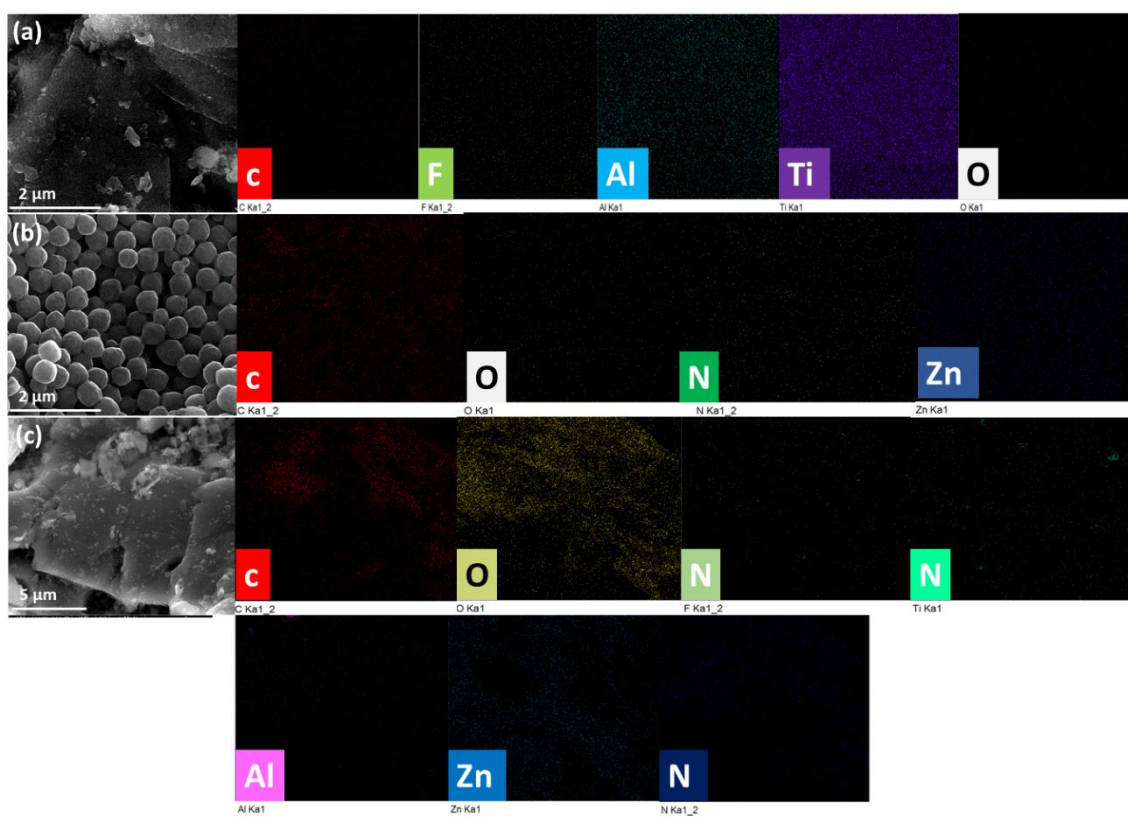


Figure S2. EDS elemental mapping of various materials (a) $\text{Ti}_3\text{C}_2\text{T}_x$ (b) ZIF-8 (c) $\text{Ti}_3\text{C}_2\text{T}_x@\text{ZIF-8}$

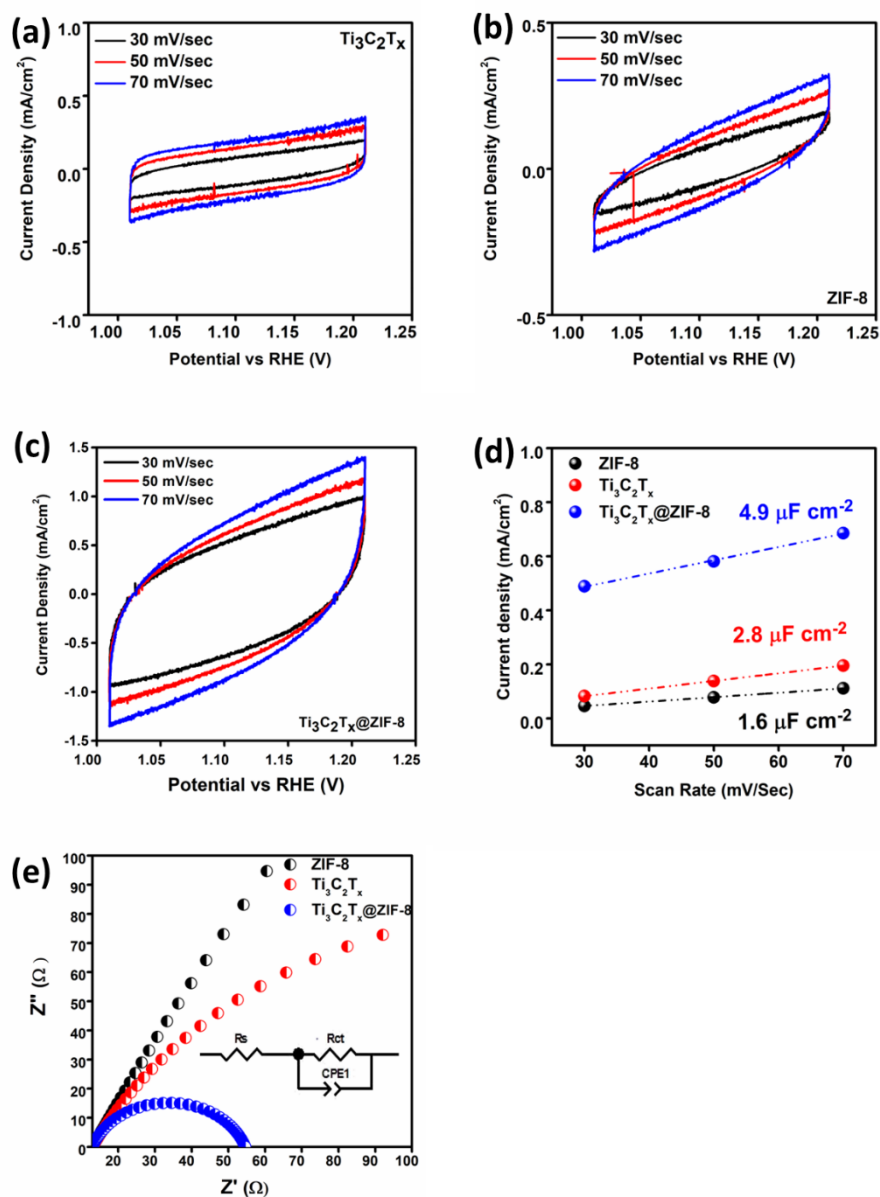


Figure S3. CV curves of various materials at scan rates of 30, 50, and 70 mV/sec; (a) $\text{Ti}_3\text{C}_2\text{T}_x$, (b) ZIF-8, (c) $\text{Ti}_3\text{C}_2\text{T}_x@\text{ZIF-8}$. (d) Double layer capacitance (C_{dl}) values calculated from CV scan rates by linear fitting of potential as well as current densities (e) Nyquist plots (calculated through EIS analysis) for various materials.