

## Template-Assisted Synthesis of IrO<sub>2</sub> Nanopores Membrane Electrode Assembly

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**Abstract :** With TiO<sub>2</sub> nanotube arrays (TNTA) as template, a IrO<sub>2</sub> nanopores membrane electrode assembly (MEA) was synthesized by a novel depositi-assemble-etch strategy. By analysing the morphology of IrO<sub>2</sub>/TNTA and cyclic voltammetry (CV) curve at different deposition cycles, we proposed a reasonable scheme for the process of IrO<sub>2</sub> electrodeposition on TNTA. The current density of IrO<sub>2</sub>/TNTA at 1.5V vs RHE reaches 5.12mA/cm<sup>2</sup> after 55 cycles deposition, which shows promising performance for its high OER activity after template removal.

**Keywords :** electrodeposition, IrO<sub>2</sub> nanopores, MEA, OER

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