Template-Assisted Synthesis of IrO2 Nanopores Membrane Electrode Assembly

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Abstract : With TiO2 nanotube arrays (TNTA) as template, a IrO2 nanopores membrane electrode assembly (MEA) was synthesized by a novel depositi-assemble-etch strategy. By analysing the morphology of IrO2/TNTA and cyclic voltammetry (CV) curve at different deposition cycles, we proposed a reasonable scheme for the process of IrO2 electrodeposition on TNTA. The current density of IrO2/TNTA at 1.5V vs RHE reaches 5.12mA/cm2 after 55 cycles deposition, which shows promising performance for its high OER activity after template removal.

Keywords : electrodeposition, IrO2 nanopores, MEA, OER

Conference Title : ICHFCT 2016 : International Conference on Hydrogen and Fuel Cells Technologies

Conference Location : Amsterdam, Netherlands

Conference Dates : December 01-02, 2016

1