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Electrospinning as a tool in fabricating hydrated porous cobalt phosphate fibrous network as high rate OER electrocatalysts in alkaline and neutral media

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Abstract

Electrospinning (ES) is a most reliable method for synthesizing one dimensional (1D) fibrous material. Fibrous materials are having peculiar interest owing to their fascinating properties. For efficient hydrogen fuel generation, electrocatalytic water splitting is one of the finest way of producing hydrogen in a pure form. But it is encountered by the counter oxygen evolution reaction (OER) in more often. As of now, noble metal based catalysts are utilized in the commercial sector. Some of the disadvantages associated with the noble materials are restrict their usage commercially. To address this issue, herein, we have synthesized One

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dimensional (1D), hydrated porous cobalt phosphate fibrous network by an ES method and act as an electrocatalyst for OER in both alkaline and neutral media for the first time, which exhibits an overpotential of 245 and 457 mV respectively at a current density of 10 mAcm⁻² with astonishing stability. © 2020 Hydrogen Energy Publications LLC

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Cobalt phosphate; Electrocatalyst; Electrospinning; One dimensional; Oxygen evolution reaction

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