Mini Review

Metal-organic Framework (MOF) Based Materials for Electrochemical Hydrogen Production: A Mini Review

Xue Wang and Meng Sun**

College of Electrical Engineering, Jilin Engineering Normal University, No.3050 Kaixuan Road, Changchun City, Jilin Province, 130052, P.R. China

*E-mail: xuewang@sutcm.net mengsun@vtcuni.com

doi: 10.20964/2021.05.42

Received: 1 January 2021 / *Accepted:* 3 March 2021 / *Published:* 31 March 2021

This paper reviews the research progress of some typical metal organic frameworks (MOFs) and MOF composites in the field of electrocatalytic hydrogen production over recent years. We conclude that MOF materials have excellent performance in the field of electrocatalytic hydrogen production based on their structural type, as follows: (1) pure MOF electrocatalysts; (2) MOF-supported composite electrocatalysts; and (3) MOF-derived electrocatalysts. We discuss the relationship between the internal structural characteristics of the materials and their electrocatalytic properties. This paper summarizes the design and synthesis strategies of these materials. Finally, we briefly discuss the prospects of their future development and propose possible issues.

Keywords: Metal organic frameworks; Electrochemical hydrogen production; Composite; Internal structure; Electrocatalyst

[FULL TEXT](#)

© 2021 The Authors. Published by ESG (www.electrochemsci.org). This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).