

Particle size control of MOF-808 and its application for electrocatalyst support김유리¹, 임경민^{1,2}, 김진수^{1,†}¹경희대학교; ²KIST(jkim21@khu.ac.kr[†])

Metal-organic framework (MOF) forms one to three-dimensional crystal structure by strong bonding between metal clusters and organic ligands. MOF is a new class of porous crystalline materials with high crystallinity, micro/mesopores, and a large specific surface area. Zr-MOF-808 is composed of Zr-SBUs connected to six 1,3,5-benzenetricarboxylate (BTC) linkers to form a 3D porous framework containing two different types of pores. These two pores increase mass transfer and can be used well as electrocatalyst support. In this study, we synthesized Zr-MOF-808 in different sizes for its application as electrocatalyst support. In order to control the size of Zr-MOF-808, the nucleation time and growth time were changed. With increasing the nucleation time, the particle size was reduced. During the synthesis process, various types of metal dopants were added to investigate the effect of metal species on electrocatalytic performance. Zr-MOF-808s were characterized by HR FE-SEM, HR TEM, XRD, BET and XPS.