

Phase Transformation of Iron Phosphide Nanoparticles for Hydrogen Evolution Reaction
Electrocatalysis

조건희, 김호영, 박윤수, 홍윤건, 하돈형[†]
중앙대학교
(dhha@cau.ac.kr[†])

Transition metal phosphides have emerged as alternative electrocatalysts for hydrogen evolution reaction (HER) due to their high activity and low cost compared to the conventional HER electrocatalysts such as Pt. However, the dependency of HER activity on different crystal phases is not well-understood. Here, we synthesized iron phosphide nanoparticles with two distinct phases via chemical transformation from iron metal to iron phosphides. During the development of iron phosphide phases by varying the synthesis conditions such as reaction temperature and time, the HER activities of the nanoparticle were examined. The HER activities of the iron phosphide nanoparticles were found to be phase-dependent