

## Abstract

Increasing demand for sustainable energy has accelerated research on various renewable technologies. Specifically, photocatalysis or electrocatalysis can be considered as a novel concept in modern energy technologies. Photo/electrocatalysts play a key role in these energy conversion technologies because they enhance the redox reaction rate, efficiency, and selectivity during chemical transformations. Today's photo/electrocatalysts, however, are usually inefficient. The grand challenge is to develop advanced catalysts with adequate ability of widespread adoption throughout the clean energy conversion. My research focuses on the development advanced materials for photo/electro-catalysis, including water splitting and CO<sub>2</sub> reduction, including nanoparticles, sub-cluster and isolated atom. Related results/conclusion guide the design of efficient catalytic materials and get us closer to the truth.

## Biography:

Dr. Huabin Zhang, born in 1986. He graduated from Chinese academy of science in 2013, After graduation, he stayed in the university as an assistant professor. In 2014, He moved to Japan and join into National Institute for Materials Science (NIMS) in Tsukuba for conducting his post-doc research. In 2017, He joined into Nanyang Technological University as senior researcher. He mainly focuses on the development advanced materials for photo/electro-catalysis, including water splitting and CO<sub>2</sub> reduction. He have published 86 SCI papers with total citation times of 4500 and H-index of 35. Among them, 43 papers were published as the first author or corresponding author in Science Advances (Science series), Joule (Cell series), Energy & Environmental Science, Journal of the American Chemical Society, Angewandte Chemie International Edition,Advanced Materials, Advanced Energy Materials, Advanced Functional Materials,ACS Nano and Nano Energy et al.