Scientific Committee: Chemical Technologies

Research Work Title

S-scheme Heterojunction Photocatalyst

Researcher

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Field

Chemistry, Materials Science

Country

The People's Republic of China

Scientific Affiliation

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Abstract

Rapid industrial development places a great reliance on the fossil fuels leading to energy and environmental crises such as a dramatic increase in atmospheric CO_2 concentration. Photocatalysis is a promising technology for solar fuel generation and environmental protection and can sustainably convert inexhaustible solar energy into storable chemical energy. Construction of heterojunction photocatalysts is significant for the enhancement of photocatalytic efficiency due to a suppressed carrier recombination. Considered a pioneer in photocatalysis, Prof. YU has been actively engaged in elucidating the fundamentals of a heterojunction photocatalyst. He proposed an innovative S-scheme heterojunction photocatalyst, and conducted a systematic research on it from theory to application. Specifically, Prof. YU developed characterization methods of a S-scheme photocatalyst being widely applied in H_2 production, CO_2 reduction, environmental purification, sterilization and organic synthesis.

Biography

Jiaguo YU was born in Hubei of China. He received his BS and MS degrees in chemistry from Central China Normal University and Xi'an Jiaotong University, respectively, and his Ph.D. degree in materials science from Wuhan University of Technology (WUT). In 2000, he became a Professor at WUT. Prof. YU was a postdoctoral fellow at the Chinese University of Hong Kong from 2001 to 2004, a visiting scientist from 2005 to 2006 at the University of Bristol, and a visiting scholar from 2007 to 2008 at the University of Texas at Austin. In 2021, he joined the China University of Geosciences. Prof. YU is a Member of the Academia Europaea (2020) and a fellow of the European Academy of Sciences (2020). He published over 600 SCI papers (149 highly cited ones) and five books and was announced by the Thomson Reuters the "Hottest Researcher" of 2012 in the world.