

Carbon-Based Catalytic Materials for Energy Conversion

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Carbon-based materials have great potential in application for energy storage and conversion because of their low cost, high stability and rich microstructure features. A series of carbon-based materials, represented by g-C₃N₄ and graphene composites have been prepared and employed as catalysts for hydrogen abstraction from organic molecules and for electro catalytic splitting of water. Metal nanoparticles and semiconductor supports have been integrated to form efficient catalysts for hydrogen evolution reactions. We have investigated in detail the microscopic structures, the active sites and the transport efficiencies for matter and electrons of the carbon-based materials.

Biography:

Professor Jie-Sheng Chen received his PhD degree from Jilin University in 1989 and worked as a postdoctoral fellow in the Royal Institution of Great Britain, the United Kingdom from 1990 to 1994 and as a professor in the Department of Chemistry, Jilin University from 1994 to 2008. Since 2008, he has been a professor in the School of Chemistry and Chemical Engineering, Shanghai Jiao Tong University. His research interest is the synthesis of solid compounds and composite materials with new structures and functions.