

Chemistry 2019: New tendency of modified graphene with different methods for the photocatalytic applications

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Abstract

Due to its unique atom-thick 2D structure and remarkable physicochemical properties, graphene has been sparked a flurry of research into its optical, electronic, thermal, and mechanical properties. In particular, a great deal of recent attention has been attracted to explore graphene and graphene composites for photoelectrochemical applications. Recently, much works have been done on attempting to design and prepare novel graphene-based materials for a wide range of applications in photo-electrochemistry, ranging from photoelectrochemical solar cells, photocatalytic decomposition of organic pollutants, and H₂ evolution. In this feature article, we summarize the state of research on graphene-based materials for photo-electrochemistry. The prospects and further developments in this exciting field of graphenebased materials are also discussed. Won-Chun Oh is a Professor in the Department of Advanced materials and engineering at Hanseo University in Korea and School of Materials Science and Engineering at Anhui University of Science and Technology in China. He obtained a Ph.D. degree at Dankook University in 1995. And, he is guest professor in some of Universities in China, Thailand and Indonesia. He obtained the 'Research Front' award, 'Yangsong' award, "Excellent Paper Award", and the Best Paper Award" in 2011, 2012 and 2015, and Award of appreciation from ICMMA2011 and ICMMA2014. He is appointed as one of the "Conference Chairman and Local Chairman" from 2007 to present year. His current research fields are nanostructured materials such as metal/nanocomposite, graphene materials and metal nanoparticles, and their catalytic applications for future energy sources and green chemical technologies. He is the author or a coauthor of 693 papers published in domestic and international journals. He serves as the Editor-in- Chief of the Journal of Multifunctional Materials and Photoscience, Asian Journal of Materials Chemistry and the Advisory Board Member of the Asian Journal of Chemistry.

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