Review on Graphene Based Explosive Sensors

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Abstract: Explosive and its trace detection technology has become one of research hotspots in the field of current international anti-terrorism. All kinds of sensors, such as surface acoustic wave sensors and ion mobility spectrum sensors, used to detect explosives, can not meet the requirements of practical application in the detection indicators. The graphene based explosive sensors with detection limit by 10^{-10} have the advantages of fast response and high sensitivity and have gradually become the focus of research. In this paper, the superiorities of graphene in the sensor application were briefly analyzed. The progresses of study about graphene based explosive sensors, including electrochemical, surface enhanced Raman scattering (SERS), fluorescence resonance energy transfer (FRET), and electrochemical luminescence (ECL) sensors were emphatically introduced in recent years. The technical characteristics of existing grapheme based explosive sensors were summarized. Considering that the surface modification and functionalization of graphene and graphene oxide (GO), development of graphene hybrid materials with excellent performance and improvement of the detection sensitivity are the direction of future research.

Key words: graphene; explosives detection; electrochemical; surface enhanced Raman scattering (SERS); fluorescence resonance energy transfer (FRET); electrochemical luminescence (ECL)

CLC number: TJ55 **Document code**: A **DOI**: 10.3969/j.issn.1006-9941.2014.01.023

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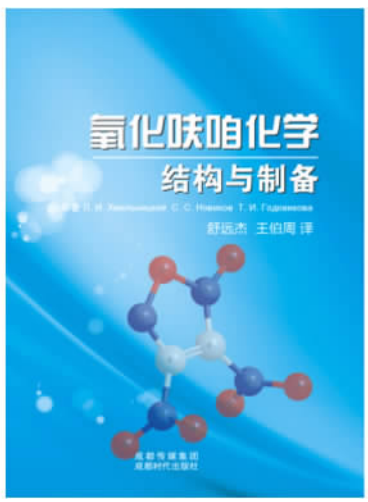
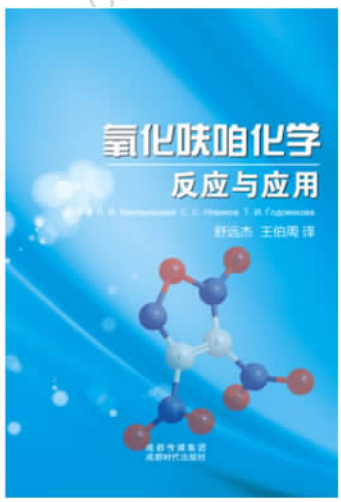
新书介绍

《氧化呋咱化学——结构与制备》和《氧化呋咱化学——反应与应用》由前苏联炸药合成领域的知名专家Л. И. Хмельницкий、С. С. Новиков和Т. И. Годовикова著,舒远杰、王伯周研究员翻译,成都时代出版社出版。本套科技专著系统全面地介绍了氧化呋咱的结构、合成方法以及相关化学反应,深入介绍了呋咱的基础科学研究及实际应用,对我国新型含能化合物的设计与制备有重要指导意义,是一套学术性和实用性很强的科学专著,在本领域内还没有类似丛书。

该书读者对象主要是从事炸药与推进剂设计、制备与应用的科技人员、研究生、教师和相关专业大学生。





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