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论文

一些含氮有机物在*N*-氯代丁二酰亚胺-二氯荧光素体系中的后化学发光反应

张慧忠¹, 聂菲^{1,2}, 吕九如¹

1. 陕西师范大学化学与材料科学学院, 陕西省生命分析化学重点实验室, 西安 710062;
2. 西北大学分析科学研究所, 西安 710069

摘要:

研究了53种含氮有机物在*N*-氯代丁二酰亚胺(NCS)-二氯荧光素体系中的后化学发光行为, 结果发现, 很多物质在NCS-二氯荧光素体系中都具有后化学发光活性. 经过结构分析发现, 这类物质有无后化学发光活性以及后化学发光活性的强弱主要与其分子结构中N原子的状态有关. 在对有关反应的动力学性质、化学发光光谱及有关物质荧光光谱的研究基础上, 提出了这类后化学发光反应的可能机理.

关键词: 后化学发光; *N*-氯代丁二酰亚胺; 二氯荧光素; 含氮有机物

Post-chemluminescence Reaction of Some Nitrogenous Organic Compounds in the *N*-Chlorosuccinimide-dichlorofluorescein System

ZHANG Hui-Zhong¹, NIE Fei^{1,2}, LÜ Jiu-Ru^{1*}

1. School of Chemistry and Material Science, Shaanxi Normal University, Xi'an 710062, China;
2. Institute of Analytical Science, Northwest University, Xi'an 710069, China

Abstract:

The post-chemiluminescence behavior of fifty three kinds of nitrogenous organic compounds was studied in the *N*-chlorosuccinimide-dichlorofluorescein system. Many substances were found to have the post-chemiluminescence activity in the system. After the analysis for the structure of these nitrogenous organic compounds, it was found that the state of the N atom in the molecules was important to the post-chemiluminescence activity and the post-chemiluminescence intensity of the nitrogenous organic compounds. The possible reaction mechanism of the post-chemiluminescence reaction was proposed based on the studies of the chemiluminescence kinetic characteristics, the chemiluminescence spectra and the fluorescence spectra of some related substances. The application value of these post-chemiluminescence reactions in analytical chemistry was estimated.

Keywords: Post-chemiluminescence; *N*-Chlorosuccinimide; Dichlorofluorescein; Nitrogenous organic compound

收稿日期 2009-04-01 修回日期 网络版发布日期

DOI:

基金项目:

通讯作者: 吕九如, 男, 教授, 博士生导师, 从事化学发光分析研究. E-mail: ljr@snnu.edu.cn

作者简介:

参考文献:

- [1] HE Zhi-Ke(何治柯), LUO Qing-Yao(罗庆尧), ZENG Yun-E(曾云镠). Journal of Instrumental Analysis(分析测试学报)[J], 1997, 16(1): 72—84
- [2] GUO Li-Li(郭丽丽), XU Chun-Li(许春丽), LI Bao-Xin(李保新), et al.. Chem. J. Chinese Universities(高等学校化学学报)[J], 2007, 28(6): 1043—1048
- [3] XUE Bing-Chun(薛冰纯), WANG Tao(王滔), LIU Er-Bao(刘二保). Spectroscopy and Spectral Analysis(光谱学与光谱分析)[J], 2006, 26(5): 816—820
- [4] Zhang Q. L., Li J., Ma T. T., et al.. Food Chemistry[J], 2008, 111(2): 498—502
- [5] Giuseppe L., Ana M. G. C., Jorge J. S. C., et al.. Journal of Pharmaceutical and Biomedical Analysis[J], 2008, 46(2): 381—385
- [6] Chen J., Bai J.. Spectrochimica Acta, Part A[J], 2008, 71(3): 989—992

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- [7]WU Dan-Ning, ANG Xu, LIN Jin-Ming. Chinese J. Chem.[J], 2006, 24(1): 65—71
- [8]DU Jian-Xiu(杜建修), LIU Wen-Xia(刘文侠), LÜ Jiu-Ru(吕九如). Acta Chmica Sinica(化学学报)[J], 2004, 62(14): 1323—1326
- [9]LIU Qing-Hui(刘清慧), LÜ Jiu-Ru(吕九如), FENG Na(冯娜). Chem. J. Chinese Universities(高等学校化学学报)[J], 2006, 27(6): 1036—1041
- [10]MA Ming-Yang(马明阳), LÜ Jiu-Ru(吕九如). Chem. J. Chinese Universities(高等学校化学学报)[J], 2007, 28(3): 436—440
- [11]Sun S. W., Lu J. R.. Anal. Chim. Acta[J], 2006, 580: 9—13
- [12]Nie F., Lu J. R.. Anal. Chim. Acta[J], 2007, 592: 168—172
- [13]Nie F., Lu J. R.. Talanta[J], 2008, 74: 1242—1246
- [14]LIU Rui-Xia(刘瑞霞), LÜ Jiu-Ru(吕九如). Chinese J. Analytical Chemistry(分析化学)[J]. 2009, 37(2): 267—270
- [15]Afsaneh S., Mohammad A. K.. Talanta [J], 2002, 57(3): 491—500

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