

- 京理工大学, 2002.
- [9] 高玉珍. 毫秒雷管延期时间的影响因素探讨[J]. 煤矿爆破, 2003(1): 15-17.
- GAO Yu-zhen. Investigation in the influence factors on delay time of millisecond detonator[J]. *Coal Mine Blasting*, 2003(1): 15-17.
- [10] 孙玉玲, 颜事龙, 王卫国. 硅系延期药燃烧过程的研究[J]. 煤矿爆破, 2006(4): 1-3.
- SUN Yu-ling, YAN Shi-long, WANG Wei-guo. Study on combustion process of silicon type delay explosive[J]. *Coal Mine Blasting*, 2006(4): 1-3.
- [11] 马志刚, 王瑾, 葛雷, 等. 高速摄影法研究铅芯延期体的燃烧特性[J]. 火工品, 2006, 6(3): 39-41.
- MA Zhi-gang, WANG Jin, GE Lei, et al. Study on the burning characteristic of delay element with lead tube by high speed photography[J]. *Initiators & Pyrotechnics*, 2006, 6(3): 39-41.
- [12] 刘玉存, 王作山, 吕春玲, 等. 黑索今粒度及粒度级配对接高分子粘结炸药冲击波感度的影响[J]. 兵工学报, 2005, 26(1): 126-128.
- LIU Yu-cun, WANG Zuo-shan, Lü Chun-ling, et al. Influence of particle size and gradation of RDX on the shock sensitivity of a polymer bonded explosive[J]. *Acta Armamentarii*, 2005, 26(1): 126-128.
- [13] 黄寅生. 延期体喷火能力的光电测量[J]. 煤矿爆破, 1994(2): 12-14.
- HUANG Yin-sheng. Photoelectricity measure on the firing capability of the delay element[J]. *Coal Mine Blasting*, 1994(2): 12-14.

Research on the Performance of PETN and RDX as the Excitation Powder

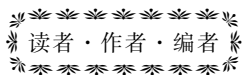
MA Hong-hao¹, SHEN Zhao-wu¹, CHEN Wen-chuan², ZHOU Guang-hui², FANG Jin-xiong²

(1. Modern Mechanics Department, University of Science and Technology of China, Hefei 230027, China;

2. Yongchun Chemical Factory, Yongchun 362615, China)

Abstract: The difference of the delay time of non-primary detonator was compared by using PETN and RDX as the excitation powder, and the data were analyzed based on hot spot initiation theory. The results show that in non-primary instantaneous electric detonator, PETN and granulated RDX can be used as the excitation powder, but the delay-time of PETN (8.33 ms) is shorter than that of granulated RDX (9.35 ms), in non-primary non-electric delay detonator, the delay-time of the granulated RDX as the powder is steady; PETN can be used as the excitation powder in instantaneous or lower non-primary non-electric delayed detonator.

Key words: explosion mechanics; non-primary detonator; excitation powder; excitation set-up; cap; hot spot initiation theory



日本第三届国际含能材料及应用研讨会召开

由日本火药学会主办的第三届国际含能材料及应用研讨会(The 3rd International Symposium on Energetic Materials and their Applications)于2008年4月24日~25日在日本东京召开。来自日本、美国、英国、法国、俄罗斯、加拿大、瑞典、南非、波兰、印度及中国等20余个国家的近200余名专家学者参加了会议,论文摘要集收录论文94篇。

会议分主会场和分分会场同时进行报告,内容包括数值模拟、爆破、化学分析、气体发生器、危险与安全、推进剂、含能材料、冲击压缩、热分析等领域,如韩国学者 Jai-ick Yoh 作了题为“极端条件下爆炸的热力学和动力学”报告,比利时学者 M. Asahara 作了题为“球形爆轰波的传播的数字研究”的报告,日本学者 S. Abe 作了题为“化学安全事故数据库的相关信息系统——爆炸事故案例研究(II)”的报告,法国学者 Adam Collins 作了题为“钝感炮弹和战斗部用浇铸 PBX 相关技术”的报告等。更多的论文进行了张贴报告,中国工程物理研究院化工材料研究所曾贵玉和郁卫飞的两篇论文受到多名专家的关注。

本次会议体现了近年来含能材料领域的最新进展和动态,反映了国际关注的领域和内容,起到了交流、学习和提高的目的。

(中国工程物理研究院化工材料研究所 曾贵玉 供稿)