[8] 洪东跑,赵宇,温玉全. 基于序约束的火工品可靠性试验数据分析 [J]. 含能材料,2008,16(5):556-559.

HONG Dong-pao, ZHAO Yu, WEN Yu-quan. Order restricted analysis of reliability tests for explosive initiator [J]. Chinese Journal of Energetic

Materials (Hanneng Cailiao), 2008, 16(5): 556 - 559.

[9] Ayer M, Brunk H D, Ewing G M, et al. An empirical distribution function for sampling with complete information [J]. The Annals of Mathematical Statistics, 1955, 26(4): 641-647.

## Storage Reliability Analysis for Explosive Initiator Using Sensitivity Test Data

HONG Dong-pao1, ZHAO Yu1, WEN Yu-quan2

- (1. Department of System Engineering of Engineering Technology, Beijing University of Aeronautics and Astronautics, Beijing 100191, China;
  - 2. State Key Laboratory of Explosion Science and Technology, Beijing Institute of Technology, Beijing 100081, China)

Abstract: To improve the accuracy of storage reliability analysis for the explosive initiator, the sensitivity test was studied and the storage reliability analysis for explosive initiator was proposed using the sensitivity test data. In the method, the estimations of sensitivity distribution parameters were obtained from the up-down test data, and were processed to be order restriction with the isotonic regression. Then using the order restriction estimations, the model was established to relate the sensitivity distribution to storage time. Using the model, the confidence interval of storage reliability and storage life were obtained. The illustrative example shows that the method is available for storage reliability assessment or storage life prediction on the explosive initiator with high reliability.

Key words: systems engineering; explosive initiator; storage reliability; order restriction; sensitivity test

## 《应用化工》2010年度征订启事

《应用化工》主要报道化工领域重大科研成果和技术应用成果、化工企业急需的易于工业化的成果及对生产具有普遍指导意义的技术改造成果。对具有国家、部省级的自然科学基金资助项目、科技攻关项目相关论文优先报道。

《应用化工》为中国科技核心期刊,中国科学引文数据库来源期刊,中国科技期刊精品数据库收录期刊,美国化学文摘(CA)千刊表收录期刊,俄罗斯《文摘杂志》(AJ)收录期刊

《应用化工》为月刊,大16 开,160 页,每册20元,全年240元。刊号: ISSN1671-3206,CN61-1370/TQ; 广告经营许可证号: 6100004000041; 邮发代号: 52-225,当地邮局均可订阅。如在当地订阅不方便,可直接通过邮局或银行向杂志社订购。

地 址: 西安市西延路 61 号 应用化工杂志社

邮 编:710054

电 话: (029)83188501 13363918323

传 真: (029)85542621

http://www.zgyyhg.cn

E-mail: yyhg@ vip. 163. com

开户行: 西安市工商行雁塔路支行

账 户:陕西省石油化工研究设计院

账 号: 3700023009088205773