

Numerical Simulation and Experimental Investigation for Shock Initiation of Bulkhead Initiator

YANG Zheng-cai^{1,3}, LIAO Xin¹, LI Xiao-gang², ZHAO Liang³, XU Wei⁴

(1. Chemical School of Nanjing University of Science & Technology; Nanjing 210094, China; 2. Department of Chemistry, Tsinghua University; Beijing 100084, China; 3. Xi'an North Qinghua Mechanical and Electrical Apparatus Group Co., Xi'an 710025, China; 4. The Academy of Chinese Enginry Science, Beijing 100089, China)

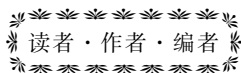
Abstract: The numerical simulation was employed to the design of a more reliable bulkhead initiator. The explosion transimission was simulated using LS-DYNA code. The simulation results show that when the thickness of bulkhead is between 2.0 mm and 5.0 mm, the bulkhead will transmit shock wave well without being penetrated, and the bulkhead initiator can perform its normal function when the thickness of bulkhead is between 1.5 mm and 2.4 mm. The simulation result agrees with the test result.

Key words: mechanics of explosion shock initiation; bulkhead initiator; numerical simulation; LS-DYNA

CLC number: TJ45

Document code: A

DOI: 10.3969/j.issn.1006-9941.2011.02.022



中国化学会第十五届全国化学热力学和热分析学术会议通知

中国化学会第十五届全国化学热力学和热分析学术会议定于2010年8月21-24日在西安召开。本届会议由中国化学会化学热力学和热分析专业委员会主办,西北大学和陕西省化学会承办。本次会议将邀请国内从事化学热力学和热分析研究的著名科学家、中青年学者和仪器生产厂商参加学术交流和探讨。欢迎从事化学热力学和热分析的科技工作者踊跃投稿,积极参加。

- 会议主题:
1. 溶液化学;
 2. 化学、化工热力学与热力学教育;
 3. POPs 热化学及其应用;
 4. 热分析及其应用;
 5. 材料热力学;
 6. 生物热力学;
 7. 表面和胶体热力学;
 8. 相平衡和分离技术;
 9. 统计热力学和计算机模拟;
 10. 仪器和方法;
 11. 其他。

联系人: 西北大学化学学院 杨奇 电话: 029-88305936, 13659116776 E-mail: ctt2010@126.com

会议网页: <http://ctta.nwu.edu.cn>