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### Synthesis of 3-Amino-4-nitrofurazan by an Improved Method

ZHANG Jun-qi, ZHANG Wei, ZHU Hui, WANG Chun-hua, WANG You-wei

(Aerospace and Materials Engineering College, National University of Defense Technology, Changsha 410073, China)

**Abstract:** 3-Amino-4-nitrofurazan (ANF) was successfully synthesized from 3,4-diamino-furazan (DAF) by an improved method. In the synthesis, oxalic acid was employed with sodium tungstate as a cocatalyst instead of sulfuric acid, and 30%  $H_2O_2$  was employed as the oxidizer instead of 50%  $H_2O_2$ . The effects of reaction temperature, reaction time and quantity of catalyst on the conversion of DAF to ANF was studied by orthogonal design. The optimal reaction conditions were obtained as follows: reaction temperature 30  $^{\circ}C$ , reaction time 6 h, the mole ratio of cocatalyst to DAF 1 : 1. The conversion of DAF was about 33.70% under the optimal reaction conditions.

**Key words:** organic chemistry; 3-amino-4-nitrofurazan (ANF); 3,4-diamino-furazan (DAF); synthesis; orthogonal design

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### Numerical Simulation on Transformation Characteristic of Global Hole in Charge with Loading Rate

WEI Ke-zhen, ZHANG Qi

(State Key Laboratory of Explosion Science and Technology, Beijing Institute of Technology, Beijing 100081, China)

**Abstract:** In order to study the boundary pressure of charge hole in warhead and the effects of the relative hole bulk on the temperature in hole, a model of charge hole was established by ANSYS software, and transformation characteristic of the hole was simulated with solid-liquid coupling method of LS-DYNA. The transformation process of hole under loading was studied as well. Results show that, with loading rates increasing, the relative bulk of hole lessens and the boundary pressure of the hole increases. However, when the load is up to the maximal load and maintained, their change is slow.

**Key words:** explosion mechanics; solid-liquid mixed charging; loading rate; global hole; relative change

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### 更 正

本刊 2007 年第 1 期《HZSM-5 催化下  $N_2O_5$  对氯苯的绿色硝化研究》表 1 ~ 表 5 收率数据有误, 现更正如下:

- 表 1 硝化收率 7%, 11%, 13%, 13%;  
表 2 硝化收率 2%, 8%, 11%, 12%;  
表 3 硝化收率 1%, 5%, 8%, 9%, 11%, 12%;  
表 4 硝化收率 14%, 12%, 11%;  
表 5 硝化收率 11%, 11%, 10%, 8%。

特此说明。(作者:钱华 jyqianhua@yahoo.com.cn)

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