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## Effects of Thermal Ageing on Mechanical Properties of PBX Based on TATB

WEI Xing-wen, LI Jing-ming, TU Xiao-zhen, Wang Pei, ZHOU Xiao-yu

(Institute of Chemical Materials, CAEP, Mianyang 621900, China)

**Abstract:** The accelerated thermal aging tests of PBX based on TATB were carried out by using a hot air oven from 55 °C to 75 °C. The mechanical properties such as tensile strength, elongation at failure and modulus were measured before and after aging. Morphology of rupture section from tensile test at 55 °C was observed by using scanning electric microscopy (SEM). Results show that the mechanical properties and the interfacial mechanism between binder and TATB crystal do not undergo changes significant during the aging period.

**Key words:** materials science; polymer bonded explosive (PBX); accelerated aging; mechanical property

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## 新书推介——《含能材料》(Energetic Materials)

德国 Fraunhofer 化工研究所 (ICT) Ulrich Teipel 主编的《含能材料》(Energetic Materials) 已由国防工业出版社出版, ISBN: 7118060585/9787118060584。

该书共 542 页, 分两大部分。第一部分包括粉碎、结晶、分散、混合、包覆及微胶囊化等加工工艺, 及其工艺参数对粒子质量和性能的影响; 第二部分包括粒状含能材料的微观结构、晶型、粒度、润湿型、流变性、化学性能、热性能及爆炸性能等的理论分析和测定方法。书中还对有关加工工艺及性能预测的仿真和模型进行了精辟的述评。此外, 书中还专门论述了含能纳米粒子, 扼要介绍了近 20 年出现的几种新型含能化合物, 如 CL-20 (六硝基六氮杂异伍兹烷)、ONC (八硝基立方烷)、TNAZ (1,3,3-三硝基氮杂环丁烷)、ADN (二硝酰胺铵)、FOX-7 (1,1-二氨基-2,2-二硝基乙烷) 等。

全书由 40 位全球含能材料领域的知名专家撰写, 他们来自美、英、法、德、俄罗斯、意大利、荷兰、韩国及匈牙利。这些作者在书中阐述了他们对粒状含能材料加工工艺及性能表征的卓越科学见解、精湛的理论知识和丰富的实践经验, 还结合了他们自身多年的科学研究成果。此书反映了含能材料某些领域理论和实践的现代水平, 是一本非常实用的含能材料专著, 能为研究者提供有益的理论指导。

此书第 1,3,5,10 章及第 13 章的 13.1~13.3 节由欧育湘译、校; 第 2,4,12 及第 13 章的 13.4~13.5 节由韩廷解译, 李战雄及欧育湘校; 第 6,7 章由赵毅译, 欧育湘及韩廷解校; 第 9 章由孟征译, 欧育湘校; 第 8,11 章由李战雄译, 欧育湘校。全书由欧育湘审定, 韩廷解及赵毅整理。

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