

In-situ Crystallization Coating HMX by Polyurethane

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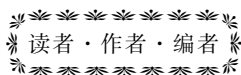
Abstract: In order to reduce the mechanical sensitivity of HMX efficiently, polyurethane in-situ crystallization coating method was used to modify HMX. The particle morphology, particle size, crystal type, impact sensitivity and friction sensitivity of original HMX and modified HMX were characterized by scan electric microscopy (SEM), laser light scattering sizer, X-ray diffraction (XRD) and mechanical sensitivity test. The results show that the crystal quality of modified HMX has been improved significantly, crystal shape is more orbicular and particle surface has less defects compared with the original HMX sample. The crystal type of modified HMX is β which is the same as that of original HMX. The impact sensitivity and friction sensitivity of modified HMX reduce from 90% and 70% of original HMX to 12% and 36% respectively which indicates in-situ crystallization coating method is an efficient means of decreasing the mechanical sensitivity of HMX.

Key words: physical chemistry; energetic materials; decreasing sensitivity; HMX; in-situ crystallization coating

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中国化学会第五届全国化学推进剂学术交流会通知

由中国化学会主办的中国化学会第五届全国化学推进剂学术交流会将于 2011 年 9 月上旬在大连举行。本届会议由中国科学院大连化学物理研究所承办。

本届会议的主题是：**高能燃料科学与技术**。

征文范围：

- 1、化学推进剂的研究进展与发展前景；
- 2、推进剂配方研制技术,包括绿色化学推进剂、凝胶/膏体推进剂、高能/吸热型/高密度碳氢燃料、氟胺类推进剂、高氮材料、高能富燃料推进剂、高能量密度物质,等等；
- 3、推进剂的分析测试、发动机推进技术及催化剂技术、理论计算；
- 4、推进剂安全防护、毒理及病理研究、污染控制与三废处理等。

征文要求：

- 1、论文观点明确,数据真实,文字精练、流畅,图表清晰,未在国内外公开刊物和全国性学术会议上发表过；
- 2、文责自负,论文应不涉密；
- 3、论文模板及编排规则可在会议网站下载；
- 4、论文通过会议网站在线投稿,根据在线投稿的说明,选择稿件主题与投稿类别；
- 5、征文截止时间为 2011 年 6 月 30 日。

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