

- 1998.
- [5] Ampleman G, Marois A, Beaupre F. Synthesis of energetic copolyurethane thermoplastic elastomers for recyclable GAP-based HELOVA gun propellants [A]. NDIA IM/EM Symposium [C], 1998.
- [6] Eamon Colclough M, et al. DRA approaches to new energetic binders [A]. 6th International Gun Propellant & Propulsion Symposium [C], 1994.
- [7] Arber A, Bagg G, Colclough E, et al. Novel energetic polymers prepared using dinitrogen pentoxide chemistry [A]. 21st Int. Ann. Conf. ICT [C], 1990. 3 - 1.
- [8] 陈莹. 聚 NIMMO 基 LOVA 炮药的进展 [J]. 兵器快报, 1999, 4(7): 10 - 11.
- [9] Cumming A. New directions in energetic materials. [J]. J. Def. Sci., 1995(3): 319.
- [10] Robert B Wardle, et al. Polyoxetane thermoplastic elastomers as gun propellant binders [A]. 6th International Gun Propellant&Propulsion Symposium [C], 1994.
- [11] 李辰芳. 含能 BAMO/AMMO 粘合剂及其在固体推进剂中的应用研究 [J]. 飞航导弹, 1997, 1: 42 - 45.
- [12] Gwilym J Rees, et al. Poly(vinyl dinitrophenyl acetate): a potential energetic binder [A]. 22nd International Pyrotechnics Seminar [C], 1996.
- [13] Achim Pfeil, et al. Controlled pyrolysis of the new energetic binder azide polyester PAP-G [J]. Propellants, Explosives, Pyrotechnics, 1997, 22: 137 - 142.
- [14] Akira Iwama, et al. Hydrogenated hydroxy-terminated polyisoprene as a fuel binder for composite solid propellants [J]. Propellants, Explosives, Pyrotechnics, 1996, 21: 43 - 50.

## The Research and Development on Energetic Binders for Propellants Abroad

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**Abstract:** The research and development on energetic binders for propellants abroad are summarized, focusing on the synthesis and applications of several thermoplastic elastomers, such as GAP, polymer of NIMM and copolymer of BAMO/AMMO etc. All of them are promising in potential uses in propellants.

**Key words:** energetic binder; thermoplastic elastomer; GAP; NIMM; BAMO; AMMO

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