

pH 值在 6.50 以上, 适合于含硼富燃料推进剂的制药工艺, 而且  $B^{PBT}$  与丁羟的粘度较无定形硼粉与丁羟的粘度明显减小。但由于 PBT 表面包覆的不均匀, 导致在加入微米级 AP 后粘度增大, 且光泽度稍有下降, 因此包覆条件还有待进一步提高。

(3) 用 PBT 包覆后硼粉燃烧效率明显提高。

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## Research on the Surface Coating of Superfine Boron Particles with PBT

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**Abstract:** The methods of direct reaction and solvent evaporation are adopted to coat boron powder with PBT. Transmission electron microscope, acidity-instrument and rotary viscometer are used to analyze the properties of the coated boron powder. The results obtained by X-ray photoelectron spectroscopy and transmission electron microscope show that the surface is perfect. The analysis results obtained by acidity-instrument and rotary viscometer show that coating of PBT can improve the value of pH of the solution with boron and effectively reduce the viscosity of propellant. The analysis of combustion residues shows that the burning efficiency is obviously improved after coated by PBT, and the amount of substance proportion between  $B_2O_3$  and B increases from 1 : 22.7 to 1 : 8.51.

**Key words:** analytical chemistry; boron-based fuel-rich solid propellant; PBT; surface coating; boron

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### 更正

2005 年第 2 期《Zr、Mg 系烟火剂发光光谱特性研究》一文关键词的“铝系”应为“Zr 系”。特此更正。

《含能材料》编辑部  
2005 年 5 月