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Nano-RDX/RF Film Preparation with Sol-gel Method

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Abstract: Nano-RDX/RF composite film was obtained by sol-gel method, which was arranged as sol preparation, sol heating, glass base lifting-pulling, and film drying. The composite film appeared semitransparent and brown to yellow from optical microscopy. Results show that shorter time sol-heating results in thiner film with less surface roughness, less conglutination to base, and easily to disconnect, while longer time sol-heating resluts in thicker film with better conglutination to base and worse roughness. RDX distributes in the film everywhere on the whole but discretely on the scale of 2.4 μm according to EDS results. XRD curve of RDX/RF film shows the superposition of RF non-crystal bread curve and RDX crystals diffraction curve. RDX diffraction peaks are broadened and its crystal size is calculated to be lower to 43 nm. Nano-RDX/RF film prepared by sol-gel method can be controllable, which is better than that by physical vapor deposition method and can be applied in microminiature initiating apparatus.

Key words: organic chemistry; energetic materials; nano-RDX; film; crystal size

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更 正 二

作者对 2008 年 16 卷第 3 期 p290 – 294 一文的更正:

[1] 式(2)中从左到右 3 个 T_b 依次改为 $T_{\alpha,1}^{-b}$、$T_{\alpha,2}^{-b}$和 $T_{\alpha,3}^{-b}$;

[2] 式(3)和式(4)中所有 b 改为 $-b$;

[3] 式(6)中 $H_{0,i}$后加上 $T_{\alpha,i}^{b}$,$H_{0,j}$后加上 $T_{\alpha,j}^{b}$; 式(7)中分子项中括号后加上 $T_{\alpha,i}^{b}$,分母项中括号后加上 $T_{\alpha,j}^{b}$;

[4] 式(20)中 $T = T_0 + \beta t$ 置等号上方;

[5] 式(14)公式尾部加上"$=n(n-1)$"。