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## Analyzing Crystal Form Purity of Hexanitrohexaazaisowurtzitane (CL-20) by Raman Spectroscopy

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**Abstract:** To establish a simple, efficient and good reproducible method of measuring the content of  $\gamma$ -crystal form impurities in  $\varepsilon$ -hexanitrohexaazaisowurtzitane ( $\varepsilon$ -CL-20), the characteristic parameters for the quantitative characterization of  $\gamma$ -CL-20/ $\varepsilon$ -CL-20 mixed samples were determined by Raman spectroscopy, and then, the characteristic peak area ratio  $A_{232}/A_{528}$  of two crystal forms was plotted against  $\gamma$ -CL-20 content. The standard curves in the two sets of concentration ranges of 2%–9% and 10%–90% were obtained respectively and compared with the quantitative results obtained by the peak area method. Results show that when the content of  $\gamma$ -CL-20 is 2%–9%, the relative error of  $A_{232}/A_{528}$  values for three sets of parallel experiments is not more than 2.2%, and the fitting equation is  $y=0.0062e^{0.2512x}$  with a correlation coefficient of 0.9806. When the content of  $\gamma$ -CL-20 is 10%–90%, the relative error of  $A_{232}/A_{528}$  is not exceed 2.9%, and the fitting equation is  $y=0.0822e^{0.0596x}$  with a correlation coefficient of 0.9816. Data reproducibility and fitting correlation coefficient of  $A_{232}/A_{528}$  are far better than the peak are method.

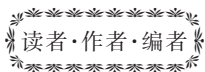
**Key words:** hexanitrohexaazaisowurtzitane(CL-20); Raman spectroscopy; quantitative analysis; crystal form; purity

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## 更正

本刊 2018 年第 10 期第 818 页中,“钛合金飞片的速度能够达到  $4.01 \text{ km} \cdot \text{s}^{-1}$ ”应为“铝飞片的速度能够达到  $4.01 \text{ km} \cdot \text{s}^{-1}$ ”。

特此更正。

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