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Effect of Crystal Modifier on Crystal Morphology of ϵ -HNIW

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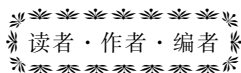
Abstract: The effects of alcohol compound (A_1) and carboxylic compound (A_2) as crystal modifiers on the crystal morphology of ϵ -HNIW were investigated by the process of crystal transition from γ -HNIW to ϵ -HNIW in the ethyl acetate/cyclohexane system. It has been found by scanning electron microscope (SEM) that the crystal shape of ϵ -HNIW changes and the crystal surface is smoother with less surface defects. Compared with the crystals obtained without crystal modifier, the area of $\{110\}$ planes of the crystal obtained with A_1 , and the area of $\{011\}$ planes of the crystal obtained with A_2 are increased. It is proved that A_1 could inhibit the growth of $\{110\}$ planes and A_2 could inhibit the growth of $\{011\}$ planes. The interaction between crystal modifiers and ϵ -HNIW crystal surface is studied by molecular dynamic simulation, which is consistent with the experimental results.

Key words: chemical engineering; crystal modifiers; crystal transition; ϵ -HNIW; planes

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中国兵工学会火工烟火专业第十六届学术年会征文通知

为促进我国火工烟火行业的创新发展,中国兵工学会火工烟火专业第十六届学术年会拟于2011年三季度召开。

会议征文内容包括:

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|------------------------------------|-----------------------------|
| 1、国内外火工品及相关药剂、烟火剂的基础理论、关键技术; | 5、火工品安全性、可靠性评估新方法、新理论; |
| 2、国内外火工品、爆破器材、烟火器材的发展趋势及动态分析; | 6、火工品及相关药剂测试分析新技术、新方法及仪器设备; |
| 3、国内外火工品及相关药剂的新工艺、新材料、新方法; | 7、火工品及烟火器材应用研究; |
| 4、火工品及相关药剂、爆破器材、烟火器材安全生产、贮运及销毁新技术; | 8、十二五火工烟火技术的发展趋势及动态分析。 |

来稿请写明作者姓名、性别、职称、职务、单位名称、从事研究工作内容、通信地址、邮编、电话、手机、E-mail,以便联系。

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