

锆酸铅晶体枝蔓晶生长的实时观察研究

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摘要 利用实时观察方法对锆酸铅晶体生长枝蔓晶的生长过程进行了描述和分析. 发现, 枝蔓晶的产生与杂质相关, 杂质作为一个成核中心, 在其周围存在一个溶质扩散层, 这个溶质扩散层的厚度随着晶体生长而增大. 当该扩散层的厚度超过某个临界值时, 出现枝蔓晶生长, 溶质扩散层的临界厚度约为12 μm . 枝蔓晶主干的生长速度受分支出现以及主干转向的影响.

关键词 [氧化物晶体](#) [生长缺陷](#) [实时观察](#) [枝蔓晶](#)

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In Situ Observation of Dendrite in $\text{Pb}_5\text{Ge}_3\text{O}_{11}$ Crystal Growth

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Abstract

The whole process of the dendrite growth in PGO melt crystal growth was visualized in the *in-situ* observation system. It was pointed out that the dendrite had relation with the PbO impurity. An concentration diffusive layer arising from the impurity was observed, and the dendrite growth was triggered when the diameter of the layer exceeded the critical value about 12 μm . The rate of the main trunk of the dendrite against the time was measured. It was noted that the rate was affected by some factors such as the appearance of the branches and the turning of the main trunk, which was assumed according to our early work.

Key words [oxide melt crystal growth](#) [defect of growth](#) [insitu observation](#) [dendrite growth](#)

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