

||||| 特集 2 : 最近の浮遊技術を利用した熱物性および構造測定 |||||
(解説)

浮遊法を用いた高温融液の過冷却状態での構造解析

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Structure Analysis of High Temperature Melts in Undercooled State by Using Levitation Technique

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Abstract

The thermophysical properties and the structure of molten semiconductors and metals in undercooled state have been observed using several levitation techniques. Two groups reported the structure data of undercooled molten silicon by using different levitation technique. Each data were completely different. The decrease of coordination number with temperature decreasing in undercooled state was obtained in gas-jet levitation experiments. On the other hand the increase of coordination number with decrease of temperature was obtained in electromagnetic levitation experiments. The difference of two data was discussed in the viewpoint of undercooled molten silicon structure. Based on the results of previous studies, we have been developed the precise measurement technique of structure of levitated melts in order to clarify the structural change of melts in undercooled state.