

文献数

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Effect of lattice disorder on the thermal conductivity of ZnBeSe, ZnMgSe and ZnBeMgSe crystals

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抄録 (Abstract)

Zn $_{1-x-y}$ Be $_x$ Mg $_y$ Se mixed crystals investigated in this work were grown from the melt by the high pressure high temperature modified Bridgman method in the range of composition $0 < x, y < 0.33$. Photopyroelectric (PPE) calorimetry in the back (BPPE) and front (FPPE) configuration was applied for thermal investigation of solid samples. The thermal diffusivity and effusivity of investigated crystals were derived from the experimental data. Since dynamic thermal parameters are connected with each other, thermal conductivity of the specimens was calculated from theoretical dependencies between them. The influence of the beryllium (x) and magnesium (y) content on thermal properties of these crystals have been presented and discussed. Order-disorder effects observed for these materials previously have been also taken into account. Finally, thermal diagrams, i.e. thermal conductivity versus composition were presented and discussed applying model given by [Sadao Adachi](#). © 2015 Elsevier B.V. All rights reserved.

著者キーワード

Alloys; Crystal growth; Semiconductors; Thermal conductivity; Thermal properties

文献タイプ: Article

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