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# Travelling Magnetic Field Influence on Crystal Growth by Bridgman Method

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The paper deals with the numerical investigation of axisymmetric travelling magnetic field (TMF) influence on crystal growth by vertical Bridgman method. Several types of material, two types of geometry and temperature distribution on ampoule lateral wall are studied. We have performed fully time-dependent simulation by finite difference method and obtained different characteristics of crystal growth process (stream function maximum and minimum, front deflection; dopant distribution, temperature and stream function fields in melt and in crystal) with and without TMF and analyze TMF influence on these characteristics. It is found that TMF induces meridional flow which could be easily controlled in magnitude and direction. As the calculations show, unlike static axial magnetic field, TMF even of small intensity makes significant influence on crystal/melt interface shape: depending on TMF propagation direction it can either decrease or increase front deflection. Thus, TMF application is promising method for growing of crystals with high quality.

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