

**PHASE FIELD SIMULATION OF THE CRYSTALLIZATION FRONT SHAPE IN
CZOCHRALSKI GROWTH OF GADOLONIUM GALLIUM GARNET CRYSTAL**

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ABSTRACT A solidification model was employed to study the interaction between the melt flow and the mushy zone structure in Czochralski growth of a semi-transparent oxide crystal. The effect of rotationally-driven forces on the flow pattern and correspondingly, on the interface shape was described. It was shown that, increasing the crystal rotation rate to a certain value, the convective flow protrudes into the mushy zone and dramatically changes its shape.