

Abstract Submitted
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Sidewall effects in mushy-zone convection STEVEN ROPER,
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tional solidification of a two-component melt forming a dendritic mushy zone can
lead to convective instabilities in the mush that lead to localized chimneys that in
turn can lead to imperfections (freckles) in the solid. We extend present theories
to include the presence of ampule sidewalls at which heat is lost. The result is a
curved mush-liquid front, solutal/thermal boundary layers at the sides, and altered
convective patterns and chimneys.

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