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Mathematical modeling of macrosegregation during solidification of binary alloy by Control Volume Finite Element Method

Roberto C. Cabrales, Nelson O. Moraga

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Highlights

- A mathematical model for solidification with CVFEM is implemented in a computer code
- Coupled heat and mass transfer in solidification of lead-tin alloy is described
- Thermo-solutal convection and freckle formation in phase-change are reported
- Effects of cavity aspect ratio and cooling direction in solidification are studied
- Macrosegregation maps for Pb-48%Sn alloy in rectangular cavities is investigated

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