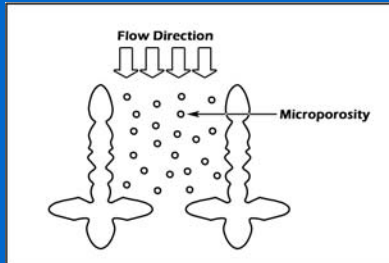


Investigation of Interaction Between Dendritic Crystal Growth, Microporosity Formation, and Melt Convection on Micro and Macroscales

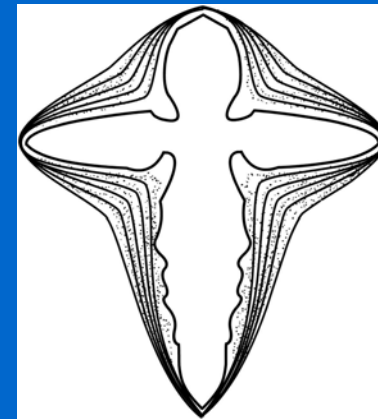
Objectives

- Develop a three-phase model of solidification (liquid, mushy, and gas phases)

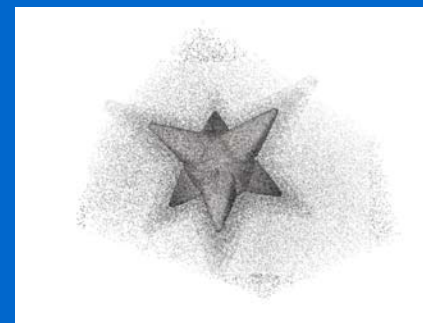


- Account for microporosity nucleation, growth, agglomeration, and migration
- Extend the phase-field approach to account for microporosity formation
- Investigate pushing/engulfment of a micropore by the phase/field model

Crystal growth with micropore engulfment



Crystal growth with microporosity formation



Crystal growth without microporosity formation

