

## Cusp magnetic field Effects of Silicon melt Motion in Large area Czochralski crystal puller

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A numerical analysis was performed on cusp magnetic field effects of silicon melt motion in large area Czochralski crystal puller<sup>(1)</sup>. The turbulent modeling was used to simulate the transport phenomena in 8" silicon single crystal growing process. For small crucible angular velocity, the natural convection is dominant. As the crucible angular velocity increase, the forced convection is increase and the distribution of temperature profiles is broadened. The cusp magnetic field reduces effectively the natural and forced convection near the crucible and the temperature profiles of the silicon fluids is similar to the case of conduction

### [Reference]

1. J. H. Lee and W. S. Lee, J. Kor. Assoc. Crystal Growth 7, 27 (1997).