

<<Magnetic convection >

图书基本信息

书名：<<Magnetic convection磁对流>>

13位ISBN编号：9781860945786

10位ISBN编号：1860945783

出版时间：2005-6

作者：Hiroyuki Ozoe

页数：223

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

内容概要

The manufacture of silicon single crystals is one of the most important processes in the information technology industry.

This book explains the details of liquid metal convection , providing a guide for the elegant operation and control of Czochralski crystal growth , including the effect of magnetic control.

Also covered is the newly emerging research field of the application of strong magnetic field using a superconducting magnet.

Model equations for the phenomena in the magnetic field are treated in detail , which will be of much use to researchers and engineers in the field.

The coverage includes the effect of the Lorentz force in materials processing and the magnetic force of recently developed superconducting magnets.

It examines heat , mass and momentum transfer in electro-conducting and non-conducting fluids under normal and very strong magnetic fields.

The book also treats the Czochralski single crystal growth process and continuous steel casting process as the most important current applications of magnetic fields.

Numerical approaches are compared with the corresponding experimental measurements.

书籍目录

Preface
Chapter 1 Application of a Magnetic Field for Materials Processing
Chapter 2 Natural Convection of Liquid Metal without a Magnetic Field
Chapter 3 Two-Dimensional Numerical Analyses for Natural Convection of Liquid Metal in a Magnetic Field
Chapter 4 Three-Dimensional Natural Convection of Liquid Metal in a Cubical Enclosure with a Magnetic Field
Chapter 5 Enhanced Heat Transfer Rate Convection Due to a Magnetic Field
Chapter 6 Natural Convection of Liquid Metal in a Cube with the Seebeck Effect Under a Magnetic Field
Chapter 7 Flow Visualization of Oscillatory Czochralski Convection
Chapter 8 Liquid Encapsulated Czochralski Bulk Growth with Flow Visualization
Chapter 9 Effect of Radiation Cooling from a Free Surface in Czochralski Melt Growth
Chapter 10 Effect of an Axial Magnetic Field on the Melt Convection of Czochralski Crystal Growth
Chapter 11 Effect of a Transverse Magnetic Field on the Melt Convection of Czochralski Crystal Growth
Chapter 12 Effect of a Cusp-Shaped Magnetic Field on the Melt Convection of Czochralski Crystal Growth
Chapter 13 Effect of a Rotating Magnetic Field on the Melt Convection of Czochralski Crystal Growth
Chapter 14 Continuous Stead-Casting Systems with Various Magnetic Fields
Chapter 15 Convection Induced by a Cusp-Shaped Magnetic Field for Air in a Cube Heated from Above and Cooled from Below
Chapter 16 Rayleigh-Benard Convection of Air in a Magnetic Field
Chapter 17 Effect of Various Parameters on the Convection of Air in a Cubic Enclosure Under a Magnetic Field
Chapter 18 Transient Characteristics of Convection and Diffusion of Oxygen Gas in an Open Vertical Cylinder Under Magnetizing Forces
Chapter 19 Rayleigh-Benard Convection of Diamagnetic Fluid
Chapter 20 Magnetothermal Wind Tunnel
Appendix
Nomenclature
Acknowledgements
Index
About the author

版权说明

本站所提供下载的PDF图书仅提供预览和简介, 请支持正版图书。

更多资源请访问:<http://www.tushu007.com>