EXPERIMENTAL STUDY OF NATURAL CONVECTION OF MAGNETIC FLUID IN A RECTANGULAR HELE-SHAW CELL

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ABSTRACT

THE NATURE CONVECTION OF A MAGNETIC FLUID IN A HELE-SHAW CELL WITH ASPECT RATIO OF ONE WAS STUDIED EXPERIMENTALLY. THE CONVECTION WAS INDUCED BY HEATING THE CELL AT BOTTOM. A V -ERTICAL MAGNETIC FIELD OPPOSITE TO THE DIRECTION OF GRAVITY WAS ALSO IMPOSED. RESULTS OB -TAINED FROM HEAT TRANSFER MEASUREMENTS AND SHADOWGRAPHS REVEALED THAT THE VERTICALLY IMP -OSED MAGNETIC FIELD HAS DESTABIZING INFLUENCE. IT ENHANCED THE MATURE CONVECTION.

Keywords : MAGNETIC FLUID , NATURAL CONVECTION , HELE-SHAW CELL , SHADOWGRAPHY

Table of Contents

第一章 緒論--P13 1.1文獻回顧--P13 1.2研究動機--P17 1.3磁性流體之構造--P17 第二章 研究方法--P19 2.1統御方程式--P19 2.2實驗設備架構--P21 2.2.1外加磁場--P21 2.2.2流場夾持試片--P21 2.2.3溫控系統--P22 2.2.4資料擷取系統--P23 2.2.5HELE-SHAW CELL--P24 2.2.6流場可視化系統--P25 第三章 結果與討論--P26 3.1磁性流體熱傳特性量測--P26 3.1.1自動化量測初步結果--P26 3.1.2資料擷取系統改良--P27 3.1.3量測結果與數據分析方法--P28 3.2流場可視化--P30 第四章 結論與未來工作--P32 參考文獻--P34

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