

# CONTENTS

	<b>Pages</b>
<b>Certificate</b>	<b>i-ii</b>
<b>Declaration</b>	<b>iii</b>
<b>Acknowledgement</b>	<b>iv</b>
<b>Contents</b>	<b>v-vii</b>
<b>Nomenclature</b>	<b>viii-xii</b>
<b>Chapter I: Introduction</b>	<b>1-38</b>
1.1. Background of the fluid Mechanics	2-8
1.2. Development of Boundary Layer Theory	8-20
1.3. Magnetohydrodynamics	21-24
1.4. Porous Medium	24-29
1.5. Governing Equations	29-30
1.6. Boundary conditions	30-31
1.7. Non-dimensional Quantities	31-34
1.8. Outline of the thesis	35-38
<b>Chapter II: Magnetohydrodynamic Oscillatory Flow in a Planer Porous Channel with Suction and Injection.</b>	<b>39-49</b>
2.1. Introduction	40-44
2.2. Mathematical Analysis	42-44
2.3. Method of Solution	44-45
2.4. Results and Discussion	45-48
2.5. Conclusions	48-49
<b>Chapter III: Analytical Solution for Steady Magnetohydrodynamic mixed Convection Transport in a Porous Media with Thermal Radiation and Ohmic Heating.</b>	<b>50-64</b>
3.1. Introduction	51-53
3.2. Mathematical formulation	53-56
3.3. Method of Solution	56-58

3.4.	Validity	58-59
3.5.	Results and Discussion	59-63
3.6.	Conclusions	64
<b>Chapter IV: Analytical solution for Transient MHD flow through a Darcian porous regime in a Rotating System. 65-82</b>		
4.1.	Introduction	66-68
4.2.	Mathematical Formulation	68-71
4.3.	Method of Solution	71-74
4.4.	Results and Discussion	74-81
4.5.	Conclusions	82
<b>Chapter V: Free Convective Heat Transport in a Porous Media bounded by an isothermal vertical plate with thermal Radiation and Magnetohydrodynamic effects: An Exact Solution. 83-97</b>		
5.1.	Introduction	84-85
5.2.	Mathematical Formulation	86-88
5.3.	Method of Solution	88-89
5.4.	Results and Discussion	89-96
5.5.	Conclusions	96-97
<b>Chapter VI: Laplace Analysis of Periodic Heat and Mass Transport on a Parabolic Started Surface immersed in Darcian Porous Regime. 98-112</b>		
6.1.	Introduction	99-102
6.2.	Mathematical Analysis	102-104
6.3.	Methodology	105-106
6.4.	Validity	107
6.5.	Results and Discussion	107-112
6.6.	Conclusions	112
<b>Chapter VII: Roseland Approximation for Heat generation/absorption on free convective radiating fluid with Soret effect. 113-133</b>		

<b>7.1. Introduction</b>	<b>114-117</b>
<b>7.2. Mathematical Formulation</b>	<b>117-122</b>
<b>7.3. Method of Solution</b>	<b>123-126</b>
<b>7.4. Validity</b>	<b>126</b>
<b>7.5. Results and Discussion</b>	<b>126-132</b>
<b>7.6. Conclusions</b>	<b>133</b>
<b>Chapter VIII: Study of Slip Flow Mixed Convection Chemically Reacting Fluid past a Semi-infinite Vertical Porous Plate with Heat Source.</b>	<b>134-152</b>
<b>8.1. Introduction</b>	<b>135-137</b>
<b>8.2. Mathematical Formulation</b>	<b>137-140</b>
<b>8.3. Method of Solution</b>	<b>140-142</b>
<b>8.4. Validity</b>	<b>142-143</b>
<b>8.5. Results and discussion</b>	<b>144-151</b>
<b>8.6. Conclusions</b>	<b>151-152</b>
<b>Appendix</b>	<b>153-158</b>
<b>Bibliography</b>	<b>159-186</b>