

## CONTENTS

	Page No.
<b>CHAPTER - 1</b>	
<b>Introduction</b>	<b>1 - 14</b>
1.1. Porous ceramics	2
1.2. Absorbent ceramics appliance	3
1.3. Spinel	4
1.4. Warmth and reverberation wadding	5
1.5. Biomaterial/Biomedical	7
1.6. Porous Refractory bricks	9
1.7 Gas sensors	10
1.8 Energy luggage compartment and accretion	12
1.9 Relation distribute between thermal conductivity and porosity	12
1.1 0 Ceramic Membrane	13
<b>CHAPTER - 2</b>	
<b>Literature Survey/Review</b>	<b>15- 20</b>
2.1. Literature Survey	16
2.2. Problem Facing	19
2.3. Objective of The Research work	20
<b>CHAPTER - 3</b>	
<b>Development of Porous MgO by pore forming agent</b>	<b>21- 38</b>
3.1. Preparation of Porous MgO firing temp 1100°C SP 1h	22

3.2. Preparation of Porous MgO firing temp 1200°C SP 1h	23
3.3. Preparation of Porous MgO firing temp 1300°C SP 1h	24
3.4. Preparation of Porous MgO firing temp 1100°C SP 2h	25
3.5. Preparation of Porous MgO firing temp 1200°C SP 2h	26
3.6. Preparation of Porous MgO firing temp 1300°C SP 2h	27
3.7. Measurement of Porous MgO firing temp 1100°C SP 1h	28
3.8. Measurement of Porous MgO firing temp 1200°C SP 1h	29
3.9. Measurement of Porous MgO firing temp 1300°C SP 1h	30
3.10. Measurement of Porous MgO firing temp 1100°C SP 2h	31
3.11. Measurement of Porous MgO firing temp 1200°C SP 2h	32
3.12. Measurement of Porous MgO firing temp 1300°C SP 2h	33
3.13 Chacterisation and pore size distribution of porous MgO	34
3.14 Study the property EX-potato satch	38
<b>CHAPTER – 4</b>	
<b>Synthesis and Characterisation of Porous Spinel by Porous MgO</b>	<b>39 - 64</b>
4.1.Synthesis of Spongy Spinel by Spongy MgO	40
4.2 Characteristics of Spongy Spinel by Spongy MgO	42
<b>CHAPTER – 5</b>	
<b>Study the pore size distribution ,contact angle in different size of pores and kinetics of the porous structure at different solution treatments</b>	<b>65 - 86</b>
5.1. Pore size Distribution	66
5.2 Kinetics of Pore Size Distribution	71
5.3 Porous material in Recuperators in Glass tank Furnance	72

5.4 Drop shape analysis	74
5.5 IL Water and NIL	76
5.6 Failure Analysis	81
<b>CHAPTER – 6</b>	
<b>Study the Graphical views when Transient Pulse are passes through the Porous Media.</b>	<b>87 - 94</b>
6.1 Transient pulse method	88
6.2 Direc Thermal response	90
6.3 Slope Response on porous spinel	90
6.4 Fractal Measurement	92
6.5 Laser passes through the porous media.	93
<b>CHAPTER – 7</b>	
<b>Mathmactical Analysis EP- of Porous Media.</b>	<b>95 - 103</b>
7.1 International Union for Pure and Applied Chemistry : IUPAC	96
7.2 Adsorption and de adsorption isotherm for different solution treatment.	97
<b>CHAPTER – 8</b>	
<b>Synthesis and Characterisation of Porous ZrO<sub>2</sub>-Spinel.</b>	<b>104 - 117</b>
8.1 Synthesis of MgO-Al <sub>2</sub> O <sub>3</sub> -ZrO <sub>2</sub>	105
8.2 Characteristics of MgO-Al <sub>2</sub> O <sub>3</sub> -ZrO <sub>2</sub>	106
<b>CHAPTER – 9</b>	
<b>Comparatively study of Spinel , ZrO<sub>2</sub>-Spinel, Porous Spinel,Porous ZrO<sub>2</sub>-Spinel.</b>	<b>118 - 126</b>
9.1Comparatively study of Bulk Density and Apparent porosity SP,ZSP.PSP.ZPSP	119
9.2 Corrosion action	120
9.3 Thermal Behaviour	121

9.4 Failure Probability	126
Conclusions	127
Future work	130
<b>References</b>	<b>131 - 137</b>
<b>List of Publications</b>	