Contents

		Page
Abstract		(3)
Acknowledg	gement	(6)
Contents		(7)
List of Tabl	es	(9)
List of Figu	res	(11)
Chapter		
1. Introduction		1
1	. Backgrounds	1
2	2. Previous Researchers	2
3	3. Objectives	8
4	Possible Achievements	8
5	5. Contents of Research	8
2. Theory		9
1	. Fluid Catalytic Cracking Unit	9
2	2. Catalyst	11
3	3. Hydrocarbon Classification	12
4	d. Gasoline Octane	16
5	5. Zeolite	18
6	5. Application of Zeolite	21
7	7. NaY Zeolite	24
8	3. USY Zeolite	25
9	P. REY Zeolite	25
1	0. ZSM-5 Zeolite	27
1	1. Zeolite Properties	28
1	2. Matrix	32
1	3. Active Site	38
1	4. Composition and Classification of FCC Catalyst	40
1	5. Mechanism of Catalytic Cracking Reaction	43

Contents (Continued)

		Page
3. Exper	imentation	49
	1. Feedstock	49
	2. Equipment	49
	3. Instrument	50
	4. Chemical and Reagent	50
	5. Experiment and Procedure	51
	6. Preparation of Catalysts	57
	7. Test procedure and Test Conditions	60
4. Results and Discussion		68
	1. NaY Zeolite	68
	2. Preparation of USY, REY and ZSM-5 Zeolite	69
	3. Catalyst Preparation	70
	4. Evaluation of Catalysts Performance	71
	5. Catalytic Cracking of n-Octane on REY and USY Zeolite	73
	6. Catalytic Cracking of n-Octane on Mixed Zeolite Catalyst	83
	7. Catalytic Cracking of n-Hexadecane on Mixed Zeolite	92
	Catalyst	
5. Concl	usions	97
Bibliogra	aphy	99
Appendi	x	
	A – The Acid Digestion Process for Zeolite	103
	B – Preparation of Zeolite and Catalysts	104
	C – Hydrothermal Deactivation	108
	D – Instrumental Methods of Cracking Catalyst	111
	E – Diffraction Analysis by X-ray Diffractometer	119
	F – Calculation of the Research Octane Number from	129
	Gas Chromatographic Data	
	G – Experimental Data	133
Vitae		138