

Characterization And Design Of Zeolite Catalysts

[DOWNLOAD HERE](#)

1;Preface;6 2;Contents;8 3;Chapter 1 Introduction to Zeolite Science and Catalysis;12 3.1;1.1 General Trend of the Zeolite Acid Catalyst: Species, Structure, and Industrial Application;12 3.2;1.2 Property of Zeolite Catalyst: Acidity, Shape Selectivity, and Loading Property;16 3.3;1.3 Intention of the Publication with the Background of the Zeolite Chemistry;17 3.4;References;19 4;Chapter 2 Solid Acidity of Zeolites;20 4.1;2.1 Multiple Characterization Techniques;20 4.1.1;2.1.1 Physical Properties;20 4.1.2;2.1.2 Chemical Properties;21 4.2;2.2 Fundamentals for the TPD of Ammonia;22 4.2.1;2.2.1 Experimental Apparatus of the TPD Method;22 4.2.2;2.2.2 Identification of the Desorption, I- and h-Peaks;24 4.2.3;2.2.3 Identification of Ammonia Desorbed from Y Zeolite;25 4.3;2.3 Theory for the TPD of Ammonia;26 4.3.1;2.3.1 Conditions of the Equilibrium;26 4.3.2;2.3.2 Derivation of a Fundamental Equation;28 4.3.3;2.3.3 Determination of ΔH and Constancy of ΔS (Desorption);30 4.4;2.4 Practical Measurements of Ammonia TPD;31 4.4.1;2.4.1 Curve Fitting Method to Measure the Strength of Acid Site;31 4.4.2;2.4.2 ΔH on Various Zeolites with Different Concentrations of Acid Site;32 4.5;2.5 Number of Acid Sites on Various Zeolites;35 4.5.1;2.5.1 Number of Acid Sites Correlated with Al Concentration;35 4.5.2;2.5.2 In Situ and Ex Situ Prepared H-type Zeolites;37 4.6;References;38 5;Chapter 3 IRMS-TPD Measurements of Acid Sites;39 5.1;3.1 Measurement Method;39 5.1.1;3.1.1 What Is Obtained from the TPD Measurement;39 5.1.2;3.1.2 Experimental Methods;39 5.1.3;3.1.3 Required Corrections, IR Band Position and S ;41 5.2;3.2 Proton Form Zeolite;42 5.2.1;3.2.1 H-Mordenite;42 5.2.2;3.2.2 H-Y and H-Chabazite;44 5.3;3.3 Modified Zeolites;49 5.3.1;3.3.1 Multivalent Cation-Modified Zeolite;49 5.3.2;3.3.2 Ultrastable Y (USY) Zeolite;51 5.4;3.4 Distribution of Brnsted Acid Sites Dependent on the Concentration;53 5.5;3.5 Relationship Between Stretching Frequency and Ammonia Desorption Heat of OH Group;55 5.6;3.6 Distorted Structure of Zeolite and Related Material with Lewis Acidity and Broad Distribution of Acid Strength;57 5.7;3.7 Measurements of Metal Oxide Overlayer;62 5.8;3.8 Extinction Coefficients of NH_4^+ and NH_3 Adsorbed on Brnsted and Lewis Acid Sites, Respectively;65 5.9;References;69 6;Chapter 4 DFT Calculation of the Solid Acidity;70 6.1;4.1 DFT Calculation;70 6.1.1;4.1.1 DFT Calculation Applied to the Study on Brnsted Acidity;70 6.1.2;4.1.2 Embedded Cluster and

Periodic Boundary Conditions;71 6.2;4.2 Application to Chabazite, a Simple Zeolite;72 6.2.1;4.2.1 Brnsted Acid Sites in Chabazite Based on the Models Within the Periodic Boundary Conditions;72 6.2.2;4.2.2 Brnsted Acid Site in an Embedded Cluster Model;74 6.3;4.3 Application to Other Zeolites;74 6.3.1;4.3.1 FAU, MOR, and BEA Calculated Under the Conditions of the Embedded Cluster and the Periodic Boundary;74 6.3.2;4.3.2 MFI, FER, and MWW Calculated Under the Embedded Cluster Model;76 6.4;4.4 Modified Zeolites;78 6.4.1;4.4.1 Divalent Cation-Exchanged Y Zeolites Based on the Embedded Cluster Model;78 6.4.2;4.4.2 Modified Brnsted OH in Y Zeolite Based on the Periodic Boundary Conditions;80 6.5;4.5 Dependence of Brnsted Acid Strength on Local Geometry;81 6.6;References;87 7;Chapter 5 Catalytic Activity and Adsorption Property;88 7.1;5.1 Paraffin Cracking;88 7.1.1;5.1.1 Evaluation of Intrinsic Activity of Acid Site;88 7.1.2;5.1.2 Dependence of Activity on Acid Strength;90 7.1.3;5.1.3 Thermodynamic Description on Correlation Between Activation Energy and Ammonia Desorption Heat;95 7.1.4;5.1.4 Behavior of Acid Sites in 8- and 12-Rings of Mordenite;97 7.2;5.2 Adsorption of Aromatic Hydrocarbons;98 7.3;5.3 Friedel-Crafts Alkylation on Ga-MCM-41;102 7.4;5.4 Amination of Phenol into Aniline on Ga/ZSM-5;106 7.5;References;109 8;Chapter 6 CVD of Silica for the Shape Selective Reaction;111 8.1;6.1 Reactants and Products Shape Sel EAN/ISBN : 9783642126208 Publisher(s): Springer, Berlin Discussed keywords: Katalysator, Zeolith Format: ePub/PDF Author(s): Niwa, Miki - Katada, Naonobu - Okumura, Kazu

[DOWNLOAD HERE](#)

Similar manuals:

[CIA - Ein Katalysator Für Den Vormarsch Der Radikal Islamistischen Ideologie?: Islamismus - Denny Bellin](#)

[Die Finanzmarktkrise Als Katalysator Des Wandels Im Tourismus? - Mathias Welsch](#)

[Die Literatur Des Vormärz: Spiegel Der Unruhen Und Katalysator Der Revolution? - Verena Schneider](#)

[Unterrichtsstunde: Ermittlung Der Katalysatorfunktion Der Urease Beim Enzymatischen Abbau Von Urease \(11. Klasse Gymnasium\) - Robert Kirchner](#)