

## Subject Index

### A

- Absorption coefficients of pyridine adsorbed on Lewis and Bronsted acid sites, The ratio of, JOHN W. WARD, 271
- Acetylene. Studies of silica-supported metal chloride catalysts for the vapor-phase hydrochlorination of, D. M. SMITH, P. M. WALSH AND T. L. SLAGER, 113
- Acid sites. The effect of faujasite cations on, ALFRED E. HIRSCHLER, 274
- Acid sites. The effect of faujasite cations on, JAMES T. RICHARDSON, 275
- Acid sites. The ratio of absorption coefficients of pyridine adsorbed on Lewis and Bronsted, JOHN W. WARD, 271
- Acidity of stabilized hydrogen Y zeolite. Influence of calcination temperature on the structural hydroxyl groups and, JOHN W. WARD, 251
- Acidity of X and Y type zeolites. The influence of water on the, JOHN W. WARD, 238
- Adsorption and reaction of methylchlorosilanes at an "Aerosil" surface. B. EVANS AND T. E. WHITE, 336
- Adsorption of C-14 labeled formic acid on silver films of small area. A. LAWSON, 283
- Adsorption of triatomic molecules. Statistics of site trapping in, IAN D. GAY, 180
- Aerosil. The influence of the geometrical factor on the t-curve measured on, J. H. DE BOER AND B. G. LINSEN, J. C. P. BROEKHOFF AND TH. J. OSINGA, 46
- "Aerosil" surface. Adsorption and reaction of methylchlorosilanes at an, B. EVANS AND T. E. WHITE, 336
- Alcohols. Calcium-oxide-catalyzed reactions of hydrocarbons and of, Y. SCHACTER AND HERMAN PINES, 147
- Alkylation over a crystalline aluminosilicate. Paraffin-olefin, W. E. GARWOOD AND P. B. VENUTO, 175
- Aluminosilicate. Paraffin-olefin alkylation over a crystalline, W. E. GARWOOD AND P. B. VENUTO, 175
- Ammonia. Kinetic isotope effects in the catalytic synthesis of, S. R. LOGAN AND J. PHILP, 1
- Ammonia catalysts. Interaction of nitrogen and carbon monoxide on iron synthetic, NOBUTSUNE TAKEZAWA AND P. H. EMMETT, 131
- Aromatic-alkali metal charge-transfer complexes. Hydrogen exchange on, NOBUYUKI WAKAYAMA AND HIROO INOKUCHI, 143
- Author Index, 380

### B

- Basicity and hydrocarbon selectivity in the Fischer-Tropsch synthesis. The correlation between catalyst surface, M. E. DRY AND G. J. OOSTHUIZEN, 18
- Book Review. "An Investigation on Promoted Iron Catalyst for the Synthesis of Ammonia," by ANDERS NIELSEN, reviewed by J. J. F. SCHOLTEN, 280
- Book Review. "Experimental Magnetochemistry Subtitle-Nonmetallic Magnetic Materials" MICHAEL M. SCHIEBER, reviewed by P. W. SELWOOD, 281
- Book Review. "Fundamental of Gas-Surface Interactions" Edited by H. SALTBURG, J. N. SMITH, Jr., and M. ROGERS, reviewed by ROBERT P. MERRILL, 89
- Book Review. "The Stereochemistry of Macromolecules, Vol. 1 and 2" edited by A. D. KETLEY, reviewed by MAURICE L. HUGGINS, 184
- 1-2 Butene isomerization of violanthrene A-iodine charge-transfer complexes. M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81

### C

- C-14 labeled formic acid on silver films of small area. Adsorption of, A. LAWSON, 283
- Calcination temperature on the structural hydroxyl groups and acidity of stabilized hydrogen Y zeolite. JOHN W. WARD, 251
- Calcium-oxide-catalyzed reactions of hydrocarbons and of alcohols. Y. SCHACTER AND HERMAN PINES, 147
- Carbon dioxide to methane. Specific catalytic activity of nickel in hydrogenation of, J. MÜLLER, V. POUR, AND A. REGNER, 326
- Carbon monoxide on iron synthetic ammonia catalysts. Interaction of nitrogen and, NOBUTSUNE TAKEZAWA AND P. H. EMMETT, 131
- Cesium azide. The influence of semiconducting oxides on the thermal decomposition of, Y. SEARS AND M. STEINBERG, 25
- Charge-transfer complexes. 1-2 butene isomerization of violanthrene A-iodine, M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81
- Charge-transfer complexes. Hydrogen exchange on aromatic-alkali metal, NOBUYUKI WAKAYAMA AND KIROO INOKUCHI, 143
- Chemisorption of hydrogen sulphide on supported nickel catalyst, J. R. ROSTRUP-NIELSEN, 220

Chromia-silica-alumina polymerization catalyst. Inhibition of, C. EDEN, H. FEILCHENFELD AND Y. HAAS, 263

Cobalt (II) complexes. Hydrogenation of conjugated diolefins with, YOSHIO TAJIMA AND ESTUO KUNIOKA, 83

Compensation effect during formic acid decomposition on silver. Factors influencing the, A. LAWSON, 295

Contact potential method. Some electric properties of nickel-chromia catalyst studied by, D. TARINA, E. WEISSMANN, AND D. BARB, 348

Cumene on vanadium oxide. Reaction pattern of vapor phase oxidation of, L. ZANDERIGHI, P. SCHWARZ AND S. CARRA, 187

Cumene over silica-alumina. Effects of metal acetate salts on the catalytic cracking of, TOMLINSON FORT, JR. AND EUGENE NEBESH, 91

Cyclohexane on a hydrogen-porous membrane. Dehydrogenation of, BERNARD J. WOOD, 30

Cyclohexanes. Reactivity of ring hydrogens in catalytic dehydrogenation of, T. HISHIDA, T. UCHIJIMA AND YUKIO YONEDA, 71

## D

Dehydrogenation of cyclohexane on a hydrogen-porous membrane. BERNARD J. WOOD, 30

Dehydrogenation of cyclohexanes. Reactivity of ring hydrogens in, T. HISHIDA, T. UCHIJIMA AND YUKIO YONEDA, 71

Diffusion regime for nth order reactions. Apparent kinetics and catalyst poisoning in strong pore, R. TARTARELLI AND F. MORELLI, 159

Diolefins with cobalt (II) complexes. Hydrogenation of conjugated, YOSHIO TAJIMA AND ESTUO KUNIOKA, 83

## E

Electric properties of nickel-chromia catalyst studied by contact potential method. D. TARINA, E. WEISSMANN, AND D. BARB, 348

ESR evidence of hydrogen migration on supported metal catalysts. K. M. SANCIER AND S. H. INAMI, 135

ESR of the oxygen adsorbed on supported vanadium pentoxide. V. A. SHVETS, M. E. SARICHEV AND V. B. KASANSKY, 378

ESR studies on  $ZnO-Cr_2O_3$  catalysts. M. RÁLEK, W. GUNSSER AND A. KNAPPWOST, 317

Ethylene on pure zinc oxide. Poisoning effect of ethylene. Mechanism of the hydrogenation of, F. BOZON-VERDURAZ AND S. J. TEICHNER, 7

## F

Faujasite cations on acid sites. The effect of, ALFRED E. HIRSCHLER, 274

Faujasite cations on acid sites. The effect of, JAMES T. RICHARDSON, 275

Fe-Mo catalyst for methanol oxidation. Nature of active sites on an, P. JIRU, B. WICHTERLOVA, M. KRIVANEK AND J. NOVAKOVA, 182

Ferromagnetic resonance determination of nickel-hydrogen magnetization-volume adsorption isotherms. P. W. SELWOOD AND A. A. ANDREEV, 261

Films of titanium and other metals. Reactions of methyl chloride and of methylene chloride at, J. R. ANDERSON, AND B. H. McCONKEY, 54

Fischer-Tropsch synthesis. The correlation between catalyst surface basicity and hydrocarbon selectivity in the, M. E. DRY AND G. J. OOSTHUIZEN, 18

Formic acid decomposition on silver. Factors influencing the compensation effect during, A. LAWSON, 295

Formic acid on silver films of small area. Adsorption of C-14 labeled, A. LAWSON, 283

## G

Geometrical factor on the t-curve measured on aerosil. The influence on the, J. H. DE BOER AND B. G. LINSEN, J. C. P. BROEKHOFF AND TH. J. OSINGA, 46

## H

Hydrocarbon selectivity in the Fischer-Tropsch synthesis. The correlation between catalysts surface basicity and, M. E. DRY AND G. J. OOSTHUIZEN, 18

Hydrocarbons and of alcohols. Calcium-oxide-catalyzed reactions of, Y. SCHACTER AND HERMAN PINES, 147

Hydrochlorination of acetylene. Studies of silica-supported metal chloride catalysts for the vapor-phase, D. M. SMITH, P. M. WALSH AND T. L. SLAGER, 113

Hydrogen exchange on aromatic-alkali metal charge-transfer complexes. NOBUYUKI WAKAYAMA AND HIROO INOKUCHI, 143

Hydrogen migration on supported metal catalysts. ESR evidence of, K. M. SANCIER AND S. H. INAMI, 135

Hydrogen-porous membrane. Dehydrogenation of cyclohexane on a, BERNARD J. WOOD, 30

Hydrogen sulphide on supported nickel catalysts. Chemisorption of, J. R. ROSTRUP-NIELSEN, 220

Hydrogen transfer between cyclohexane and benzene. Catalytic, G. PARRAVANO, 269

Hydrogen Y zeolite. Influence of calcination temperature on the structural hydroxyl groups and acidity of, JOHN W. WARD, 251

Hydrogen Y zeolite during cumene cracking. In-situ spectroscopic observations of, JOHN W. WARD, 259

Hydrogenation of carbon dioxide to methane. Specific catalytic activity of nickel in, J. MÜLLER, V. POUR, AND A. REGNER, 326

Hydrogenation of conjugated diolefins with cobalt (II) complexes. YOSHIO TAJIMA AND ESTUO KUNIOKA, 83

Hydrogenation of ethylene on pure zinc oxide. Poisoning effect of ethylene. Mechanism of the, F. BOZON-VERDURAZ AND S. J. TEICHNER, 7

**I**

Inhibition of silica-alumina-chromia polymerization catalysts. C. EDEN, H. FEILCHENFELD AND Y. HAAS, 263

Iridium, and ruthenium chlorides. Thermal decomposition of rhodium, A. E. NEWKIRK AND D. W. MCKEE, 370

Iron synthetic ammonia catalysts. Interaction of nitrogen and carbon monoxide on, NOBUTSUNE TAKEZAWA AND P. H. EMMETT, 131

Isomerization of alkylbenzenes over solid acid catalyst. Linear free energy relationships in heterogeneous catalysis. VIII, H. MATSUMOTO, J. TAKE AND Y. YONEDA, 211

Isomerization of violanthrene A-iodine charge-transfer complexes. 1-2 butene, M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81

Isotope effects in the catalytic synthesis of ammonia. Kinetic, S. R. LOGAN AND J. PHILP, 1

**K**

Kraus on "Linear correlations of substrate reactivity in heterogeneous catalytic reactions." A comment on the work by, ISAO MOCHIDA AND YUKIO YONEDA, 183

**L**

Linear free energy relationships in heterogeneous catalysis. VIII. Isomerization of alkylbenzenes over solid acid catalyst, H. MATSUMOTO, J. TAKE AND Y. YONEDA, 211

Linear free energy relationships to heterogeneous catalysis. Application of, IRVING J. DUNN, 79

Linear free energy relationships in heterogeneous catalysis. T. HISHIDA, T. UCHIJIMA AND YUKIO YONEDA, 71

**M**

Mass transfer in porous media. Application of the single pellet reactor for mass transfer studies I. J. R. BALDER AND E. E. PETERSEN, 195, 202

Metal acetate salts on the catalytic cracking of cumene over silica-alumina. Effect of, TOMLINSON FORT, JR. AND EUGENE NEBESH, 91

Metal catalysts. ESR evidence of hydrogen migration on supported, K. M. SANCIER AND S. H. INAMI, 135

Metal chloride catalysts for the vapor-phase hydrochlorination of acetylene. Studies of silica-supported, D. M. SMITH, P. M. WALSH AND T. L. SLAGER, 113

Metal oxide catalysts. Reduction studies on supported, VERNON C. F. HOLM AND ALFRED CLARK, 305

Methanol oxidation. Nature of active sites on an Fe-Mo catalyst for, P. JIRU, B. WICHTERLOVA, M. KRIVANEK AND J. NOVAKOVA, 182

Methyl chloride and of methylene chloride at metal surfaces. Reactions of, J. R. ANDERSON, AND B. H. MC CONKEY, 54

Methylchlorosilanes at an "Aerosil" surface. Adsorption and reaction of, B. EVANS AND T. E. WHITE, 336

Methylene chloride at metal surfaces. Reactions of methyl chloride and of, J. R. ANDERSON, AND B. H. MC CONKEY, 54

**N**

$\text{NH}_4\text{Y}$  zeolite. Stoichiometry of thermochemical transformations of, JOHN CATTANACH, ELLEN L. WU AND PAUL B. VENUTO, 342

Nickel catalysts. Chemisorption of hydrogen sulphide on supported, J. R. ROSTRUP-NIELSEN, 220

Nickel-chromia catalyst studied by contact potential method. Some electric properties of, D. TARINA, E. WEISSMANN, AND D. BARB, 348

Nickel-hydrogen magnetization-volume adsorption isotherms. Ferro-magnetic resonance determination of, P. W. SELWOOD AND A. A. ANDREEV, 261

Nickel in hydrogenation of carbon dioxide to methane. Specific catalytic activity of, J. MÜLLER, V. POUR, AND A. REGNER, 326

$\text{NiO-O}_2$  system. Reactivity inversion in the, G. PARRAVANO, 355

Nitrogen and carbon monoxide on iron synthetic ammonia catalysts. Interaction of, NOBUTSUNE TAKEZAWA AND P. H. EMMETT, 131

**O**

On the mechanism of the disproportionation of olefins, J. C. MOL, J. A. MOULIJN, C. BOELHOUWER, 87

Organic semiconductors. Catalytic behaviour of, M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81

Organic semiconductors. Hydrogen exchange on aromatic-alkali metal charge-transfer complexes. Catalytic behaviour of, NOBUYUKI WAKAYAMA AND HIROO INOKUCHI, 143

Oxidation of cumene on vanadium oxide. Reaction pattern of vapor phase, L. ZANDERIGHI, P. SCHWARZ AND S. CARRA, 187

Oxidations with sulfur dioxide. I. Exploratory studies. Catalytic, C. R. ADAMS, 96

Oxygen adsorbed on supported vanadium pentoxide. The ESR of the, V. A. Shvets, M. F. SARICHEV AND V. B. KASANSKY, 378

Oxygen on titanium dioxide. Photoadsorption and photodesorption of, Sogo FUKUZAWA, KENNETH M. SANCIER AND TAKAO KWAN, 364

Oxygen transfer between CO and CO<sub>2</sub> on TiO<sub>2</sub>, D. Y. CHA AND G. PARRAVANO, 228

## P

Paraffin-olefin alkylation over a crystalline aluminosilicate, W. E. GARWOOD AND P. B. VENUTO, 175

Paramagnetic surface species during the oxidation of non-stoichiometric TiO<sub>2</sub> (A), SnO<sub>2</sub>, ZnO. Formation of, J. H. C. VAN HOFF, 277

Photoadsorption and photodesorption of oxygen on titanium dioxide. Sogo FUKUZAWA, KENNETH M. SANCIER AND TAKAO KWAN, 364

Platinum. An x-ray absorption edge study of zeolite-supported, P. H. LEWIS, 162

Platinum catalysts. On the selectivity of, M. BOUDART, A. W. ALDAG, L. D. PTAK AND J. E. BENSON, 35

Poisoning in strong pore diffusion regime for nth order reactions. Apparent kinetics and catalyst, R. TARTARELLI AND F. MORELLI, 159

Polymerization catalysts. Inhibition of silica-alumina-chromia, C. EDEN, H. FEILCHENFELD AND Y. HAAS, 263

Pore diffusion regime for nth order reactions. Apparent kinetics and catalyst poisoning in strong, R. TARTARELLI AND F. MORELLI, 159

Pore systems in catalysts. Studies on, XV. J. H. DE BOER AND B. G. LINSEN, J. C. P. BROEKHOFF AND TH. J. OSINGA, 46

Pyridine adsorbed on Lewis and Bronsted acid sites. The ratio of absorption coefficients of, JOHN W. WARD, 271

## R

Reaction probabilities of methane and oxygen on (III) silicon single-crystal surfaces. E. J. NOWAK, J. M. DECKERS AND M. BOUDART, 177

Reactivity inversion in the NiO-O<sub>2</sub> system. G. PARRAVANO, 355

Reduction studies on supported metal oxide catalyst. VERNON C. F. HOLM, AND ALFRED CLARK, 305

Rhodium, iridium, and ruthenium chlorides. Thermal decomposition of, A. E. NEWKIRK AND D. W. MCKEE, 370

Ruthenium chlorides. Thermal decomposition of rhodium, iridium, and, A. E. NEWKIRK AND D. W. MCKEE, 370

## S

Selectivity of platinum catalysts. On the, M. BOUDART, A. W. ALDAG, L. D. PTAK AND J. E. BENSON, 35

Semiconducting oxides on the thermal decomposition of cesium azide. The influence of, Y. SEARS AND M. STEINBERG, 25

Semiconductors. Catalytic behaviour of organic, M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81

Silica-alumina. Effects of metal acetate salts on the catalytic cracking of cumene over, TOMLINSON FORT, JR. AND EUGENE NEBESH, 91

Silica-alumina-chromia polymerization catalysts. Inhibition of, C. EDEN, H. FEILCHENFELD AND Y. HAAS, 263

Silica-supported metal chloride catalysts for the vapor-phase hydrochlorination of acetylene. Studies of, D. M. SMITH, P. M. WALSH AND T. L. SLAGER, 113

Silicon single-crystal surfaces. Reaction probabilities of methane and oxygen on (III), E. J. NOWAK, J. M. DECKERS AND M. Boudart, 177

Silver. Factors influencing the compensation effect during formic acid decomposition on, A. LAWSON, 295

Silver films of small area. Adsorption of C-14 labeled formic acid on, A. LAWSON, 283

Single pellet reactor for mass transfer studies I. Application of the, J. R. BALDER AND E. E. PETERSEN, 195

SnO<sub>2</sub>, ZnO. Formation of paramagnetic surface species during the oxidation of non-stoichiometric TiO<sub>2</sub> (A), J. H. C. VAN HOFF, 277

Spectroscopic observations of hydrogen Y zeolite during cumene cracking. In-situ, JOHN W. WARD, 259

Statistics of site trapping in adsorption of triatomic molecules. IAN D. GAY, 180

Stoichiometry of thermochemical transformations of NH<sub>4</sub>Y zeolite, JOHN CATTANACH, ELLEN L. WU AND PAUL B. VENUTO, 342

Subject Index, 382

Sulfur dioxide. Catalytic oxidations with. I. Exploratory studies. C. R. ADAMS, 96

## T

Thermal decomposition of rhodium, iridium, and ruthenium chlorides. A. E. NEWKIRK AND D. W. MCKEE, 370

Thermochemical transformations of NH<sub>4</sub>Y zeolite. Stoichiometry of, JOHN CATTANACH, ELLEN L. WU AND PAUL B. VENUTO, 342

- TiO<sub>2</sub>. Catalytic oxygen transfer between Cl and CO<sub>2</sub> on, D. Y. CHA AND G. PARRAVANO, 228
- TiO<sub>2</sub> (A), SnO<sub>2</sub>, ZnO. Formation of paramagnetic surface species during the oxidation of non stoichiometric, J. H. C. VAN HOFF, 277
- Titanium and other metals. Reactions of methyl chloride and of methylene chloride at evaporated films of, J. R. ANDERSON, AND B. H. McCONKEY, 54
- Titanium dioxide. Photoadsorption and photodesorption of oxygen on, SOGO FUKUZAWA, KENNETH M. SANCIER AND TAKAO KWAN, 364

**V**

- Vanadium oxide. Reaction pattern of vapor phase oxidation of cumene on, L. ZANDERIGHI, P. SCHWARZ AND S. CARRA, 187
- Vanadium pentoxide. The ESR of the oxygen adsorbed on supported, V. A. SHVETS, M. E. SARICHEV AND V. B. KASANSKY, 378
- Violanthrene A-iodine charge-transfer complexes. 1-2 butene isomerization of, M. TSUDA, T. KONDOW, H. INOKUCHI AND H. SUZUKI, 81

**W**

- Water on the acidity of X and Y type zeolites. The influence of, JOHN W. WARD, 238

**X**

- X-ray absorption edge study of zeolite-supported platinum. An, P. H. LEWIS, 162
- X-ray diffraction studies of mixed oxide catalysts. RICHARD M. LEVY, 266

**Z**

- Zeolite. Stoichiometry of thermochemical transformations of NH<sub>4</sub>Y, JOHN CATTANACH, ELLEN L. WU AND PAUL B. VENUTO, 342
- Zeolite. The influence of calcination temperature on the structural hydroxyl groups and acidity of stabilized hydrogen Y, JOHN W. WARD, 251
- Zeolite during cumene cracking. In-situ spectroscopic observations of hydrogen Y, JOHN W. WARD, 259
- Zeolites. The influence of water on the acidity of X and Y type, JOHN W. WARD, 238
- Zeolite-supported platinum. An x-ray absorption edge study of, P. H. LEWIS, 162
- Zinc oxide poisoning effect of ethylene. Mechanism of the hydrogenation of ethylene on pure, F. BOZON-VERDURAZ AND S. J. TEICHNER, 7
- ZnO. Formation of paramagnetic surface species during the oxidation of non stoichiometric TiO<sub>2</sub> (A), SnO<sub>2</sub>, J. H. C. VAN HOFF, 277
- ZnO-Cr<sub>2</sub>O<sub>3</sub> catalysts. ESR studies on, M. RALEK, W. GUNSSER, AND A. KNAPPWOST, 317