

Subject Index

A

- Acetone over Raney nickel catalysts. Kinetics of liquid-phase hydrogenation of, SANAE KISHIDA AND SHIICHIRO TERANISHI, 90
- Acetylene. Hydrogenation of alumina-supported ruthenium and osmium. G. C. BOND, G. WEBB AND P. B. WELL, 157
- Acid sites on cationized zeolites characterized by infrared. H. HATTORI AND T. SHIBA, 111
- Acidity measurements and correlation with catalyst activity. High-temperature, R. A. HILDEBRANDT AND HERTHA SKALA, 61
- Adsorption and desorption from adsorption-time curves. A practical method for the evaluation of the net rates of, Y. AMENOMIYA, 410
- Adsorption and retention of hydrocarbons by alumina-supported palladium catalyst. G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 150
- Adsorption of benzene and methylbenzenes on cobalt and rhodium catalysts. Comparative hydrogenation and, J. VÖLTER, M. HERMANN, AND K. HEISE, 307
- Alcohols over alumina. Dehydration of, HELMUT KNÖZINGER, HORST BÜHL AND EINHARD RESS, 121
- Aliphatic alcohols on ferric oxide. Kinetic investigation of the formation of benzene on heating long-chain ($n\text{-C}_7\text{-}n\text{-C}_{18}$). A. K. GALWEY, 352
- Alkyl iodides. The catalytic exchange of iodine in, R. A. MORRISON AND K. A. KRIEGER, 25
- Alumina. Dehydration of alcohols over, HELMUT KNÖZINGER, HORST BÜHL AND EINHARD RESS, 121
- Alumina. Deuteration and exchange reactions of ethylene on, Y. AMENOMIYA, 198
- Alumina. Nature of catalytically active sites in fluorided, T. V. ANTIPINA, 108
- Ammonia chemisorption sites on fluorinated porous silica glass. N. W. CANT AND L. H. LITTLE, 134
- Ammoxidation of propylene in the absence of gaseous oxygen. Reduction of $\text{Bi}_2\text{O}_3\text{-MoO}_3$ catalyst during the, KAMRAN AYKAN, 281
- Aromatics-alkali metal complexes. Reactivity and valency of semiconducting, HOROO INOKUCHI, NOBUYUKI WAKAYAMA AND YOSHIHIRO MORI, 15

B

- Back-diffusion upon rate constant determinations. The effect of, NICOLAE PALIBRODA, ALEXANDRU OLARIU, AND PETRU MARGINEAN, 347
- Benzene and methylbenzenes on cobalt and rhodium catalysts. Comparative hydrogenation and ad-

- sorption of, J. VÖLTER, M. HERMANN, AND K. HEISE, 307
- Benzene formation on heating long-chain ($n\text{-C}_7\text{-}n\text{-C}_{18}$) saturated aliphatic alcohols on ferric oxide. A. K. GALWEY, 352
- Benzene with hydrogen. The specific activity of technetium, rhenium, ruthenium, platinum and palladium in catalytic reactions of, HELENA KUBICKA, 223
- Benzene with protium and deuterium on copper-nickel films with known surface composition. Interaction of, P. VAN DER PLANK AND W. M. H. SACHTLER, 35
- $\text{Bi}_2\text{O}_3\text{-MoO}_3$ catalyst during the ammoxidation of propylene in the absence of gaseous oxygen. Reduction of, KAMRAN AYKAN, 281
- Bismuth molybdate catalyst IV. The catalytic oxidation of 1-butene over, PH. A. BATIST, A. H. W. M. DER KINDEREN, YVONNE LEEUWENBURGH, FRANCIEAN A. M. G. METZ AND G. C. A. SCHUIT, 45
- n -Butene isomerization on acidic ion-exchange resin. D. KALLÓ AND I. PRESZLER, 1
- 1-Butene isomerization on alumina at 510-550°C. Kinetic study of, L. FORNI, L. ZANDERIGHI, AND S. CARRÁ, 298
- 1-Butene over bismuth molybdate catalysts IV. The catalytic oxidation of, PH. A. BATIST, A. H. W. M. DER KINDEREN, YVONNE LEEUWENBURGH, FRANCIEAN A. M. G. METZ AND G. D. A. SCHUIT, 45
- tert-Butylbenzene on silica-alumina. Investigation of reactions in the adsorbed layer. YUTAKA KUBOKAWA, HISASHI MIYATA, AND MITSUHIKO MINOBE, 317
- Book review. "Kinetics of Chemical Processes" MICHAEL BOUDART. Reviewed by ALFRED CLARK, 110
- Book reviews, 110

C

- Chemisorbed O^- Ion. Crystal field effects in a, REINER KOLLRACK, 321
- Chemisorption rates by chromatography. GUNTER PADBERG AND J. M. SMITH, 172
- Chromatography. Chemisorption rates by, GUNTER PADBERG AND J. M. SMITH, 172
- Chromia and chromia-alumina catalysts by adsorbates. Modification of the activity of, J. C. KURIAKOSE, C. DANIEL AND R. SWAMINATHAN, 19
- Chromia-alumina catalyzed dehydrogenation of cyclohexane. Metal chloride promotion and

- deactivation of, RUSSELL MAATMAN, RONALD BLANKESPOOR, KEITH LIGTENBERG, AND HAROLD VERHAGE, 398
- Chromia supported on α -alumina. Hydrogen adsorption and parahydrogen conversion over, P. W. SELWOOD, 263
- Chromium oxide and other metal oxide catalysts. The oxidation of CO by O₂ and by NO on supported, M. SHELEF, K. OTTO, and H. GANDHI, 361
- CO by O₂ and by NO on supported chromium oxide and other metal oxide catalysts. The oxidation of, M. SHELEF, K. OTTO, AND H. GANDHI, 361
- Cobalt and rhodium catalysts. Comparative hydrogenation and adsorption of benzene and methylbenzenes on, J. VÖLTER, M. HERMANN, AND K. HEISE, 307
- Cobalt-molybdenum system. Product distribution in propylene oxidation over the, YOSHIHIKO MORO-OKA, SYOJI TAN, AND ATSUMU OZAKI, 291
- Copper-nickel films with known surface composition. Interaction of benzene with protium and deuterium on, P. VAN DER PLANK AND W. M. H. SACHTLER, 35
- Cracking activity of some synthetic zeolites and the nature of the active sites. P. DONALD HOPKINS, 325
- Cracking with molecular sieve catalysts. The chemistry of catalytic, CHARLES L. THOMAS AND DAVID S. BARMBY, 341
- Crystal field effects in a chemisorbed O⁻ Ion. REINER KOLLRACK, 321
- Cumene to α -methylstyrene over high-purity ZnO. The dehydrogenation of, B. S. FARBER, S. D. ABBOTT, C. S. GIAM AND J. H. LUNSFORD, 210
- Cyclohexane. Metal chloride promotion and deactivation of chromia-alumina catalyzed dehydrogenation of, RUSSELL MAATMAN, RONALD BLANKESPOOR, KEITH LIGTENBERG, AND HAROLD VERHAGE, 398
- Cyclohexanone, cyclohexanol and cyclonexane. Dehydrogenation over nickel-tin silica. HAROLD E. SWIFT AND JOHN E. BOZIK, 5
- D**
- Dehydration of alcohols over alumina. HELMUT KNÖZINGER, HORST BÜHL AND EINHARD RESS, 121
- Dehydrogenation of cumene to α -methylstyrene over high-purity ZnO. B. S. FARBER, S. D. ABBOTT, C. S. GIAM AND J. H. LUNSFORD, 210
- Dehydrogenation of cyclohexane. Metal chloride promotion and deactivation of chromia-alumina catalyzed, RUSSELL MAATMAN, RONALD BLANKESPOOR, KEITH LIGTENBERG, AND HAROLD VERHAGE, 398
- Dehydrogenation of cyclohexanone, cyclohexanol and cyclohexane over nickel-tin silica. HAROLD E. SWIFT AND JOHN E. BOZIK, 5
- Dicyanobipyridinecobaltate (II) in homogeneous solution. Catalytic hydrogenation by, G. M. SCHWAB AND G. MANDRE, 103
- Dielectric in radiation-catalytic processes. On the relative importance of the bulk and surface of a, G. M. ZHAVROVA, V. I. VLADIMIROVA AND B. M. KADENATSI, 238
- E**
- ESR investigation of nitrobenzene adsorbed on zinc oxide. V. V. SUBBA RAO, R. D. IYENGAR, AND A. C. ZETTMLOYER, 278
- Ethylene and tritium adsorbed on alumina-supported palladium, rhodium, and platinum catalysts. Radiochemical studies. G. F. TAYLOR, S. J. THOMSON, AND G. WEBB, 191
- Ethylene over nickel. Formation of dimeric products during the steady state hydrogenation of, R. J. KOKES AND J. P. BARTEK, 72
- F**
- Ferric oxide. A kinetic investigation of the formation of benzene on heating long-chain (n -C₇- n -C₁₈) saturated aliphatic alcohols on, A. K. GALWEY, 352
- Fluorided alumina. Nature of catalytically active sites in, T. V. ANTIPINA, 108
- Fluorinated porous silica glass. Chemisorption sites for ammonia on, N. W. CANT AND L. H. LITTLE, 134
- G**
- Glass. Chemisorption sites for ammonia on fluorinated porous silica, N. W. CANT AND L. H. LITTLE, 134
- H**
- High-temperature acidity measurements and correlation with catalyst activity. R. A. HILDEBRANDT AND HERTHA SKALA, 61
- Hydrocarbons by alumina-supported palladium catalyst. The adsorption and retention of, G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 150
- Hydrocarbons over noble metal catalysts. The oxidation of some. Studies in catalytic reactions II. J. A. BARNARD AND D. S. MITCHELL, 386
- Hydrogen adsorption on platinum/silica catalysts. T. A. DORLING, C. J. BURLACE AND R. L. MOSS, 207
- Hydrogen adsorption and parahydrogen conversion over chromia supported on α -alumina. P. W. SELWOOD, 263
- Hydrogen peroxide on some oxide catalysts. Decomposition of, C. B. ROY, 129

Hydrogenation and adsorption of benzene and methylbenzenes on cobalt and rhodium catalysts. Comparative. J. VÖLTER, M. HERMANN, AND K. HEISE, 307

Hydrogenation by dicyanobipyridinecobaltate (II) in homogeneous solution. G. M. SCHWAB AND G. MANDRE, 103

Hydrogenation of acetone over Raney nickel catalyst. Kinetics of liquid-phase, SANAE KISHIDA AND SHIICHIRO TERANISHI, 90

Hydrogenation of acetylene by alumina-supported ruthenium and osmium. G. C. BOND, G. WEBB AND P. B. WELLS, 157

Hydrogenation of benzene. The specific activity of technetium, rhenium, ruthenium, platinum and palladium in catalytic reactions of, HELENA KUBICKA, 223

Hydrogenation of ethylene over nickel. Formation of dimeric products during the steady state, R. J. KOKES AND J. P. BARTEK, 72

Hydrogenation of olefins on alumina. Deuteration and exchange reactions of ethylene. Y. AMENOMIYA, 198

Hydrogenation of various ketones on nickel boride catalyst. SANAE KISHIDA, YURIKO MURAKAMI, TOSINOBU IMANAKA AND SHIICHIRO TERANISHI, 97

I

Iodine in alkyl iodides. The catalytic exchange of R. A. MORRISON AND K. A. KRIEGER, 25

Ion-exchange resin. *n*-Butene isomerization on acidic, D. KALLÓ AND I. PRESZLER, 1

Ion exchange resins I. Isopropanol dehydration. Vapor-phase reactions catalyzed by, J. C. GOTTFREDI, A. A. YERAMIAN, AND R. E. CUNNINGHAM, 245

Iron. Displacement of adsorbed nitrogen accompanied by isotopic mixing over unpromoted, YUTAKE MORIKAWA AND ATSUMU OZAKI, 145

Isomerization of tetralin. Catalytic, SIGMUND M. CSICSERY, 212

Isomerization on acidic ion-exchange resin. *n*-Butene, D. KALLÓ AND I. PRESZLER, 1

Isomerization on alumina at 510–550°C. Kinetic study of 1-butene, L. FORNI, L. ZANDERIGHI, AND S. CARRÁ, 298

Isopropanol-acetic acid esterification. The vapor-phase reactions catalyzed by ion exchange resins II. A. A. YERAMIAN, J. C. GOTTFREDI, AND R. E. CUNNINGHAM, 257

Isopropanol dehydration. Vapor-phase reactions catalyzed by ion exchange resins I. J. C. GOTTFREDI, A. A. YERAMIAN, AND R. E. CUNNINGHAM, 245

Isotopic mixing over unpromoted iron. Displace-

ment of adsorbed nitrogen accompanied by, YUTAKE MORIKAWA AND ATSUMU OZAKI, 145

K

Ketones on nickel boride catalyst. Hydrogenation of various, SANAE KISHIDA, YURIKO MURAKAMI, TOSINOBU IMANAKA AND SHIICHIRO TERANISHI, 97

Kinetic investigation of the formation of benzene on heating long-chain (*n*-C₇-*n*-C₁₈) saturated aliphatic alcohols on ferric oxide. A. K. GALWEY, 352

Kinetic study of 1-butene isomerization on alumina at 510–550°C. L. FORNI, L. ZANDERIGHI, AND S. CARRÁ, 298

L

Langmuir isotherm. Pulse reaction kinetics with, TADASHI HATTORI AND YUICHI MURAKAMI, 166

Linear free energy relations in modeling heterogeneous catalytic reactions. IRVING J. DUNN, 352

Liquid-phase hydrogenation of acetone over Raney nickel catalyst. Kinetics of, SANAE KISHIDA AND SHIICHIRO TERANISHI, 90

M

Metal chloride promotion and activation of chromia-alumina catalyzed dehydrogenation of cyclohexane. RUSSELL MAATMAN, RONALD BLANKESPOOR, KEITH LIGTENBERG, AND HAROLD VERHAGE, 398

Metal oxide catalysts. The oxidation of CO by O₂ and by NO on supported chromium oxide and other, M. SHELEF, K. OTTO, AND H. GANDHI, 361

Metal oxides. Use of pulsed reduction to estimate the active surface of supported, EMERSON H. LEE, 314

Metal oxygen bond. Classification of the oxidation catalysts according to the type of, F. TRIFIRO AND I. PASQUON, 412

Methylcyclohexanone intermediates in the rhodium-catalyzed hydrogenation of isomeric cresols. YUZURU TAKAGI, SHIGEO NISHIMURA AND KOZO HIROTA, 214

Molecular beams. Reactive scattering from solid surfaces treatment of lock-in detector signals from, JAMES A. SCHWARZ AND ROBERT J. MADIX, 140

Molecular sieve catalysts. The chemistry of catalytic cracking with, CHARLES L. THOMAS AND DAVID S. BARMBY, 341

Molybdenum I. Catalytic oxidation of olefin over oxide catalysts containing, YOSHIHIKO MOROOKA, SYOJI TAN, AND ATSUMU OZAKI, 291

N

- Nickel. Formation of dimeric products during the steady state hydrogenation of ethylene over, R. J. KOKES AND J. P. BARTEK, 72
- Nickel boride catalyst. Hydrogenation of various ketones on, SANAE KISHIDA, YURIKO MURAKAMI, TOSINOBU IMANAKA AND SHIICHIRO TERANISHI, 97
- Nickel catalyst. Kinetics of liquid-phase hydrogenation of acetone over Raney, SANAE KISHIDA AND SHIICHIRO TERANISHI, 90
- Nickel-tin silica catalysts. Metallic phases and activities of, HAROLD E. SWIFT AND JOHN E. BOZIK, 5
- Nitrobenzene adsorbed on zinc oxide. An ESR investigation of, V. V. SUBBA RAO, R. D. IYENGAR, AND A. C. ZETTLEMOYER, 278
- Nitrogen accompanied by isotopic mixing over unpromoted iron. Displacement of adsorbed, YUTAKE MORIKAWA AND ATSUMU OZAKI, 145
- Noble metal catalysts. The oxidation of some hydrocarbons over. Studies in catalytic reactions II. J. A. BARNARD AND D. S. MITCHELL, 386

O

- O⁻ Ion. Crystal field effects in a chemisorbed, REINER KOLLRACK, 321
- Organic semiconductors. Catalytic behavior of HIROO INOKUCHI, NOBUYUKI WAKAYAMA AND YOSHIHIRO MORI, 15
- Oxidation catalysts according to the type of metal oxygen bond. F. TRIFIRO AND I. PASQUON, 412
- Oxidation of 1-butene over bismuth molybdate catalysts IV. PH. A. BATIST, A. H. W. M. DER KINDEREN, YVONNE LEEUWENBURGH, FRANCEN A. M. G. METZ AND G. C. A. SCHUIT, 45
- Oxidation of CO by O₂ and by NO on supported chromium oxide and other metal oxide catalysts. M. SHELEF, K. OTTO, AND H. GANDHI, 000
- Oxidation of olefin over oxide catalysts containing molybdenum I. YOSHIHIKO MORO-OKA, SYOJI TAN, AND ATSUMU OZAKI, 291
- Oxidation of some hydrocarbons over noble metal catalysts. Studies in catalytic reactions II. J. A. BARNARD AND D. S. MITCHELL, 386
- Oxygen chemisorption on the thickness of thin silver films. Influence of, I. G. MURGULESCU, GERDA H. COMSA, AND N. I. IONESCU, 102

P

- Palladium. Radiochemical studies of chemisorption on, G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 191
- Palladium catalysts. The adsorption and retention

- of hydrocarbons by alumina-supported, G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 150
- Palladium in catalytic reactions of benzene with hydrogen. The specific activity of technetium, rhenium, ruthenium, platinum and, HELENA KUBICKA, 223
- Parahydrogen conversion over chromia supported on α -alumina. Hydrogen adsorption and, P. W. SELWOOD, 263
- Paramagnetic species observed in ammonia-precipitated TiO₂ powders. The nature of the, R. D. IYENGAR AND RICHARD KELLERMAN, 107
- Phenylbutenes. Catalytic reactions of, SIGMUND M. CSICSERY, 183
- Platinum. Radiochemical studies of chemisorption on, G. F. Taylor, S. J. THOMSON AND G. WEBB, 191
- Platinum and palladium in catalytic reactions of benzene with hydrogen. The specific activity of technetium, rhenium, ruthenium, HELENA KUBICKA, 223
- Platinum/silica catalysts. Hydrogen adsorption on, T. A. DORLING, C. J. BURLACE AND R. L. MOSS, 207
- Propylene in the absence of gaseous oxygen. Reduction of Bi₂O₃-MoO₃ catalyst during the ammoxidation of, KAMRAN AYKAN, 281
- Propylene oxidation over the cobalt-molybdenum system. YOSHIHIKO MORO-OKA, SYOJI TAN, AND ATSUMU OZAKI, 291
- Pulse reaction technique. Pulse reaction kinetics with Langmuir isotherm. TADASHI HATTORI AND YUICHI MURAKAMI, 166
- Pulsed reduction to estimate the active surface of supported metal oxides. Use of, EMERSON H. LEE, 314

R

- Radiation-catalytic processes. On the relative importance of the bulk and surface of a dielectric in, G. M. ZHAVROVA, V. I. VLADIMIROVA, AND B. M. KADENATSI, 233
- Radiochemical studies of chemisorption and catalysis. G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 191
- Raney nickel catalyst. Kinetics of liquid-phase hydrogenation of acetone over, SANAE KISHIDA AND SHIICHIRO TERANISHI, 90
- Rate constant determinations. The effect of back-diffusion upon, NICOLAE PALIBRODA, ALEXANDRU OLARIU, AND PETRU MARGINEAN, 347
- Rates of adsorption and desorption from adsorption-time curves. A practical method for the evaluation of the net, Y. AMENOMIYA, 410
- Reactions I. Theory. Studies in catalytic, J. A. BARNARD, AND D. S. MITCHELL, 376

- Reactive scattering from solid surfaces. JAMES A SCHWARZ AND ROBERT J. MADIX, 140
- Rhenium, ruthenium, platinum and palladium in catalytic reactions of benzene with hydrogen. The specific activity of technetium, HELENA KUBICKA, 223
- Rhodium. Radiochemical studies of chemisorption on, G. F. TAYLOR, S. J. THOMSON AND G. WEBB, 191
- Rhodium catalysts. Comparative hydrogenation and adsorption of benzene and methylbenzenes on cobalt and, J. VÖLTER, M. HERMANN, AND K. HEISE, 307
- Rhodium catalyzed hydrogenation of isomeric cresols. The yields of methylcyclohexanone intermediates in, YUZURU TAKAGI, SHIGEO NISHIMURA AND KOZO HIROTA, 214
- Ruthenium, platinum and palladium in catalytic reactions of benzene with hydrogen. The specific activity of technetium, rhenium, HELENA KUBICKA, 223
- S**
- Semiconductors. Catalytic behavior of organic, HIROO INOKUCHI, NOBUYUKI WAKAYAMA, AND YOSHIHIRO MORI, 15
- Silica-alumina. Investigation of reactions in the adsorbed layer: decomposition of *tert*-butylbenzene on, YUTAKA KUBOKAWA, HISASHI MIYATA, AND MITSUHIKO MINOBE, 317
- Silica glass. Chemisorption sites for ammonia on fluorinated porous, N. W. CANT AND L. H. LITTLE, 134
- Silver carbonate. Thermal decomposition of yttrium-doped, T. WYDEVEN AND E. RAND, 271
- Silver films. Influence of oxygen chemisorption on the thickness of thin, I. G. MURGULESCU, GERDA H. COMSA, AND N. I. IONESCU 102,
- Surface of supported metal oxides. Use of pulsed reduction to estimate the, EMERSON H. LEE, 314
- T**
- Technetium, rhenium, ruthenium, platinum and palladium in catalytic reactions of benzene with hydrogen. The specific activity of, HELENA KUBICKA, 223
- Tetralin. Catalytic isomerization of, SIGMUND M. CSICSERY, 212
- Theory. Studies in catalytic reactions I. J. A. BARNARD AND D. S. MITCHELL, 276
- TiO₂ powders. The nature of the paramagnetic species observed in ammonia-precipitated, R. D. IYENGAR AND RICHARD KELLERMAN, 107
- Y**
- Yttrium-doped silver carbonate. Thermal decomposition of, T. WYDEVEN AND E. RAND, 271
- Z**
- (Zeolites). The chemistry of catalytic cracking with molecular sieve catalysts. CHARLES L. THOMAS AND DAVID S. BARMBY, 341
- Zeolites and the nature of the active sites. Cracking activity of some synthetic, P. DONALD HOPKINS, 325
- Zeolites acid sites characterized by infrared. H. HATTORI AND T. SHIBA, 111
- Zeolite-hydrogen chloride system. The catalytic activity of, HIROSHIGE MATSUMOTO, KIYOSHI YASUI AND YOSHIRO MORITA, 84
- ZnO. The dehydrogenation of cumene to α -methylstyrene over high-purity, B. S. FARBER, S. D. ABBOTT, C. S. GIAM AND J. H. LUNSFORD, 210
- Zinc oxide. An ESR investigation of nitrobenzene adsorbed on, V. V. SUBBA RAO, R. D. IYENGAR, AND A. C. ZETTMLOYER, 278