List of Publications from the Research Institute for Catalysis (1978)

In 1978, the following papers by the members of the Research Institute for Catalysis, Hokkaido University were published.*)

I. Ordinary Articles

Adsorption of Hydrogen on a Platinum-Graphite Catalyst. Part 1. Electron Spin Resonance Measurement in the Gas-Solid System
A. KATAYAMA and H. KITA
J. Chem. Soc., Faraday Trans. I, **74**, 1963 (1978).

Adsorption of Hydrogen on a Platinum-Graphite Catalyst. Part II. Measurements in the Electrochemical System by Electron Spin Resonance and Potential-Sweep Techniques
A. KATAYAMA and H. KITA
J. Res. Inst. Catalysis, **26**, 131 (1978).

Oxyfunctionalization of Hydrocarbons. 8. Electrophilic Hydroxylation
G. A. OLAH and R. OHNISHI
J. Org. Chem., **43**, 865 (1978).

Direct Synthesis of Phenols from Aromatic Hydrocarbons Catalyzed by Super Acids
G. A. OLAH and R. OHNISHI
Shokubai (Catalyst), **20**, 208 (1978) (in Japanese).

Tracer Studies on the Reaction Paths of the CO Oxidation over Platinum
T. MATSUSHIMA
J. Catalysis, **55**, 337 (1978).

The Mechanism of the CO Oxidation over Polycrystalline Platinum
T. MATSUSHIMA
Bull. Chem. Soc. Japan, **51**, 1956 (1978).

Studies on the Reaction Paths of the CO Oxidation over Platinum Catalyst by Means of a Tracer Method
T. MATSUSHIMA
Shokubai (Catalyst), **20**, 268 (1978) (in Japanese).

Observation of Oxygen Adsorption on Molybdenum Trioxide by Field Electron Emission Techniques
H. YAMADA and K. AZUMA
J. Res. Inst. Catalysis, **26**, 1 (1978).

*) A similar list for 1977 appeared in Vol. 26, No. 1 (1978) of this Journal.

The Effect of Sulfur on the Adsorption of Hydrogen on Molybdenum
T. KIKUCHI and K. ISHIZUKA
J. Res. Inst. Catalysis, **26**, 7 (1978).

Two Forms of Hydrogen on Platinum Surface
T. TOYA, T. ITO and S. ISHI
Elektrokhimiya, **14**, 703 (1978) (in Russian).

Electronic Structure of Silicon Rydberg Series. I. The $(3pnd)$ $^1D^\circ$, $^3D^\circ$, $^1F^\circ$, and $^3F^\circ$ Series
H. TATEWAKI
Phys. Rev., **A 18**, 1826 (1978).

Electronic Structure of Silicon Rydberg Series. II. The $(3pns)$ $^1P^\circ$, $^3P^\circ$ and $(3pnd)$ $^1P^\circ$, $^3P^\circ$ Series
H. TATEWAKI
Phys. Rev., **A 18**, 1837 (1978).

A Method of Self-Consistent Calculation of Electronic Structure of Solid Surfaces
T. NAKAMURA
J. Res. Inst. Catalysis, **26**, 145 (1978).

Recent Progress in the Diffraction of the Atomic and Molecular Beams from Solid Surfaces
Y. HAMAUZU and H. ASADA
Nippon Kesshogakkai-shi (J. Crystallogr. Soc. Japan), **20**, 102 (1978) (in Japanese).

Observed Spectroscopic Line Shape Obtained by Using a Lock-in Amplifier and Its Simulation by a Computer
T. ITO
J. Res. Inst. Catalysis, **26**, 79 (1978).

States of Hydrogen Chemisorbed on Zinc Oxide at Low Temperature
M. WATANABE
J. Res. Inst. Catalysis, **26**, 63 (1978).

Electrical Resistance of Thin Metallic Films: Direct Scattering of Conduction Electrons by Adsorbed Atoms
M. WATANABE
J. Res. Inst. Catalysis, **26**, 107 (1978).

Hydrogenation of Dienes and the Selectivity for Partial Hydrogenation on a Molybdenum Disulfide Catalyst
T. OKUHARA, H. ITOH, K. MIYAHARA and Ken-ichi TANAKA
J. Phys. Chem., **82**, 678 (1978).

Catalytic Behaviour of Sulfided Cobalt for Hydrogenation and Isomerization
Katsumi TANAKA, Ken-ichi TANAKA and K. MIYAHARA
Nippon Kagakukai-shi, 1338 (1978) (in Japanese).

Hydrogen Transfer Reaction on CoS
Katsumi TANAKA, Ken-ichi TANAKA and K. MIYAHARA
Shokubai (Catalyst), **20**, 218 (1978) (in Japanese).

The State of Molybdenum Ion Catalytically Active for the Reactions, N_2O+CO and N_2O+H_2
T. WATANABE, Ken-ichi TANAKA, K. MIYAHARA and K. TANABE
Shokubai (Catalyst), **20**, 255 (1978) (in Japanese).

Direct Reduction of NO by Modified Carbons
T. OKUHARA and TANAKA
Shokubai (Catalyst), **20**, 251 (1978) (in Japanese).

Adsorption of Rare Gases on Metal Surfaces
S. ISHI
Shokubai (Catalyst), **20**, 191 (1978) (in Japanese).

The Chemisorption of CO, CO_2, C_2H_2, C_2H_4, H_2 and NH_3 on the Clean Fe (100) and (111) Crystal Surfaces
K. YOSHIDA and G. A. SOMORJAI
Surface Sci., **75**, 46 (1978).

Hydrogenation of CO and CO_2 on Clean Rhodium and Iron Foils. Correlations of Reactivities and Surface Compositions
D. DWYER, K. YOSHIDA and G. A. SOMORJAI
Advances in Chemistry Series, Hydrocarbon Synthesis, Ed. R. F. Gould, American Chemical Society (1978).

II. Short Notes and Letters

The Characterization of a Platinum-Tin Oxide Catalyst by X-Ray Photoelectron Spectroscopy
A. KATAYAMA
Chem. Letters, 1263 (1978).

Intermediates of Hydrogen Evolution Reaction on Nickel in Aqueous Sodium Hydroxide
T. OHMORI and A. MATSUDA
J. Res. Inst. Catalysis, **26**, 53 (1978).

Selective Hydrogenation of the Internal Double Bond of Penta-1, 3-Diene on a ZnO Catalyst
T. OKUHARA and K. TANAKA
J. Chem. Soc., Chem. Commnum., 53 (1978).

Anisotropic Properties of MoS_2 Single Crystal in Catalysis
T. OKUHARA and K. TANAKA
J. Phys. Chem., **89**, 1953 (1978).

Specific Selectivity of a Partly Reduced MoO_3/β-TiO_2 for Hydrogenation of n-Butene and Butadiene
Katsumi TANAKA, Ken-ichi TANAKA and K. MIYAHARA
Chemistry Letters, 943 (1978).

Measurement of Active Site Density on a Sulfided Nickel Catalyst
S. EMI and K. MIYAHARA
J. Res. Inst. Catalysis, **26**, 101 (1978).

The Superoxide Ion on Supported Tungsten: Evidence for Surface Mobility
A. KAZUSAKA, L. K. YONG and R. F. HOWE
Chem. Phys. Letters, **57**, 592 (1978).

III. Review Articles

Catalysis by Super Acids
R. OHNISHI
Shokubai (Catalyst), **20**, 392 (1978) (in Japanese).

Structural Prerequisite in Heterogeneous Catalysis
K. TANAKA
Nippon Kesshogakkai-shi (J. Crystallogr. Soc. Japan), **20**, 150 (1978) (in Japanese).

Metallic Oxides and Their Mixed Oxides
K. TANAKA
Kodan-sha Scientific, Tokyo (1978).

The Life and Work of Prof. A. N. Frumkin (I) Life
R. NOTOYA and A. MATSUDA
Hyomen (Surface), **16**, 43 (1978) (in Japanese).

The Life and Work of Prof. A. N. Frumkin (II) Work
R. NOTOYA and A. MATSUDA
Hyomen (Surface), **16**, 52 (1978) (in Japanese).