

BULLETIN OF THE INSTITUTE
FOR CHEMICAL RESEARCH

KYOTO UNIVERSITY

Vol. 36, No. 4

Published bi-monthly by

THE INSTITUTE FOR CHEMICAL RESEARCH
KYOTO UNIVERSITY
KYOTO, JAPAN

July, 1958

(Bull. Inst. Chem. Res., Kyoto Univ.)

INSTITUTE FOR CHEMICAL RESEARCH
KYOTO UNIVERSITY

Director

Sankichi TAKEI

Members of Council

Waichiro TSUJI	Yoshiyuki INOUE	Masayoshi ISHIBASHI
Rempei GOTO	Kiichi KIMURA	Sango KUNICHIKA
Hideo KATAGIRI	Ryohei ODA	Kikuo OGIU
Risaburo NAKAI	Ichiro SAKURADA	Nobuji SASAKI
Minoru OHNO	Tsunenobu SHIGEMATSU	Sakae SHIMIZU
Ikutaro SAWAI	Eiji SUITO	Isamu TACHI
Keiichi SHISHIDO	Tomoji SUZUKI	Hideo TAKAKI
Sankichi TAKEI	Yoshimasa TAKEZAKI	Tetsuro TANAKA
Hideki YUKAWA		

Editors

Sumio NAGASAWA	Risaburo NAKAI	Tsunenobu SHIGEMATSU
Michiyasu SUGII	Gisaburo TABUCHI	Megumi TASHIRO

Treasurer

Takeo GYOBU

History of Publications

Term	Vol.	Title	Published
Jan., 1929- Dec., 1947	1-16	化学研究所講演集 (The Reports of the Institute for Chemical Research)	Indeterminately
April, 1933	—	10 Jahre Institut für chemische Forschung (化学研究所創立十周年記念号)	—
March, 1949- Dec., 1949	17-19	化研講演集 (The Reports of the Institute for Chemical Research)	Indeterminately
March, 1950- Sept., 1952	20-30	化学研究所報告 (Bulletin of the Institute for Chemical Research)	Quarterly
Dec., 1951	—	The Commemoration Volume for the Silver Jubilee (化学研究所創立二十五周年記念号)	—
Jan., 1953 onwards	31 No. 1-	Bulletin of the Institute for Chemical Research (化学研究所報告)	Bi-monthly

CONTENTS

Takayuki FUENO and Junji FURUKAWA : A Molecular Orbital Consideration on the Radical Reactivity of Quinones	81
Takayuki FUENO, Keiji MOROKUMA and Junji FURUKAWA : A Molecular Orbital Consideration on the Polarographic Reduction of Stilbene Derivatives	87
Takayuki FUENO, Keiji MOROKUMA and Junji FURUKAWA : A Molecular Orbital Consideration on the Polarographic Reduction Potentials of Aromatic Ketones	96

Abstracts

Hajime NARUMI and Shigeru MATSUO : A Note Concerning the Electric Hexadecapole Moment of the First Excited ^{111}Cd Nucleus	101
Shinjiro KODAMA and Noboru TOMIHISA : Rate of Formation of Ammonium Formate from Carbon Monoxide and Aqueous Ammonia under Pressure	101
Akira WATANABE, Fukuju TSUJI and Shizuo UEDA : Study on Interfacial Double Layer Capacity	102
Shizuo UEDA, Fukuju TSUJI and Akira WATANABE : Theory and Application of <i>U</i> -effect	102
Eiji SUITO, Kazuyoshi TAKIYAMA and Makoto TAKAHASHI : Electron Microscopic Studies on Alkaline Earth Carbonates. (I). Formation by Carbonic Acid Gas Method	103
Eiji SUITO, Kazuyoshi TAKIYAMA and Makoto TAKAHASHI : Electron Microscopic Studies on Alkaline Earth Carbonates. (II). Electron Microscopic and Diffraction Studies on Precipitated Particles	104
Rempei GOTOH, Hiroshi AIDA, Soichi HAYASHI and Nishio HIRAI : Brittle Fracture and Spinnability of Viscous Materials	104
Naokazu KOIZUMI : Dielectric Properties of Polyethylene Glycols at Microwave Frequencies	105
Yoshimasa TAKEZAKI, Nobuya OKAMOTO, Teruhisa MIYAZAKI and Sachio YUASA : Synthesis of Acetic Acid from Methanol and Carbon Monoxide under High Pressure	105
Waichiro TSUJI and Masazo IMAI : Studies on the Coefficient of Kinetic Friction of Fiber	106
Yasuo SONE and Ichiro SAKURADA : Studies on the Second-Order Transition Temperature of Polyvinyl Alcohol. (I). Influence of Water on the Second-Order Transition Temperature of Polyvinyl Alcohol	107
Yasuo SONE and Ichiro SAKURADA : Studies on the Second-Order Transition Temperature of Polyvinyl Alcohol. (II). Influence of Rate of Heating and Degree of Polymerization on the Second-Order Transition	

Temperature of Polyvinyl Alcohol	107
Masao HOSONO and Ichiro SAKURADA : Electrophoretic Mobility of Polyelectrolytes. (I). Electrophoretic Mobility of Polyvinyl Alcohol.....	108
Hideo TAKAKI, Masashige KOYAMA and Hidekiyo FUJIHIRA : Studies on Line Structures in Single Crystals of Tin. (IV)	108
Hiroshi SAWAMURA and Masatoshi TSUDA : Investigation on Cast Iron Having Refined Graphite Produced by Melting Cast Iron Covered with Slag Containing TiO ₂ . (VIII). Influence of Addition of Metallic Titanium, Ferro-titanium and Cu-Ti Alloy upon the Structure of Gray Cast Iron	109
Hiroshi SAWAMURA and Masatoshi TSUDA : Investigation on Cast Iron Having Refined Graphite Produced by Melting Cast Iron Covered with Slag Containing TiO ₂ (IX). Investigation on the Net Structure and the Estimation of Micro-Hardness of S-H Cast Iron	109
Masayoshi ISHIBASHI, Tsunenobu SHIGEMATSU, Yuroku YAMAMOTO, Masayuki TABUSHI and Toyokichi KITAGAWA : Ultraviolet Spectrophotometric Determination of Iron(III) as Chloro-complex	110
Masayoshi ISHIBASHI, Tsunenobu SHIGEMATSU and Yasuharu NISHIKAWA : Fluorometric Determination of Aluminium with Pentachrome Blue Black R	110
Masayoshi ISHIBASHI, Tsunenobu SHIGEMATSU and Yasuharu NISHIKAWA : Studies on the Fluorometric Analysis. (V). Determination of Gallium with 8-Hydroxyquinoline.....	111
Masayoshi ISHIBASHI, Tsunenobu SHIGEMATSU and Yasuharu NISHIKAWA : Studies on the Fluorometric Analysis. (VI). Fluorometric Determination of Gallium, Indium and Beryllium by Successive Extraction.....	111
Risaburo NAKAI, Michiyasu SUGII and Hideo NAKAO : The Use of Radioactive Element. (II). Decomposition of 1,4-Dibenzoylthiosemicarbazide and 1,4-Dibenzoylsemicarbazide with Alkali.....	112
Hideo KATAGIRI, Tatsurokuro TOCHIKURA and Kazutami IMAI : Microbiological Studies of <i>Coli-aerogenes</i> Bacteria. (I). Conversion of the Lactic Acid Fermentation to α -Ketoglutaric Acid Fermentation	113
Hideo KATAGIRI, Tatsurokuro TOCHIKURA and Kazutami IMAI : Microbiological Studies of <i>Coli-aerogenes</i> Bacteria. (II). Oxidative Fermentation of Glucose	114
Hideo KATAGIRI, Tatsurokuro TOCHIKURO and Kazutami IMAI : Microbiological Studies of <i>Coli-aerogenes</i> Bacteria. (III). Oxidation of Glucose and Pyruvic Acid	115
Hideo KATAGIRI and Tatsurokuro TOCHIKURA : Microbiological Studies of <i>Coli-aerogenes</i> Bacteria. (IV). Production of α -Ketoglutaric Acid	116
Hideo KATAGIRI, Hideaki YAMADA and Kazutami IMAI : On the Transglycosidation relating to Riboflavin by <i>Escherichia coli</i> . (I). Formation of Riboflavinylyl Glucoside	117
Tomoji SUZUKI and Fumihiko TANAKA : Microbiological Assay of Vitamins and Amino Acids by One-dimensional Diffusion Method	117

Tomoji SUZUKI, Saburo MURAOKA and Teruo MAKINO : Studies on the Antimetabolites of Amino Acids. (VIII). Formation of Arginosuccinic Acid and Canavanosuccinic Acid in Microorganisms	118
Tomoji SUZUKI and Fumihiko TANAKA : Studies on the Antimetabolites of Amino Acids. (IX). Biological Activity of Aspartic Acid Mono- and Dihydrazide.....	118
Ichiro TACHI : Antagonistic Action of CNS Stimulants against Barbiturates in Mice	119
Hajime FUJIMURA and Katsuya OHATA : Pharmacology of Benzhydrol Derivatives	119

List of Scientific Papers Published in Other Periodicals or Books by the Member of the Institute and their Co-workers during the Year 1957.....	121
--	-----

化学研究所報告第36卷第4号

昭和33年7月21日 印刷

【非売品】

昭和33年7月31日 発行

大阪府高槻市古曽部

京都大学化学研究所

編集兼発行人

武 居 三 吉

京都市上京区寺之内通小川西入

印刷者

山代印刷株式会社

京都市上京区寺之内通小川西入

印刷所

山代多三郎