BULLETIN OF THE INSTITUTE FOR CHEMICAL RESEARCH KYOTO UNIVERSITY

Vol. 58, No. 2

Commemoration Issue Dedicated to Professor Tsunenobu SHIGEMATSU on the Occasion of his Retirement

Published bi-monthly by

THE INSTITUTE FOR CHEMICAL RESEARCH KYOTO UNIVERSITY KYOTO, JAPAN

March 1980

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

INSTITUTE FOR CHEMICAL RESEARCH KYOTO UNIVERSITY

Director

Megumi TASHIRO

Members of Council Eiichi Fujita

Ryozo Kitamaru

Shinzaburo OKA

Tsunenobu Shigematsu

Hidekuni TAKEKOSHI

Megumi TASHIRO

Takuji Yanabu

Ryozo Kitamaru

Hidekuni TAKEKOSHI

Yoshichika Bando Yuzo Inouye Michio Kurata Tatsuo Ooi Mitsuru Takanami Yoshimasa Takezaki Tatsuo Yamamoto

Masafumi Arakawa Kenji Soda

Business Staff

Publication Committee

Katsutoshi MIURA

Kunihiko Sasaki

Yonezo TANAKA

Hiroshi INAGAKI

Masaya Okano

Toshio TAKADA

Natsu UYEDA

Masakazu MATSUI

Tohru Takenaka

Tohru TAKENAKA

Naokazu Koizumi

History of Publications

| Term | | Vol. | Title | Published |
|------------------|---------------|--------------|---|-----------------|
| Jan., Dec., | 1929- 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, Dec., | 1949- 1949 | 17-19 | 化研講演集 (The Reports of the Institute for Chemical Research) | Indeterminately |
| March, Sept., | 1950– 1952 | 20-30 | 化学研究所報告 (Bulletin of the Institute for Chemical Re- search) | 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., onwards | 1953 | 31 No. 1- | Bulletin of the Institute for Chemical Research (化学研究所報告) | Bi-monthly |
| Nov., | 1966 | 44 No. 6 | Special Issue on the Commemoration of the Fortieth Anniversary (化学研究所創立四十周年記念号) | _ |
| Nov., | 1976 | 54 No. 6 | Special Issue on the Commemoration of the Fiftieth Anniversary (化学研究所創立五十周年記念号) | |



重 松 恒 信 教 授 Professor Dr. Tsunenobu Shigematsu

Emeritus Professor Tsunenobu Shigematsu

Having completed 33 years of service at Kyoto University, Dr. Tsunenobu Shigematsu retired on the first of April in 1980. He was granted the title of emeritus professor by the University on the following day.

Dr. Shigematsu was born Ehime on December 28, 1916. He graduated from Kyoto University with his major in chemistry in March, 1940. After he returned to the University with the end of World War II, he joined the Faculty of Science and started his study on analytical chemistry and marine chemistry under the supervision of the late Professor Masayoshi Ishibashi. He was appointed a sub-assistant in March, 1947, and an assistant in June, 1949. In June, 1950, he joined the Faculty of Technology and was appointed a lecturer. He was promoted to assistant professor of the Faculty of Science in March, 1952. During these years, he was concerned with studies on analytical chemistry of trace elements in the hydrosphere. He found that when the log ratio of the concentration of the elements in the earth crust and in the sea was plotted as a function of their ionic potential, most of them fitted a peaked curve. He received a doctor of science degree from Kyoto University for his study on oceanochemistry in 1952.

Dr. Shigematsu was appointed a full professor at the Institute for Chemical Research of the University in April, 1957, and directed the Laboratory of Radiochemistry. In the following years he made his studies on the partition behavior of trace elements between two phases and their application to analytical chemistry, radiochemistry and marine chemistry. He was awarded prizes from the Japan Society for Analytical Chemistry in 1965 and from the Society of Sea Water Science, Japan in 1973 for his works.

Dr. Shigematsu gave lectures on radiochemistry and marine chemistry at the Graduate School of Science since 1942, and supervised the dissertation works of many graduate students. He was a visiting lecturer at many universities. He served as Director of the Institute and as a member of the University Council. He served as vice-Director of the Japan Society for Analytical Chemistry and of the Society of Sea Water Science, Japan, and contributed greatly toward various meetings and international congresses.

Because of his sincere, thoughtful and warm personality, Dr. Shigematsu wins the respect of all who come in contact with him.

This collection of papers by his colleagues, former and present associates, and students is dedicated to Dr. Shigematsu in honor of his retirement.

March, 1980

megumi Jashiro

Megumi Tashiro Director Institute for Chemical Research Kyoto University

CONTENTS

Commemoration Issue Dedicated to Professor Tsunenobu Shigematsu on the Occasion of his Retirement

| Hidekazu Doe, Masakazu Matsui, and Tsunenobu Shigematsu: Nonaqueous |
|---|
| Extraction of Zinc from Ethylene Glycol Solution of Lithium Perchlorate |
| and/or Chloride133 |
| Matsujiro Sakurada: EPR Studies of Axial Ligation of Low-Spin Cobalt(II) |
| Schiff Base Complexes with Lewis Bases and CO140 |
| Hidekazu Doe, Masakazu Matsui, and Tsunenobu Shigematsu: The Influence |
| of Solvents on the Stability Constants of Some Divalent Cation Com- |
| pounds. Zinc Chlorides in Methanol-Nitromethane, Methanol-Water |
| and Ethylene Glycol154 |
| Takeshi Mukoyama, Hiromasa Mazaki, Shunji Kakiuchi, and Masakazu |
| Matsui: Estimation of Chemical Effect on the Decay Rate of ^{99m} Tc164 |
| Yuzuru Kusaka, Haruo Tsuji, Yuzo Fujimoto, Keiko Ishida, Tetsuo Mamuro, |
| Tadao Matsunami, Akira Mizohata, and Shoji Hirai: Multielement |
| Neutron Activation Analysis of Underground Water Sample |
| Yoshihiro Sasaki: Electronic Spectra of Octahedral Nickel (11) and Cobalt (11) |
| Complexes with 2-(2-Pyridyl) imidazole and 2-(2-Pyridyl) benzimidazole |
| Masao Kiyama and Ioshio Takada: Iransformation Products of Iron (III) |
| Taiting Environment and Kanii Suciumet Car Chromotography |
| of Metal Chelater Using the LVCC Method Nickel (II) Trifluoroacetul |
| acetonate |
| Teruo Hinoue Satoshi Okazaki and Taitiro Eujinaga: A Rapid Scan Internal |
| Reflection Spectroscopic System |
| Iun-ichi Havami. Masaki Asahi. Rui Tamura, and Noboru Ono: Nucleofugicity |
| in the Aromatic Nucleophilic Substitution Reaction of Picryl Derivatives |
| with Nitrite Ion in Acetonitrile |
| Keizo Hiraki, Yuzo Tamari, Yasuharu Nishikawa, and Tsunenobu Shigematsu: |
| Homogeneities of Trace Amounts of Selenium in Powdered Samples |
| and the Variation of Oxidation-State of the Element during Storage228 |
| Mutsuo Koyama and Rokuji Matsushita: Use of Neutron Spectrum Sensitive |
| Monitors for Instrumental Neutron Activation Analysis235 |
| Yoshihiro Sasaki: Characterization of Iron(II) Octahedral Complexes with |
| α -Dioximes and Possibility of Application of α -Furyldioxime to Chemical |
| Analysis of Iron(II)244 |
| Toshihiko Akiyama, Yoshichika Bando, and Toshio Takada: Cation Distribution |
| and Some Properties of Brownmillerite Phase $Ca_2Fe_{2-2x}Mn_xM_xO_5$ |
| (M=Mg, Ni, Zn) |
| Yasunori Ikeda, Yoshichika Bando, and Toshio Takada: Crystal Orientation |

| Tetsu Ku | nagai, Masakazu Matsui, and Tsunenobu Shigematsu: Forced-Flow |
|-----------|--|
| Ch | omatography of Alkaline Earths Using Spectrofluorometric Detector |
| Notes | |
| Yoshihiro | Sasaki: Characterization of Iron(II) Complexes with β -Diketones |
| an | Monothio- β -diketone |
| Mitsuko S | uzuki, Masakazu Matsui, Tsunenobu Shigematsu, Yasuzo Matsuo, and |
| То | oshi Nagai: On the Sensitivity in Fluorometry of Europium as |
| Na | ohthoyltrifluoroacetonate |
| Takejiro | Takamatsu, Munetsugu Kawashima, and Mutsuo Koyama: Analysis |
| of | Rock and Sediment Standard Prepared in Japan by Neutron Acti- |
| voi | on and X-ray Fluorescence Methods |

| 京都大学化学研究所報告 第58巻 第2号 | |
|---------------------------------------|---|
| 昭和55年8月5日 印刷 昭和55年8月10日 発行 【非 売 品】 | |
| 京都府宇治市五ケ庄 | |
| 京都大学化学研究所 | |
| 編集兼発行人 | |
| 〒601 京都市南区吉祥院池ノ内町10 | |
| 印刷所 明文舎印刷株式会社 | |
| 電話(075)(681)2741番(代表) | |
| 京都市南区吉祥院池ノ内町10 | |
| 印刷者 中村督信 | |
| | |
| | - |