

ISSN 0023-6071

**BULLETIN OF THE INSTITUTE
FOR CHEMICAL RESEARCH**

KYOTO UNIVERSITY

Vol. 58, No. 1

Nuclear Chemistry and Radiation Effects

Published bi-monthly by

**THE INSTITUTE FOR CHEMICAL RESEARCH
KYOTO UNIVERSITY
KYOTO, JAPAN**

January, 1980

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

INSTITUTE FOR CHEMICAL RESEARCH
KYOTO UNIVERSITY

Director

Megumi TASHIRO

Members of Council

| | | |
|--------------------|----------------------|-----------------|
| Yoshichika BANDO | Eiichi FUJITA | Hiroshi INAGAKI |
| Yuzo INOUE | Ryozo KITAMARU | Naokazu KOIZUMI |
| Michio KURATA | Shinzaburo OKA | Masaya OKANO |
| Tatsuo OOI | Tsunenobu SHIGEMATSU | Toshio TAKADA |
| Mitsuru TAKANAMI | Hidekuni TAKEKOSHI | Tohru TAKENAKA |
| Yoshimasa TAKEZAKI | Megumi TASHIRO | Natsu UYEDA |
| Tatsuo YAMAMOTO | Takuji YANABU | |

Publication Committee

| | | |
|------------------|--------------------|-----------------|
| Masafumi ARAKAWA | Ryozo KITAMARU | Masakazu MATSUI |
| Kenji SODA | Hidekuni TAKEKOSHI | Tohru TAKENAKA |

Business Staff

| | | |
|------------------|-----------------|---------------|
| Katsutoshi MIURA | Kunihiko SASAKI | Yonezo TANAKA |
|------------------|-----------------|---------------|

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 onward | 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) | — |

CONTENTS

| | |
|---|----|
| Toshiyasu Higo and Yoshihisa Iwashita: Cross Assembler/Editor Program of HP2100 to Use INTEL 8085 | 1 |
| Hidekuni Takekoshi and Toshihiro Miyanaga: Model Experiments for rf Structure of Kyoto University Superconducting Cyclotron | 5 |
| Takao Igaki, Tetsuya Hanai, Takehiro Nishidai, Mitsuyuki Abe, and Hidekuni Takekoshi: PIXE Analysis Using Kyoto University Cyclotron | 11 |
| Yoshihisa Iwashita: Field Stability Improvement of the Kyoto University Cyclotron | 25 |
| Toshiro Takabatake, Hiromasa Mazaki, and Teruya Shinjo: Localized Spin Fluctuations in 4d and 5d Transition Metals with Iron Impurities | 29 |
| Masahiko Kurakado, Hiromasa Mazaki, and Shinji Tachi: Excess Quasiparticles in Sn-SnO ₂ -Sn Tunnel Junction by Charged Particles | 45 |
| Takeshi Mukoyama and Rintaro Katano: Gravitational Effect on Internal Conversion | 56 |
| Takeshi Mukoyama and László Sarkadi: A Computer Code for K- and L-Shell Ionization Cross Sections in the Plane-Wave Born Approximation | 60 |
| Takeshi Mukoyama: Electronic Wave Functions for Helium-Like Atoms | 67 |
| Takeshi Mukoyama: Effect of Electronic Correlation on Atomic Excitation Probability Accompanying β Decay | 71 |
| Yoshihisa Iwashita, Toshiyasu Higo, and Kenro Kuroki: Magnetic Field Trimming Effect of Saturated Ferromagnetic Rods | 78 |
| Yasuyuki Nakayama, Tatsumi Mizogawa, and Tatsumi Kawaratani: Study of the Emission of Low-Energy Positrons from MgO | 88 |
| Takeshi Mukoyama and László Sarkadi: Plane-Wave Born-Approximation Calculations of K- and L-Shell Ionization by Heavy Charged Particles | 95 |

京都大学化学研究所報告 第58卷第1号

昭和55年3月24日 印刷
昭和55年3月31日 発行 【非売品】

京都府宇治市五ヶ庄
京都大学化学研究所

編集兼発行人 田代 仁

〒733 広島市十日市町2丁目3番23号
印刷所 大学印刷株式会社
電話(0822)(31)4231番(代表)

広島市十日市町2丁目3番23号
印刷者 増田 訓 清