

ISSN 0023-6071

BULLETIN OF THE INSTITUTE  
FOR CHEMICAL RESEARCH  
KYOTO UNIVERSITY

Vol. 64, No. 1

*Nuclear Chemistry*

*Published bi-monthly by*

THE INSTITUTE FOR CHEMICAL RESEARCH  
KYOTO UNIVERSITY  
KYOTO, JAPAN

March, 1986

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

**INSTITUTE FOR CHEMICAL RESEARCH  
KYOTO UNIVERSITY**

**Director**

Hiroshi INAGAKI

**Members of Council**

Yoshichika BANDO	Kaoru FUJI	Tetsuya HANAI
Hiroshi INAGAKI	Makoto INOUE	Ken'ichi KATAYAMA
Ryozo KITAMARU	Michio KURATA	Masakazu MATSUI
Jun'ichi ODA	Shinzaburo OKA	Tatsuo OOI
Sumio SAKKA	Teruya SHINJO	Kenji SODA
Nobuyuki SUGITA	Toshio TAKADA	Mitsuru TAKANAMI
Hidekuni TAKEKOSHI	Tohru TAKENAKA	Natsu UYEDA

**Publication Committee**

Makoto INOUE	Akiyoshi KAWAGUCHI	Takashi KOBAYASHI
Atsuyoshi OHNO	Atsuhiro OKA	Mikio TAKANO

**Business Staff**

Kageki KAGAWA	Shin HASEGAWA	Masayuki FUJISAWA
---------------	---------------	-------------------

**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
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

Takeshi Mukoyama: Electron Shakeoff Accompanying photoionization.....	1
Takeshi Mukoyama: Relativistic Calculations of the Excitation Cross Sections of Hydrogen-Like Ions by Heavy Charged-Particle Impact.....	12
Hiromi Okamoto, and Yoshihisa Iwashita: Study of Permanent Magnet Quadrupole Lens for Proton Linac.....	20
Shunji Kishimoto, and Yasuhito Isozumi: On the Partial Liquefaction of Gas Mixture in a Proportional Counter Cooled at Low Temper- atures .....	25

京都大学化学研究所報告 第64巻 第1号

昭和61年3月19日 印刷  
昭和61年3月25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 稲垣 博

〒602 京都市上京区下立売通小川東入

印刷所 中西印刷株式会社  
電話(075)(441)3155番(代表)

京都市上京区下立売通小川東入

印刷者 中西亮