y. Hara

Vol. 45, 1975

# THE REVIEW OF PHYSICAL CHEMISTRY

# OF JAPAN

Founded in 1926

#### CONTENTS

Mobilities and Hydration of Monocarboxylate Ions	1
Masakatsu Ueno, Masaru Nakahara and Jiro Osugi: The Electrical Conductivities of NH <sub>4</sub> Cl and Me <sub>n</sub> NH <sub>4-n</sub> Cl (n=1, 2, 3) in Water	9
Masakatsu Ueno, Masaru Nakahara and Jiro Osugi: The Electrical  Conductivities of Et <sub>n</sub> NH <sub>4-n</sub> Cl (n=1, 2, 3) in Water1	7
Jiro Osugi, Masaru Nakahara, Yasuhiko Matsubara and Kiyoshi Shimizu:  The Transference Numbers of KBr and KI in Aqueous Solution at 15,  25 and 40°C up to 1,500kg/cm²	3
Jiro Osugi, Masaru Nakahara and Makoto Horiguchi: The Benzidine  Rearrangement at High Pressure and High Temperature	7
Masatake Katayama, Kimihiko Hara and Jiro Osugi: Kinetic Study of the Solid State Reaction of Zinc and Arsenic at High Temperature and High Pressure3	5
Muneo Sasaki: Kinetic Study of the Intermediate in the Reaction between  Picryl Chloride and Sodium Sulphite in Aqueous Solution	5
Masahiko Uematsu, Shogo Saegusa, Koichi Watanabe and Ichimatsu Tanishita:  Thermodynamic Properties of Gaseous Ethane and Ethene	3

# THE REVIEW OF PHYSICAL CHEMISTRY OF JAPAN

# (Butsuri-Kagaku no Shinpo)

Found in 1926

President: Wasaburo Iono Members of Council:

Michio Okamoto (Chief)

Jiro Osugi

Ryozo Goto

Renpei Goto

Eiji Suito

Hiroyuki Hatano

### Board of Editors:

J. Osugi (Chief) Kyoto University

R. Goto (Associate) Kyoto Sangyo University

E. Suito ( #

) Kyoto University

S. Shida

Yokohama Univeristy

H. Teranishi

Kyoto Technical University

K. Suzuki

Ritsumeikan University

K. Kuwata

University of Osaka

S. Seki

University of Osaka

R. Fujishiro

Osaka City University

T. Hayakawa

Prefectural University of Osaka

Y. Kubokawa

Prefectural University of Osaka

S. Tsuchihashi

University of Kobe

T. Makita

University of Kobs

S. Hasegawa

Okayama University

K. Shimizu

Doshisha University

H. Togawa

Doshisha University

## Secretary:

M. Sasaki

K. Hara

M. Nakahara

T. Tuda

# November 20, 1975

Communications to the Editor should be addressed to Board of Editors, The Physico-Chemical Society of Japan, Faculty of Science, Kyoto University, Kyoto, Japan.

Business Correspondences should be addressed to: Secretary, The Physico-Chemical Society of Japan, Faculty of Science, Kyoto University, Kyoto, Japan.

Purchase Order should be addressed to: Maruzen Co., Ltd., Nihonbashi, Chuo-ku, Tokyo, Japan.

## Published by

# THE PHYSICO-CHEMICAL SOCIETY OF JAPAN

(Nippon Butsuri-Kagaku Kenkyu Kai)
Faculty of Science, Kyoto University, Kyoto, Japan

Printed by KAWAKITA PRINTING CO., LTD., Kyoto, Japan



# KURARAY,

industry-wide pioneers in creativity and originality

(Main Products)

**KURALON** (Polyvinyl alcohol fiber)

**CLARETTA** (Polyester fiber and fabrics)

**KURARAY RAYON** 

KURARAY POVAL (Polyvinyl alcohol)

**CLARINO** (New man-made leather)



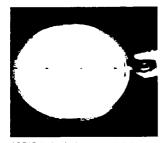
# KURARAY CO.,LTD.

8. Umeda, Kita-ku, Osaka, Japan Cable odress KURARAY OSAKA

# HORIBA'S HIGH-PURITY SYNTHETIC CRYSTALS

for precision optical measurements of radiation, infrared, ultraviolet or lasor beam.

## Nal (TI) SCINTILLATOR



HORIBA, Ltd. has established a steady production line for large size crystals of greater than 12 inches by diameter in addition to conventional size crystals.

The photograph at right shows an Nal (TI)Scintillator for use with scintillation camera The large diameter Nal (TI) scintillator enabled scintillation survey of an extensive area to be done in a drastically shorter time. HORIBALtd. is ready to respond to your requirements for any purpose as for as the scintillators are concerned.

#### **INFRARED RAY** OPTICAL CRYSTAL



Infrared ray optical crystal is formed from materials specially refined for optical crystals as melted and grown into a huge size ingot. Its uncontested high purity exact crystal lattice and transparency at the transmission range are universally acknowledged.

The crystal is available in forms of prism, window or lense of either rough-polish or rough-cut block. or in a random size

Materials : LiF, NaCL KCL KBr. Csl AgCl CaF2, KRS-5. etc.

## **ELECTRO-OPTIC CRYSTAL**



HORIBA. Ltd. is the first in Japan to have developed electro-optic crystal, known as DKDP single crystal especially for modulation of lasor beam. The electro-optic effect of the crystal has been greatly expanded by replacing hydrogen in KDP crystal by its isotope, deuterium (maximum deuterium replacement: 99 7%)

#### Electro-Optical Crystals

	Pacials Index A =545(A	Pall Ware Voltage A = 5461A	2 Cul Mandada Sale
Ext PG-)	7; =26 ( i  0m <sup>-</sup> γ	3 967	40 : 40 : 88mm
(ER 194)	7, -10 3 : 10m " Y	7 SIN	45 : 46 : <del>1000</del>
1.5F	7, = 13:10=7V	9 6EY	40 : 40 : <b>40mm</b>

Miyanohigashi, Kisshoin Minami-ku. Kyoto, Japan Phone: (075)-313-8121

