## Memoirs of the FACULTY OF ENGINEERING KYOTO UNIVERSITY

VOLUME XXIX PART 1

JANUARY 1967

Published by KYOTO UNIVERSITY KYOTO, JAPAN

## MEMOIRS OF THE FACULTY OF ENGINEERING KYOTO UNIVERSITY

**VOLUME XXIX** 

PART 1

JANUARY 1967

## CONTENTS

Yoshiji Niwa and Shoichi Kobayashi: Failure Criterion of Cement Mortar Under	
Triaxial Compression	1
Takashi Sato, Tatsuo Minamiyama and Junzo Yata: A Formulation of the	
Thermodynamic Properties of Ordinary Water Substance	6
Muneaki Hayashi: Equivalent Circuit of a Power System by Mesh Method 2	28
Hiroshi Maeda and Yousuke Kawano: On the Ground Effect of Static Circular	
Peripheral Jet	ŀ6
Yoshio Hiramatsu, Yoshiji Niwa and Yukitoshi Oka: Measurement of Variation	
in Stress by a Photoelastic Stressmeter	8
Shinji NAGATA and Kazuo YAMAMOTO: Criteria for the Scaling Up of Mixing	
Vessels	76
Yoshikazu Sawaragi, Koichi Inoue and Ko Asai: Sub-Optimal Relay Control	
Systems for Non-Linear Plants with Chattering-Less Switching Line 8	38

This memoirs is issued quarterly by the University to publish the original contributions to engineering science made or communicated by the members of the faculty. The faculty consists of following departments:

Dept. of Civil Engineering	Dept. of Nuclear Engineering
Dept. of Mechanical Engineering	Dept. of Sanitary Engineering
Dept. of Electrical Engineering	Dept. of Applied Mathematics and Physics
Dept. of Mineral Science and	Dept. of Precision Mechanics
Technology	Dept. of Synthetic Chemistry
Dept. of Metallurgy	Dept. of Electrical Engineering, II
Dept. of Industrial Chemistry	Dept. of Metal Science and Technology
Dept. of Architecture	Dept. of Mechanical Engineering, II
Dept. of Hydrocarbon Chemistry	Dept. of Transportation Engineering
Dept. of Chemical Engineering	Dept. of Architectural Engineering
Dept. of Polymer Chemistry	Automation Research Laboratory
Dept. of Electronics	Ionosphere Research Laboratory
Dept. of Aeronautical Engineering	Plasma Physics Laboratory

All communications regarding the memoirs should be addressed to the dean of the faculty.

Vol. XXIX, Part 1

Jan. 1967.

昭和42年3月25日 印刷 昭和42年3月31日 発行

編集兼発行者 京都大学工学部

印刷者 小 林 積 造

大阪市福島区亀甲町 2ノ62

印刷所日本印刷出版株式会社 大阪市福島区亀甲町2ノ62