

*Memoirs of the*  
FACULTY OF ENGINEERING  
KYOTO UNIVERSITY

VOLUME XXV PART 3

JULY 1963

Published by  
KYOTO UNIVERSITY  
KYOTO, JAPAN

MEMOIRS OF THE FACULTY OF ENGINEERING  
KYOTO UNIVERSITY

VOLUME XXV

PART 3

JULY 1963

CONTENTS

Masao OHTA Hiroshi NISHIHARA, and Yoko DEGUCHI: *The  $S_4$  and Few-Group Diffusion Calculations of Fast Reactors.* . . . . 273

Michiyoshi KUWAHARA: *Frequency Response of Servomechanisms with Non-linear Friction.* . . . . 287

Yotaro MURAKAMI, Osamu KAWANO and Hideaki TAMURA: *Electron-Microscopic Investigation on Precipitation Phenomena in Aluminium-Zinc Alloys.* . . . . 303

Yoshikazu SAWARAGI, Yoshifumi SUNAHARA and Takayoshi NAKAMIZO: *A Study on the Control Performance of Relay Control Systems Subjected to a Random Input.* . . . . 323

Shigeru MUKAI, Takahide WAKAMATSU and Yoshihisa SHIDA: *Study on the Electrostatic Concentration of Low Ash Coal in Corona Discharge Field.* . . . . 334

---

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

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

Vol. XXV, Part 3

July 1963.

---

昭和三十八年十一月五日印刷  
昭和三十八年十一月十五日発行

編集兼発行者 京都大学工学部

印刷者 小林 積 造  
大阪市福島区甲亀町二ノ六二

印刷所 日本印刷出版株式会社  
大阪市福島区亀甲町二ノ六二