

# Cumulative Contents No.1-No.49 (1959-2007)

雑誌名	Science and Technology reports of Kansai
	University = 関西大学理工学研究報告
巻	50
ページ	95-151
発行年	2008-03-20
URL	http://hdl.handle.net/10112/12443

# Cumulative Contents No.1 $\sim$ No.49 (1959 $\sim$ 2007)

#### [No.1] 1959

FORE WORD	Shinsuke TANAKA
MECHANICAL ENGINEERING: On the condition for breaking of brittle coatings	Dean of the Faculty of Engineering
Friction and wear at ring twisting mechanism of spinr	ning machines Part 1
Laplace transform of exponential function whose index function	c includes sine or cosine
CHEMICAL ENGINEERING:	
The preparation of long-chain <i>n</i> -Alkyl Aniline	s Niger (Studies
on mutations of Fungi. Part 1)	By Shohei KAWATE 45By Hiromu IMAI 57
METALLURGICAL ENGINEERING:  Denomination of Siteel and its general characteristics  Siteel – Report 1)	
[No. 2] 1960	
MECHANICAL ENGINEERING: On the accuracy of strain determination by brittle coa	tings
Researches on buffing (III)	OA and Hirohiko NAMIKAWA 1
Research on single grain cutting By Yukio 7 Friction and wear at ring twisting mechanism of spins	
Motion of body fallen on spring	IA and Kazuhiko SAKAGUCHI 63
ELECTRICAL ENGINEERING:	TZAME 1X 131 HIDAND 100
Studies on consumption of contacts ··· By Tatsuzo Ml Design of single channel gamma ray spectrometer ···	
CHEMICAL ENGINEERING:	
The melting points of long-chain alkyl benzene deriva  By Masaya  The preparation of some chlorotriazinyl dyes	OGAWA and Kazuyoshi ITO 129

A new synthesis of copper tetra-4-phenylphthalocyanine ··· By Kô HIGASHIURA Studies on paper chromatography (I)	
Separation and identification of group I, II and III of cationsBy Hiromu IMAI	143
[No. 3] 1961	
MECHANICAL ENGINEERING:  On the rapid bending of the column subjected to axial and lateral load	-
	1
ELECTRICAL ENGINEERING:	
Graphical analysis of the armature reaction of D-C machines By Tsunezo HADA Conversion efficiency of NaI (Tl) crystal	25
By Teruo TAKAMOTO and Satoru TAKAYAMA Design of a high grain D-C amplifier with a chopper to drive a servo-motor	
By Yakichi KANATA	39
CHEMICAL ENGINEERING: A study on vinylation of benzene-alkylate By Masaya OGAWA	47
Preparations of copper chloromethyl-phthalocyanine and its onium salt	
The chemisorption of oxygen on zinc oxide and nickel oxide  By Ko HIGASHIURA  By Ko HIGASHIURA  By Ko HIGASHIURA	
Studies on kojic acid metabolism (On the effects of various inhibitors in shaking culture by using aspergillus oryzae var. globosus AA2)By Tai TOKUYAMA Studies on the production of active carbonBy Hiromu IMAI	73
INDUSTRIAL ENGINEERING: On the design of the precision snap-action switches By Shinkiti SEKITO and Makisaburo OGASAWARA	91
【No. 4】 1962	
MECHANICAL ENGINEERING:  Buckling of a column with coil springs in its middle part.	1
By Haruoki MAEDA and Isamu SAKAMOTO Repeated compression tester for plastic band and an analysis of band's characteristics By Yorikazu SHIMOTSUMA and Kazuhiko SAKAGUCHI	1 s. 5
ELECTRICAL ENGINEERING:	
An analysis of the vibration of a tram-car truck with an analog computer.  By Tatsuzo MIKAMI and Yakichi KANATA Gate characteristics of SCR. By Yoshihisa HIRANE and Tatsuzo MIKAMI An observation of dynamical behaviors of plasma in a linear pulse discharge.	17 29

By Tomio ARIYASU	35
CHEMICAL ENGINEERING:	
Cracking of petroleum naphtha.  By Sawako HAMANAKA, Teruo ARIMA, Dosei KUNII and Yosaburo KOSAKA Acetylation of benzenealkylate.	45
Photometric determination of iron (III) with rhodamine BBy Hiromu IMAI	55 59
Polarographic determination of thollium (I) and (II) and their behaviour in sodium dihydrogen phosphate solutionBy Hiromu IMAI	67
METAL ENGINEERING: Studies of the reclamation of shell molding sand (Rept. 1). Especially on the decomposition and combustion of phenolic resin at high temperature	
INDUSTRIAL ENGINEERING: On the efficiency of the joint estimates of several unknown parameters.	
By Kusunori KOGO	87
【No. 5 】 1963	
MECHANICAL ENGINEERING:	
On the Two-Dimensional Program Tracing System with a Sensing Apparatus.  By Haruoki MAEDA and Kanji SHIMIZU	1
ELECTRIAL ENGINEERING:	
Calculation Procedure of the Power Transistor Collector Loss of the Automatic Voltage Regulator. By Yoshikazu OTA	11
CHEMICAL ENGINEERING: Studies on Paper Chromatography (II).	
Separation and Identification of Cations for Group IV, V and VIBy Hiromu IMAI	21
Utilization of Long-Chain Alkylaniline as Azoic Dye.	31
METAL ENGINEERING: Transient Phenomena of Wear in VacuumBy Fumitoshi NAKAMURA	35
INDUSTRIAL ENGINEERING: The Protective Films on the Titanium-Palladium Alloy in Various Acids.	
By Katsuyoshi KIDO and Yasuyuki TOMODA	51

【No. 6 】 1964	
MECHANICAL ENGINEERING:  On coefficient of resistance of flow in control valve.  By Katsutaro KATSUTA and Kengo TAKEUCHI Mathematical analysis of the spinning balloon.  By Kenji SAITO	
ELECTRICAL ENGINEERING:  On a self-absorption of radiation in a high temperature plasma.  By Masahiro TAKAI and Tomio ARIYASU	23
CHEMICAL ENGINEERING: Studies on the lithium bromide-water absorption refrigerating machine. By Tadashi UEMURA and Shigeo HASABA	31
METAL ENGINEERING:  Behaviour of graphite in hyper-eutectic iron-carbon system alloy by quenching methodology.  — 1st rept. —	
INDUSTRIAL ENGINEERING:  The electoromicroscopic observation of corroded layers on aluminium-brass.  By Katsuyoshi KIDO and Yasuyuki TOMODA  A new method for direct measurement of local heat transfer rate.  By Ikuo ITO, Satoshi IWASAKI and Shotaro TACHIBANA	
【No. 7】 1965	
MECHANICAL ENGINEERING:  Study on the cutting mechanism with an ultrasonically vibrated single grain  — Experimental investigation of cutting force	1
On coefficient of resistance of flow in control valve (Additional report)	17
Some remarks on differential algebra By Teppei KIKUCHI	35
ELECTRICAL ENGINEERING:  General expressions for transistor T parameters depending on junction temperature  By Yakichi KANATA	45
CHEMICAL ENGINEERING:  The decomposition of methanol on titanium system catalysts  By Yasutaka ISHII and Ikuya MATSUURA	57

METAL ENGINEERING:	
Behaviour of graphite in hyper-eutectic iron-carbon alloy by quenching	
method (Influence of some atmospheres of melting on graphite) — 2nd Rept. —	
By Masatoshi TSUDA and Yoshiaki YAMAMOTO	63
On the corrosion rate of cast iron by sulfur dioxide	
By Yasuhiko NAKAMURA and Zen-ichiro MORITA	81
Study on the seizure phenomena in friction of metal	
By Fumitoshi NAKAMURA, Hiroshi HOSHIKA and Takurou SHIMIZU	89
[No. 8 ] 1966	
MECHANICAL ENGINEERING:	
Some considerations on the behaviours of a two-dimensional contouring control system	n
By Haruoki MAEDA, Kanji SHIMIZU and Keizo AWA	1
ELECTRICAL ENGINEERING:	
Several characteristics of the Osaka tube working as a detector at 30 GHz band.	
······ By Nobuhisa ŌHIGASHI, Masaomi ISHIKAWA and Masanobu MORITA	15
On a Measurement of the rotational temperature of flames.	
By Masahiro TAKAI and Tomio ARIYASU	23
CHEMICAL ENGINEERING:	
Alumina-molybdena catalysts ( I )	
— Physical properties of alumina-molybdena catalysts —	
By Yasutaka ISHII and Ikuya MATSUURA	41
METAL ENGINEERING:	
Studies on the solidification process of the aluminum-silicon alloys.	
By Masatoshi TSUDA and Shoichi EGAWA	49
INDUSTRIAL ENGINEERING:	
On the corrosion behaviors of palladium in titanium-palladium alloy.	
By Katsuyoshi KIDO and Yasuyuki TOMODA	65
[No. 9 ] 1967	
MECHANICAL ENGINEERING:	
On the improvement of on-off control system with series compensation.	
By Hiroo KITANO, Teruo TANAKA and Yoshifumi KOGITA	1
Study on the cylindrical grinding by the cup type grinding wheel	1
— On the effects of the Crosshatch angles — By Nobuo KUMAGAI and Yukio TANAKA	21

Several characteristics of "Photo-Cathode Osaka Tube" working as a detector at microwave frequencies By Nobuhisa ŌHIGASHI and Masanobu MORITA	39
CHEMICAL ENGINEERING:  Absorption spectra of rhodamine B in organic solvents and behaviour of its extraction  By Hiromu IMAI  The t-butylation of phenol with t-butylbenzene.  By Kazuyoshi ITOH, Yukihiro KADOKAWA, Sawako HAMANAKA  and Masaya OGAWA  Alumina-molybdena catalyst (II)	49
— The polymerization of ethylene and propylene —  By Yasutaka ISHII and Ikuya MATSUURA  Studies on the lithium chloride-water absorption refrigerating machine.  By Tadashi UEMURA	63 71
METAL ENGINEERING:  Behavior of some components in solid-liquid reaction between 18-8 stainless steel and aluminum.  By Masatoshi TSUDA and Shoichi EGAWA	89
INDUSTRIAL ENGINEERING:  On the estimates of the unknown parameters in the multivariate distribution with the intraclass correlation.  By Kusunori KOGO	
CIVIL ENGINEERING:  Approximate solutions for a conductive sphere in a dipole field.  By Keiichiro TANIGUCHI	109
ARCHITECTURE: On the common facilities planning (especially shops and clinics) in urban multiple dwelling site.  By Ishio NONOMURA and Yukio ONCHI	119
[No.10] 1968 MECHANICAL ENGINEERING:	
On the improvement of the on-off control system with series compensation (II)	1
The burning velocity and rotational temperature of the low pressure flames	15

ELECTRONIC ENGINEERING:  Experiments and analyses of microwave reflection from a plasma in a magnetic field	
By Kikuo TERAYAMA and Teruo TAKAMOTO	29
APPLIED CHEMISTRY: Alumina-molybdena catalyst (3)  — The oxidation of ethylene —	
By Yasutaka ISHII and Ikuya MATSUURA	47
Transalkylation of alkylbenzenes	51
Chemical durability of mixed-alkali-silicate glassesBy Yukihiro KADOGAWA and Tamotsu YAMATE	57
METAL ENGINEERING: Studies on the Corrosion Resistance of Alloy Cast Irons to Sulphuric Acid — (I) Effect of Silicon —	
By Osamu TAJIMA and Kazuyoshi NAKAO	63
CIVIL ENGINEERING:  The minimum thickness-to-depth ratio of plate girder webs under pure bending	
The Method of Green's Function on Elastodynamic Displacements	79
By Shokichi NAKANO	91
ARCHITECTURE: On the Court-room of Japanese District Court By Takayoshi YOSHIMURA	103
[No.11] 1969	
MECHANICAL ENGINEERING: Untersuchungen über das UltraschallschwingungsschleifenVon Noboru SHINKE, Akishige YANO und Yukio TANAKA	1
The behavior of superimposed ultrasonic vibration on tensile deformation	
By Haruoki MAEDA, Akikazu NAKAGIRI and Masaaki NAKAI	15
ELECTRICAL ENGINEERING:  On the engineering application of the conditional reflex model	27
ELECTRONIC ENGINEERING :  Electrophonic hearing By Reiko KADOTA and Hiroshi MIZUTANI	37
APPLIED CHEMISTRY: Chemical durability of mixed-alkali-silicate glasses (2)	

— Chemical resistance to acid and alkali solutions — By Yukihiro KADOGAWA, Nobuo TOYOHUKU and Tamotsu YAMATE	45
METAL ENGINEERING: Studies on the solidification of aluminum-silicon alloy in a shell mold	51 69
CIVIL ENGINEERING:  Consistency of the weathered residual soils and its relation with engineering properti  By Kazuhiko NISHIDA	
ARCHITECTURE:  Design analysis of translational surfaces used in architectural structures  — Especially on EP and HP shells —  By Kōji MIYAZAKI and Kōichi YAMADA	87
[No.12] 1970  MECHANICAL ENGINEERING: Research on cages of ball bearings — Reverse Revolving Test of a Ball Bearing — By Yorikazu SHIMOTSUMA and Takuzo FUJII	1
ELECTRICAL ENGINEERING:  On the electronic model and the characteristics of automaton with the simple chain of the conditional reflex	
ELECTRONIC ENGINEERING:  An Esaki diode transistor flip flop circuit By Shigeru IMANISHI and Motokazu YOSHINAGA	45
APPLIED CHEMISTRY: Studies on the surface structure of chemically strengthened glasses (1) — Some Properties of Ion-exchanged Glasses —By Yukihiro KADOGAWA and Tamotsu YAMATE	57
METAL ENGINEERING: Silicolloy, a newly developed high silicon over-laying alloy By Keiichi OTA	71

INDUSTRIAL ENGINEERING: Spray through a single hole nozzle	
— 1st. Report: The Experimental Method and a General View of Spray —By Ikuo ITO	77
CIVIL ENGINEERING: Prominence of radiated $S$ pulses from explosive source with the cylindrical shapeBy Shokichi NAKANO, Yukio OKANO, Naoko SHINMYO and Kazunari FUJII	97
ARCHITECTURE:  The construction of architectural spaces by goche-quadrilaterals  By Kōji Miyazaki and Kōichi YAMADA	113
(No.13) 1971	
MECHANICAL ENGINEERING: On the Two-Variable ON-OFF Temperature Control System with Interaction	1
APPLIED CHEMISTRY:  The Bromination of 4-VinylcyclohexeneBy Shoichi TSUCHIDA, Teruyoshi NUMATA, Sawako HAMANAKA and Masaya OGAWA	19
Synthesis of Pyromellitic Acid-Copper (II) Complex	25
Molding Materials from Wood Powder I. Treating of Wood Powder with Dilute Sulfuric Acid at Room Temperature II. Treating of Wood Powder with Sulfuric Acid at High Temperature III. Treating of Wood Powder with Dilute Alkali Solution under High Temperature	39 47
and Pressure	52 59
Spectrophotometric Determination of Kojic Acid	67
METAL ENGINEERING:	
On the Anode Phenomena of the Lead Electrolytic Refining	81
Aluminium-Molybdenum Binary Phase DiagramBy Kiyoshi KAMEI, Tsutomu NINOMIYA and Shuntaro TERAUCHI	93
Mechanical Properties of Some Binary Intermetallic Compounds of Copper By Katsuya AKAMATSU, Kiyoshi KAMEI and Yotaro MURAKAMI	107
Trial Production of Abrasive Wear Tester and Results of Preliminary Test  By Masatoshi TSUDA and Iwao MORI	123

By Kazuhiko NISHIDA and Mitsuru KAGAW	TA 139
【No.14】 1972	
MECHANICAL ENGINEERING: Studies on Belt Grinding — On the Elastic Contact between the Contact Wheel and the Workpiece —	
By Koichi KITAJIMA and Yukio TANAl Studies on Following Motion of Artificial Limb with Cylindrical Co-ordination Cont	trol
SystemBy Keizo AWA, Kanji SHIMIZU and Tadao KURA' Studies on Screw-Fastener — On the Statical Characteristics of Screw-Threaded Connections —	TA 9
Wibration of Cantilever with Pendulum of Variable Length ····· By Keisuke ONUM	
ELECTRICAL ENGINEERING: Surface Coating of Electrical Materials by Means of Exploding Wire	
By Takao WAKISAKA, Masahiro TAKAI and Tomio ARIYA	SU 43
APPLIED CHEMISTRY: Viscosity of Mixed-Alkali Borosilicate Glasses in the Ranges of $10^{1.5}$ – $10^3$ and $10^6$ – $1$ Poises	$\mathbf{O}^{10}$
······ By Yukihiro KADOGAWA, Kazuyuki NAKAMURA, Katsuhiko KAWAI and Tamotsu YAMA	TE 51
Solvent Effect on the Photoisomerization of Cis, Cis-1, 3-Cyclooctadiene By Akio KISAICHI and Masaya OGAV	WA 57
METAL ENGINEERING:	
On the Influence of the Impurities in the Electrolyte on the Anode Surface in the Electrolytic Refining By Fumiyoshi MIYASHITA and Giroku MIYATA	
CIVIL ENGINEERING: Buckling of Plate Girders with Diagonally Stiffened Webs	
By Ichizou MIKAMI, Hachiro TAKEDA and Hiroshi YONEZAV Directivity of Compressional Waves in Small Explosion	
By Kazunari FUJII, Yukio OKANO and Masayoshi NAKA	NO 87
[No.15] 1973	
MECHANICAL ENGINEERING: Heat Transfer by Natural Convection with Simultaneous Frosting	

ELECTRICAL ENGINEERING:  Compound DC Voltage Regulator By Yakichi KANATA	17
ELECTRONIC ENGINEERING: Thermal Conductivities of $(Bi_{1-x}Sb_x)_2$ $(Te_{1-y}Se_y)_3$ Compounds Prepared by the Quenched Technique············ By Katsuhiro YOKOTA and Saichi KATAYAMA Study of High Frequency Discharge By Yoshiharu SHINOBU, Takashi FUKUMURA and Teruo TAKAMOTO	29 41
APPLIED CHEMISTRY:  Vinyle Polymerization. 312. Influence of Dimethylaniline on the Hyper-conjugation Effering Radical Polymerization of Methylated Styrenes  By Minoru IMOTO and Kiichi TAKEMOTO	ect 53
Studies of Pyromellitic Acid-Copper (II) Complex Synthesized from Water-Ethanol Solution	61
INDUSTRIAL ENGINEERING:  Constrution of a New Successive Micro-Indentation Apparatus and its Application  By Ken HORII and Yasuyuki TOMODA	71
CIVIL ENGINEERING: Strains in a Semi-Infinite Elastic Solid Caused by Temperature Variation on its Free Surface By Hisaya YOSHIOKA and Masayoshi Nakano Modern Tunneling and Steel Arch Supports in Swelling Rock By Shichirozaemon SAKUMA	83 103
ARCHITECTURES:  The Calculation on Interreflection of Unilateral Rectangular Room	
[No.16] 1974  MECHANICAL ENGINEERING:  Stress Analysis of Some Typical Fibre Reinforced Model	1 11
ELECTRICAL ENGINEERING:  The Heat Sensitivity of the Thyrister and its Utilization ····· By Konosuke AKITA Relations between Output Disturbance Voltage and Allowable Ranges of Transistors in Shunt DC Voltage Regulator ····· By Seiji TANAKA and Yakichi KANATA	27 37

A Study of Plasma Acceleration by Using Microwave By Masanori NAKANISHI and Teruo TAKAMOTO	
Effects of Heat Treatment on the Seebeck Coefficient of Bi <sub>2</sub> Te <sub>3</sub> , Bi <sub>2</sub> Se <sub>3</sub> and Sb <sub>2</sub> Te <sub>3</sub> CompoundsBy Katsuhiro YOKOTA and Saichi KATAYAMA	
Lattice Constants and Densities of $(Bi_{1-x}Sb_x)_2$ $(Te_{T-y}Se_y)_3$ Compounds Prepared by the Annealing Technique By Kyong-Hun KIM and Saichi KATAYAMA	75
APPLIED CHEMISTRY: Vinyl Polymerization. 328. Polymerization of Methyl Methacrylate Initiated with	
System of Guanamines, Cupric Ion and Water	87
Polymerization of Vinyl Monomer with Alkali Metal in Hexamethylphosphor-amide  Word  Polymerization of Vinyl Monomer with Alkali Metal in Hexamethylphosphor-amide  By Seika YAMAMOTO and Masakazu TATSUMI	
Spectrophotometric Determination of L-Tryptophane by Using Triose Reductone  By Koji SHIKATA, Hitoshi OBATA and Tai TOKUYAMA	
METAL ENGINEERING:	
The Surface Tension of Fused Salts Mixtures (Binary Alkali Chloride Systems)  By Yoshitaka MATSUMURA and Hiroshi HOSHIKA	109
Anodic Polarization Behavior of Ni-Cu Alloys in Sulfuric Acid Solutions By Osamu TAJIMA and Kazuyoshi NAKAO	123
INDUSTRIAL ENGINEERING: Optimum Condition in Measuring the Thickness of Surface Layer by Succeeding Mic Indentation Method	
CIVIL ENGINEERING: Inelastic Coupled Buckling of Vertically Curved I-Girders under Pure Bending	
MATHEMATICS:	
The Optimal Spacing of Systematic Statistics in the Joint Estimation of Several Unknown Parameters	165
[No.17] 1975	
MECHANICAL ENGINEERING: Temperature Dependence of Grinding Wheel Elasticity	
By Masahiro HIGUCHI, Akishige YANO and Yukio TANAKA	1
A Study on Laser Machining with Bleached HologramBy Sumio NAKAHARA, Takeyoshi FUJITA and Kiyoshi SUGIHARA	9
Measurement of Displacement by Means of Laser-Produced Speckle Patterns	18

Strain Measurement with Holographic Interferometry	27
On the Pneumatic Signal Generator by Using Punched Paper Tape as a Trial	37
— On the Behavior of a Rotor in a Single Bearing —  By Yorikazu SHIMOTSUMA and Eiichi HANAKAWA	46
ELECTRICAL ENGINEERING:  A Mathematical Analysis of the Surge Performance of Three-Phase Single Core Cable Lines with Cross-Bonded Sheaths  Transient Response of Shunt DC Voltage Regurator  By Seiji TANAKA and Yakichi KANATA	58 72
ELECTRONIC ENGINEERING: A Study of Annealing Effects for the Lattice Expansion in Ion-Implanted GaAs	,,
By Mitsuo HASHIMOTO, Susumu TAMURA, Jiro YAMAGUCHI, Katsuhiro YOKOTA and Saichi KATAYAMA	81
CHEMICAL ENGINEERING: Studies on the Electrostatic Precipitation	87
APPLIED CHEMISTRY:  Analyses of Chlorination tert-Butyl Benzenes by Means of C NMR Spectra By Huwon KIN, Tadayoshi SAWADA, Masaaki KIYONAGA,  Sawako HAMANAKA and Masaya OGAWA	99
Mass Spectra of Phenolic Resin Intermediates  By Tsutomu TAKAGI and Masayoshi OIWA	
METAL ENGINEERING: Influence of Addition of Metallic Aluminum on Combined Nitrogen Contained in Cast Iron By Masatoshi TSUDA, Yasuo NISHITSUJI and Kiyoshi SETOGAWA	110
Multiple Scattering of Cylindrical P Waves by Parallel Cylinders Located along a Circl	121 le 132
ARCHITECTURE:  Study on Nonlinear Hysteretic Response of a Single- and Multi-Storeyed Building Structures to Random Excitation By Koichiro ASANO and Sanshiro SUZUKI	143

[No.18] 1976	
MECHANICAL ENGINEERING: A Study on Simultaneous Machining of Multi-Spot by Holographic Technique	
By Sumio NAKAHARA, Takeyoshi FUJITA and Kiyoshi SUGIHARA	1
ELECTRICAL ENGINEERING:	
Application to a Step Motor of the P Divided Two-Phase Induction Motor and Its Analysis By Konosuke AKITA and Takafumi FUJISAWA A Study of the Thermoelectrical Properties of the Tin Oxide	9
By Yasuyoshi KUTOMI and Torao NOBUSAWA Overvoltage Dependence of Partial Discharge in Compressed SF <sub>6</sub> Gas	19
By Shigeyuki NAGATA, Ikuo TANAKA and Yoshio INUISHI	25
ELECTRONIC ENGINEERING:	
Output Spectra and Detection Characteristics of the Osaka Tube by Injecting Amplitude-Modulated Signal	
By Masaomi ISHIKAWA, Yoichi SHIMAZAWA, Nobuhisa OHIGASHI and Masanobu MORITA	29
The Influence of Gas Pressure upon the Operation of the Osaka Tube ···· By Sawami MIYAWAKI, Hiroyuki UEDA, Yukio IIDA and Masanobu MORITA	37
APPLIED CHEMISTRY:	
Spectrophotometric Determination of <i>n</i> -Propyl Alcohol and Other Monohydric Alcohol	
Polymerization of Allyl Octyl Oxalate and Its Copolymerization with Diallyl Oxalate By Akira MATSUMOTO, Masaharu NISHIMURA and Masayoshi OIWA	53
Massenspektren von thermischen Oligomeren des Cyclopentadiens	61
Reactions of Ethylbenzene-AlCl <sub>3</sub> -HCl Complex Layer with Methylbenzenes By Nobuyoshi NAMBU, Takashi TSUNOKUMA, Kazuo SASAOKA	
and Sawako HAMANAKA Homogeneous Polymerization of Vinyl Monomers Initiated with Kojic Acid Chelate	67
By Tatsuro OUCHI, Tetsuro GOTO and Minoru IMOTO Decomposition Mechanism of Acetoacetylferrocene in Organic Solvents	73
By Tadashi SHIRAIWA and Hiromu IMAI	83
METAL ENGINEERING:	
Theoretical Analysis of the Surface Reaction on Lead Electrode	87
CIVIL ENGINEERING:	
On a Spherical Source of Elastic RadiationBy Kazutoshi MICHIHIRO, Kazunari FUJII and Masayoshi NAKANO	97
Stress Transmission in Prestressed Concrete by Photo-Elasticity	105
Characteristics of the Run-Off Rate of Pollution Load in an Unseweraged Area	100

By Yasuhiko WADA	111
ARCHITECTURAL ENGINEERING:  Prediction of Motor Vehicle Noise Propagation  By Koji YASUHARA and Yoshimasa SAKURAI	121
[No.19] 1977	
ELECTRICAL ENGINEERING:  A Study on the Surface Hardening of Metal Materials by the Use of High Temperatur Plasma	·е 1
ELECTRONIC ENGINEERING:  High-Frequency Discharge Mechanism by Means of Equivalent Circuit  (1) In the Absence of an External Magnetic Field	æ
APPLIED CHEMISTRY:  Infrared Spectra of Mixed-Alkali Borate Glasses Containing High Alkali Oxide Content	
By Tsuyoshi FUKUO, Ichiro TSUZUKI, Nobuhiro MIYAGAWA, Takeshi OTANI, Hiroshi MIMINO and Shohei KAWATE Preparation and Characterization of Immobilized Invertase with PolymethylmethacrylBy Hitoshi OBATA, Yoshie HASEGAWA and Tai TOKUYAMA	late
METAL ENGINEERING:  Statistic Analysis of Removal of Antimony from Crude Lead by the Multiple Regressic Analysis Method By Fumiyoshi MIYASHITA and Giroku MIYATANI Solid Phase Transformation of the Ti-Mo Binary System  By Shuntaro TERAUCHI, Hiroshi MATSUMOTO, Takashi SUGIMOTO and Kiyoshi KAMEI	53
INDUSTRIAL ENGINEERING:  A Study on the Dynamical Buckling of a Straight Long Rod  By Masayoshi TANIMURA and Akira MIICHI  Analysis of Indentation on Work-Hardening Materials  By Ken HORII and Yasuyuki TOMODA	73 83
Optimum Fleet Size and the Distribution of Oil Recovery Ships	

By Ikuo ITO and Noriyoshi YONEHARA	97
CIVIL ENGINEERING: Assessment of Models for Storm and Combined Sewer Management	100
Test of a Curved Girder with Orthotropic Steel Plate Deck	
A Seismic Model Study of Elastic Radiations from Spherical Wave-Sources	
ARCHITECTURE:  Effects of Density on the Children's Friend-Formation in a Residential Area  By Rintaro KAWAMICHI and Hyoichiro ARAKI	139
MATHEMATICS AND PHYSICS:  Integral of the Normal Distribution Functions	
[No.20] 1978  MECHANICAL ENGINEERING:  Research on Ball Bearing Lubrication	
— Oil Film Breakdown and Rolling-Sliding Friction — By Masanori OGATA, Tsutomu MATSUDA, Takuzo FUJII and Yorikazu SH1MOTSUMA	1
ELECTRICAL ENGINEERING:  The One-Dimensional Analysis of the Temperature Distribution and Electromagnetic Field in a Radio-Frequency Plasma Torch by the Finite Element Method  By Tetsuo SATO and Tomio ARIYASU  A Computer Simulation about the Surge Performance on Three-Phase Single Core Cable Lines with Cross-Bonded Sheaths	11
By Takahiko KONDO, Noriyuki SUGIYAMA and Ikuo TANAKA	31
ELECTRONIC ENGINEERING: High-Frequency Discharge Mechanism by means of Equivalent Circuit (II) In the case of External Magnetic Field	43
CHEMICAL ENGINEERING: Experiments on the Tubular Type Reverse Osmosis System for the Reclamation of Municipal Sewage By Shunsuke TANAKA, Akira AKABANE, Akira KURATA and Seiji SANGA	53

APPLIED CHEMISTRY: Studies of the Extraction of Lithium and the Effect of Diluent
By Junichi MACHIDA, Junji SHIBATA and Sanji NISHIMURA 61 IR Spectroscopic Studies on the Complexes of l,3,5-Trialkylbenzenes-AlCl <sub>3</sub> -HCl Systems By Nobuyoshi NAMBU, Sawako HAMANAKA and Masaya OGAWA 73
Polymerization of Allyl Esters of Unsaturated Carboxylic Acids. II. Cyclopolymerization of Allyl Crotonate
By Akira MATSUMOTO, Juichiro UKON, Kunio URUSHIDO and Masayoshi OIWA 79
Photochemical Reaction of Nitric Oxides-Hydrocarbon-Air System By Yoshichika OHTO, Junichi TANISHITA, Tadashi TANAKA, Koichi HIRAO and Masahiko YOSHIOKA 87
Rate Assay of L-Adrenaline  By Koji SHIKATA, Hiroshi TAN1GAK1, Hitoshi OBATA and Tai TOKUYAMA 93  Permeation Characteristics of Poly (γ-Methyl L-Gultamate) Membranes in Separation of Aqueous Polymer Solutions
By Tadashi URAGAMI, Shigeru KIDO and Mizuho SUG1HARA 97
METAL ENGINEERING:  Effect of Sensitization on Pitting Corrosion of Austenitic and Duplex Stainless steels  By Osamu TAJIMA, Kazuyoshi NAKAO and Yasuo MUTO 105  High Temperature Properties of Aluminium Alloyed Cast Iron  By Masatoshi TSUDA and Kiyoshi SETOGAWA 111
CIVIL ENGINEERING:  Further Test of the Curved Girder with Orthotropic Steel Plate Deck
Assessment of Effect of Combined Sewer Systems with Retention Tank
Optimum Berth Planning in Seaport
Water Adsorption on Decomposed Granite Soil Particles and its Influence on Permeability
PHYSICS:
Rayleigh waves Transmitted Across a Trench on the Surface of an Elastic Half-Space  By Kenji 1MAI, Yoshinori NAKAYAMA, Kazunari FUJII  and Masayoshi NAKANO 161
Derivation of the Exergy Formulae by Mixing Procedure of Gases
[N. 04] 1070
(No.21) 1979
MECHANICAL ENGINEERING : Effect of Ultrasonic Drawing on the Residual Stress
By Akikazu NAKAGIRI, Takaaki YAMANO and Haruoki MAEDA 1

Micro-Machining of Thin Metallic Films with Holographic Technique

By Sumio NAKAHARA, Takeyoshi FUJITA and Kiyoshi SUGIHARA	11
Research on Oil Film Formation in Four Ball Test	
By Takeshi NAKATSUJI, Masanori OGATA, Takuzo FUJII	1.0
and Yorikazu SHIMOTSUMA	19
Research on Oil Seal Lubrication	
— Contact Behaviors of Seal Lip, and Pumping Effect —	
By Masanori OGATA, Seiji NAKAMURA, Genshiro KOMEDA,	00
Takuzo FUJII and Yorikazu SHIMOTSUMA	. 29
ELECTRICAL ENGINEERING:	
Observation of the Junction's Temperature of the Conducting Thyristor	41
A Measurement of Energy Distribution of Electrons in Low Pressure Gas Discharges a Probe Method	
a Frobe Method	31
ELECTRONIC ENGINEERING:	
Discharge Characteristics in the Crossed Fields	
By Takashi FUKUMURA and Teruo TAKAMOTO	63
CHEMICAL ENGINEERING:	
Application of the Solvent Extraction to Inorganic Synthesis	
— On the Formation of Potassium Bicarbonate —	
By Hiroshi HISAMORI, Junji SHIBATA and Sanji NISHIMURA	75
A DDI IED CHEMICEDY .	
APPLIED CHEMISTRY:	. c
Selective Epoxidation of Dicyclopentadiene with Hydrogen Peroxide in the Presence Some Metal Oxides	OI
By Yasuhiro MATOBA, Hiroshi ITO, Yasutaka ISHII and Masaya OGAWA	87
A Study on the Complex Layer of Ethylbenzene-AlCl <sub>3</sub> -HCl System	
By Nobuyoshi NAMBU, Kaneo YAMAMOTO, Sawako HAMANAKA	
and Masaya OGAWA	93
Copolymerizations of Diallyl Phthalate with Olefins	
By Akira MATSUMOTO, Sumio SAKO and Masayoshi OIWA	99
Photocrosslinking of Poly (2,2,4-Trimethyl-3-On-l-Pentyl Methacrylate)	
By Yoshitaka ARITA, Tatsuro OUCHI and Minoru IMOTO	107
A Stopped-Flow Method for the Determination of L-Glutathione in a Tablet	
By Hiroshi TANIGAKI, Hitoshi OBATA and Tai TOKUYAMA	113
Permeation Characteristics of Poly (Vinyl Formal) Membranes	
By Tadashi URAGAMI, Masaru YOSHIMURA and Mizuho SUGIHARA	119
INDUSTRIAL ENGINEERING:	
Piecewise Vector Quadratic Polynomial and Its Application to Curve Synthesis Proble	ame
By Fujio KUBOI	лиъ 190
Structured Control Sets on Grammars	149
By Yoshinori EZAWA	141
Mathematical Analysis on the Most Economic Loading Rate of Production Facility	T 11
By Masami NAKAMURA and Isao YOSHIMURA	151

CIVIL ENGINEERING: Ultimate Load Tests on Multi-Stiffened Steel Box Girders	
By Ichizou MIKAMI, Masahiro DOGAKI and Hiroshi YONEZAWA Assessment of Effect of Combined Sewer Overflows with Control	
Stochastic Models to Analyze Ships' Activities in Seaport  By Yasuhiko WADA Stochastic Models to Analyze Ships' Activities in Seaport	171
By Michihiko NORITAKE and Sakuo KIMURA	179
ARCHITECTURE:	
Fundamental Study on the Dynamical Collapsing Process of Building Structures  By Sanshiro SUZUKI and Koichiro ASANO	199
A Coping Process with the Congestion in the School Playground By Rintaro KAWAMICHI and Hyoichiro ARAKI	
PHYSICS:	
A Feasibility Study of a Heat Pump in a Hot Air Drying System  By Torao NOBUSAWA and Kenji SAITO	215
An Analysis of Rayleigh Waves Transmitted across a Trench	221
[No.22] 1980	
MECHANICAL ENGINEERING: Studies on the Following Motion of Industrial Robot by Presumption of Center of Curvature	
By Keizo AWA, Tadao KURATA, Kanji SHIMIZU and Yasuhiko ARAI	1
ELECTRICAL ENGINEERING:	
On the Surface Hardening of Metal Materials by the CO <sub>2</sub> Plasma Beam	15
By Masami NISHIDA, Shizuo NISHIYAMA and Osamu KAKUSHO	21
Perceptual Noticeability on Removal of Harmonic Components of Vowel-like Sounds	29
— System Organization and Implementation — By Katsuya OGAMI, Shizuo NISHIYAMA and Osamu KAKUSHO	45
Temperature Characteristics of a Solid-state Circuit Composed of FET and TransistonBy Masanobu MATSUDA and Yakichi KANATA	
ELECTRONIC ENGINEERING:	
Electrical and Crystalline Properties of Un-doped P-Type CdTe Annealed in Vacuum By Toshiharu YOSHIKAWA, Katsuhiro YOKOTA, Susumu TAMURA and Saichi KATAYAMA	67

CHEMICAL ENGINEERING:	
Interfacial Tension in Extractant-Diluent-Water System	
By Yasuharu WATANABE, Junji SHIBATA and Sanji NISHIMURA	79
APPLIED CHEMISTRY:	
Complexes of N-(2-Hydroxyethyl)-, and N-(2-Hydroxypropyl) Anilines with Nickel (II By Takashi MIZUNO, Tomihiro NISHIYAMA, Yoichi FUNAKOSHI	
and Fukiko YAMADA Photopolymerization of Maleic Anhydride in the Presence of 1,3-Dioxolane	93
Permeabilities of Various Aqueous Solutions through Poly (Vinyl Alcohol) membrane	es 99
with 1-Ferrocenyl-1, 3-Pentanedione	
By Hiromu IMAI and Tadashi SHIRAIWA Nonenzymatic Oxidation of Toluene by the 3,4-Dihydroxyphenylalanine-H $_2$ O $_2$ -O $_2$ System	107
By Masato TANIGUCHI, Hitoshi OBATA and Tai TOKUYAMA	119
METAL ENGINEERING: On the Aging Characteristics of Cu-Base Cu-Ni-Ti Alloys	
By Masao YAKUSHIJI and Yoshiyuki KONDO	125
CIVIL ENGINEERING:	
Large Deflection Analysis of Stiffened Sector Plates under Uniform Compression	137
A Test on Ultimate Strength of Multi-Stiffened Plate Girders in Bending	149
By Masao INOUE, Hiroaki SHIMADA and Hiroshi MATSUNAGA Piping Phenomenon of Undisturbed Specimen of Decomposed Granite Soil	163
By Kazuhiko NISHIDA and Chiaki AOYAMA Optimum Berth Capacity in Seaport	173
By Michihiko NORITAKE and Sakuo KIMURA	185
ARCHITECTURE:	
Random Response of Nonlinear Hysteretic Systems  By Koichiro ASANO	197
Experimental Results of Pile Groups Subjected to Lateral Load  By Koji TOMINAGA and Kunio YAMAGATA	
Dy Roji Town Mon and Rumo TAWAOATA	200
PHYSICS: Enthalpy and Evergy Analyses on the Reilers Combined with the Heat Rump System	
Enthalpy and Exergy Analyses on the Boilers Combined with the Heat Pump System:  By Kenji SAITO and Torao NOBUSAWA	

## 【No.23】1981

MECHANICAL ENGINEERING:	
Design for Multi-Tool Cutting Employing Simulation Model of Surface Roughness	
Formation Process	
By Masahiro HIGUCHI, Akishige YANO and Eiichi NAGATA Direct Contact Condensation of Steam on a High Speed Spray Jet of Subcooled Water	. 1
By Kenkichi OHBA, Akira NISHIGUCHI and Hiroshi KITADA	13
Pitting of Electrolytic Polishing Gear	
······ By Takeshi NAKATSUJI, Masanori OGATA, Takuzo FUJII and Yorikazu SHIMOTSUMA	31
The Vernier Method on a Moiré Technique for the Precise Measurement of Length	31
By Tadao KURATA, Keizo AWA and Yasuhiko ARAI	43
Stress Relaxation in Ferromagnetic Specimen by Application of Alternating Magnetic Field (1) Theoretical Preliminaries	
By Haruoki MAEDA and Masayoshi NAKANO	53
ELECTRICAL ENGINEERING:	
New Trial of Computer-Simulation for the Load Flows of the Electric Power System at the Results of its Applications	and
······ By Ikuo TANAKA, Takahiko KONDO, Kazutoshi KATO and Kazuhito MIZUNAMI	65
Frequency Analysis of Electroretinogram	79
CHEMICAL ENGINEERING:	
Production of Pure Al <sub>2</sub> O <sub>3</sub> by Solvent Extraction By Akira HINO, Junji SHIBATA and Sanji NISHIMURA	87
APPLIED CHEMISTRY:	1
Ultrafiltration and Absorption Characteristics of Membranes from Cellulose Nitrate a	nd
Activated Alumina By Masahiro TAMURA, Tadashi URAGAMI and Mizuho SUGIHARA	95
Popcorn Polymerization of Methyl Methacrylate by Use of 3,5-Dimethylstyrene Popco	
Polymer By Masakazu TATSUMI and Seika YAMAMOTO	
Differential Scanning Calorimetric Study of the Bulk Polymerization of Diallyl	
Dicarboxylates at Elevated Temperatures	
By Masataka YAMAWAKI, Masazumi MIYAGAWA,	115
Akira MATSUMOTO and Masayoshi OIWA	
Vinyl Polymerization. 408. Effects of DNA, RNA and Some Carcinogens on the Radica Polymerization of Methyl Methacrylate in Water Phase	П
By Minoru IMOTO, Akira KURIYAMA, Masaya INABA and Tatsuro OUCHI	123
Peculiar Polymerization Behavior of Diallyl Oxalate in the Presence of Carbon	
Tetrachloride	
By Akira MATSUMOTO, Yoshihiro MATSUI, Ikuo TAMURA,	
Masataka YAMAWAKI and Masayoshi OIWA	. 129

METALLURGICAL ENGINEERING: Studies on Spray Sea Water Corrosion to Gray Cast Iron	
Thermodynamic Consideration Concerning Influence of Formation of Carbide on Solidification of Primary Austenite in Fe-C System Cast Iron	137
By Hidekazu MIYAKE and Akira OKADA	151
Reaction Between Chromium Oxide and Solid Carbon	163
INDUSTRIAL ENGINEERING:	
Maximally Smooth Interpolation by Minimum Energy Curve	177
Coordination of Eye Head Movement on Visual Perception of Moving Objects  By Ken HORII and Yasuyuki TOMODA	
CIVIL ENGINEERING:	
Congestion Cost and Congestion Charge in SeaportBy Michihiko NORITAKE and Sakuo KIMURA	105
Quantification of Accumulated Loads on the Road Surface and its Runoff Characterist  By Michiliko NORTTARE and Sakuo KIMURA  Quantification of Accumulated Loads on the Road Surface and its Runoff Characterist  By Yasuhiko WADA	tics
Effect of Coastal Configuration on the Quantity of Wave Overtopping  By Masao INOUE and Hiroaki SHIMADA	
Compaction of Unsaturated Sand by Vertical Vibration  By Masao INOUE and Hiroaki SHIMADA  Compaction of Unsaturated Sand by Vertical Vibration  By Harushige KUSUMI and Keiichiro TANIGUCHI	
ARCHITECTURE:	
Response Analysis of Soil-Hysteretic Structural System Subjected to Random Excitat	ion 247
PHYSICS:	
Exergy Analysis on Power Plants Using Cold Energy of LNG	259
Dynamic Response of an Elastic Half-Space to Moving Pressure Loading on a Quarter Part of Free Surface	r
[No.24] 1982	
MECHANICAL ENGINEERING:	
Effects of Stiffness Reduction in Threads of Nut End on Screw-Threaded Load Distribution	1
On a System to Read the Musical ScoreBy Yasuhiko ARAI and Tadao KURATA A Strain Measurement with Speckle Shearing Interferometry	
····· By Shigeyoshi HISADA, Shinji UEDA, Sumio NAKAHARA, Takeyoshi FUJITA and Kiyoshi SUGIHARA	. 27
Laser Soldering — On Melting and Wetting of Solder Pastes —	
By Sumio NAKAHARA, Takeyoshi FUJITA and Kiyoshi SUGIHARA Light Attenuation Technique for Void Fraction Measurement in Two-Phase Bubbly	37

Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45  Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45  Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45  Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45  Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45  Cutting Forces in End Milling  By Kenkichi Ohaba and Ichiro Kishimoto 45
By Koichi KITAJIMA, Yukio TANAKA and Yasuo KONTANI 51
ELECTRICAL ENGINEERING:
Digital Simulation of Thyristor Circuits
A Tunable CW CO <sub>2</sub> Waveguide Laser for the Optical Pumping of Far-Infra-Red Lasers
By Hiroyuki UOZUMI and Masahiro TAKAI 71
Identification Method of Linear System by Divisional Approximate Expression  By Akira KAWATA and Yoshikazu OTA 81
Propagation Behaviour of the Conical Connector Applied a Sound Pulse
Quantitative Analysis of the Perceptual Significance of the Components in Synthetic
Sounds with Harmonic Components
ELECTRONIC ENGINEERING:
A Study of Deep Levels by Measuring Thermally Stimulated Currents Originated from a Space-Charge Layer
Growth of GaAs Thin Films by Mixing between Ga and As Ion Beams
CHEMICAL ENGINEERING:
Direct Extraction of Metal Ions from Metal Oxide with Liquid Cation Exchanger
APPLIED CHEMISTRY:
Electron Impact Fragmentations of a Series of Hydroxy-diphenylmethanesBy Fukiko YAMADA, Tomihiro NISHIYAMA and Yoshimi NAKAI 149
Hindered Internal Rotation in N-cycloalkyl AmidesBy Tomihiro NISHIYAMA, Kazui NAGATA and Fukiko YAMADA 159
Polymerization of p-Aminostyrene Derivatives
Cyclic Acetal-Photosensitized Polymerization. 13. Photooligomerization of Saturated Cyclic Thioether Compounds ··· By Tatsuro Ouchi, Masayuki Kiso, Shingo Okajima
and Satoshi Furusawa 173 Preponderant Occurrence of Head-to-Head Addition in the Radical Polymerization of
Methallyl Acetate By Akira MATUMOTO, Kunio IWANAMI, Naoki KAWAGUCHI and Masayoshi OIWA 183
Basic Studies for Continuous Production of Gluconic Acid and Fructose by Immobilized
Invertase and Glucose Oxidase
Enzymatic Hydrolysis of Rice Straw Xylan By Shohei KAWATE, Zenzo OKAZAKI, Ichiro OWAKI and Tsuyoshi FUKUO 199

METALLURGICAL ENGINEERING:	
Formation of Fe <sub>40</sub> Ni <sub>40</sub> B <sub>20</sub> Alloy Amorphous Ribbon by Melt Spinning under Several	
Casting Conditions	
By Hiroshi HOSHIKA, Yoshiyuki KONDO, Hidekazu MIYAKE	
and Yoshitaka MATSUMURA	209
The Penetration of Lubricant into Cast Irons	
By Masatoshi TSUDA and Kenji TAMADA	217
INDUSTRIAL ENGINEERING:	
A Direct Type Solar Boosted Air Source Heat Pump System	
By Ikuo ITO, Noriyoshi YONEHARA and Tadashi TANIGUCHI	233
Homomorphic Linguistic Hedges and Reasonable Fuzzy Inferences	200
By Yoshinori Ezawa	255
Cooling Characteristics of Impinging Multiple Water Jets on a Horizontal Plane	_00
By Noriyoshi YONEHARA and Ikuo ITO	267
CIVIL ENGINEERING:	
A Study on the Rate of Non-Infiltration Area and Coefficient of Run-off for Assessmen	
Storm-Water Run-off	283
Inelastic Buckling of Plate Girders with Transverse Stiffeners under Bending	202
By Ichizou MIKAMI and Hiroshi YONEZAWA	
Experimental Study on Lateral Load-Carrying Capacity of Circumferentially Stiffened	
Sector Plates ······ By Masahiro DOGAKI, Yoichi AKAMATSU and Hiroshi YONEZAWA Application of Continuous System Simulation Language to Engineering Problems	309
Application of Continuous System Simulation Language to Engineering Problems	325
Shear Strength of Undisturbed Specimen of Decomposed Granite Soil	020
By Kazuhiko NISHIDA and Chiaki AOYAMA	339
Method of Determining Optimum Allocation and Size of Seaports	000
By Michihiko NORITAKE and Sakuo KIMURA	349
A Test on Curved Beams with Stiffened Cylindrical Flange	
By Ichizou MIKAMI and Yoshifumi MORISAWA	363
DIIVCICC .	
PHYSICS: Thermodynamic Assessment of Water as Working Fluid for Compression Heat Pump	
By Yasuyoshi Kutomi and Torao Nobusawa	
Dy Tasayoshi Kotowi and Totao Nobosawa	001
[No.25] 1983	
MECHANICAL ENGINEERING:	
Self-excited Oscillation of Flow in Collapsible Tube	
by Kenkichi OHBA, Nobuo YONEYAMA, Yoshitomo SHIMANAKA	
and Haruoki MAEDA	1
Experimental Investigation of a Fluidic Flowmeter used for a Calorimeter	1
by Hironobu UCHIYAMA and Teruo TANAKA	15
Static Behavior of Deformation Factors affecting to Load Distribution in a Threaded	
Connection	
by Heihachiro INOUE, Masayuki TAKEDA, Akira IZU	
and Yorikazu SHIMOTUMA	25

ELECTRONIC ENGINEERING:	
An Estimation Method of Noise Reduction System by Nonlinear Digital Filtering by Hitoshi UEDA, Takaharu AI, Yoshiyuki MURAMATSU and Yasuo NOMU	ra 35
Excitation of Electrostatic Ion Cyclotron Wave in Electron Beam Plasma System	10.1
by Takashi FUKUMURA and Teruo TAKAMO	то 43
Dielectric Films for Preventing Decomposition of Undoped p-Type CdTe during	
Annealing	
by Toshiharu YOSHIKAWA, Katsuhiro YOKOTA, Saichi KATAYAMA,	
Shinji ISHIHARA and Itsuro KIMU	
X-ray Photoelectron Spectroscopy of Hydrogenated Amorphous Silicon prepared by	y Glow
Discharge Chemical Vapor Deposition Technique	
by Katsuhiro YOKOTA, Tetsuya KAGEYAMA and Saichi KATAYAN	ма 67
CHEMICAL ENGINEERING:	
Extraction of Tin (IV) from Hydrochloric Acid Solution with Di-2-ethylhexyl phosp	nhoric
acidby Masaaki Mukai, Junji Shibata and Sanji Nishimu	
Extraction of Some Metal Ions from Dilute Aqueous Solution by Using a Liquid	
Membrane Process····· by Goro UJITA, Junji SHIBATA and Sanji NISHIMU	
Collection Efficiency in Venturi Scrubbers by utilizing the Electro-charged Water	
Scrubbing Liquid · · · by Isao AOKI, Tadahiro SUGAHARA and Takuzo MATSUYAN	MA 91
APPLIED CHEMISTRY:	
Polymerization of Vinyl Monomer initiated by Hydrophilic Macromolecule in the A	aneons
Solution of Copper (II) Chloride	rqueous
by Tatsuro Ouchi, Yoshifumi Hosaka, Tooru Katsuura and Minoru Imo	то 97
Interpretation of Substituent Parameter of C-13 Chemical Shifts in 1,4-Disubstitute	
Benzenes	
by Fukiko YAMADA, Yoshimi NAKAI, Tomihiro NISHIYAMA and Sadao NIS	ни 103
METALLURGICAL ENGINEERING:	
Characteristics of Thermal Expansion and Oxidation at High Temperature of Cast	Trone
with Different Graphite Shapes by Masatoshi TSUDA and Mikio SAI	
Adherence of Chemical Vapor Deposition to Some Tool Steels	.10 111
by Tatsuya AKAMATSU, Masaru IKENAGA and Kiyoshi KAM	иеі 125
INDUSTRIAL ENGINEERING:	
A Model-based Strategy for FORTRAN Program Debugging and its Systematizat	
by Yoshinori EZAWA, Yukuo ISOMOTO and Tadashi ISHIKE	TA 137
Factors influencing the Quality of Working Life	m 4 1 <i>47</i>
by Tsutomu IZUI and Tsuneo YOSHIMU	KA 147
CIVIL ENGINEERING:	
Experimental Study on Ultimate Strength of Stiffened Plates with Discontinuous C	Cross-
Section under Compression by Masahiro DOGAKI and Hiroshi YONEZA	
Experimental Study on Erosion of Cohesive Sediments	
by Tatsuaki NISHIIGATA and Ichizou YAMAO	KA 167
Further Test on Curved Beams with Stiffened Cylindrical Flange	

	Quantification of Water Quality of Urban Storm Drainage and Modeling Runoff Loads by Yasuhiro WADA and Hiroyuki MIURA	
AR	RCHITECTURE:  Prediction of Mean Maximum Response of Bi-Linear Hysteretic Systems  by Koichiro ASANO and Sanshiro Suzuki	201
	Walking Behavior and Physical Environment for the Visually Impaired by Hyoichiro Araki and Kei Adachi	209
РΗ	Conversion to Rayleigh Waves Near Acute- or Qbtuse-Angled Wedge by Shozaburo Takeuchi, Kazunari Fujii and Masayoshi Nakano Exergy of Solar Radiationby Yasuyoshi Kutomi and Torao Nobusawa	
[1	No.26】1984	
ME	Self-Excited Oscillation of Flow in Collapsible Tube. II (Analysis and Experiment on Initiation of Oscillation)	1 ern 7
EL:	ECTRICAL ENGINEERING:  A Digital Estimation Method of Motor Velocity for a Separately-excited DC Motor	23
	Physical Interpretation of the Computational Process of the Givens' Reduction for Ove determined Linear Equations from a Linear Predictive Stand Point  Nobuyoshi KAIKI, Shizuo NISHIYAMA, Masuzo YANAGIDA  and Osamu KAKUSHO	
ΞL	ECTRONIC ENGINEERING:  Least-squares Method for Source Sound Separation Kohji NAKAMICHI, Yasuo NOMURA, Masuzo YANAGIDA and Osamu KAKUSHO  XPS Measurement of Thicknesses of Oxide Films Grown on a-Si:H Films in Air at Roc	51 om
	Temperature and Oxidation Mechanism	61
	Deposition Technique	65
СН	EMICAL ENGINEERING: Flocculation of Fine Silica in the Solution Containing SurfactantsNoritaka HIROTA, Junji SHIBATA and Sanji NISHIMURA	73

APPLIED CHEMISTRY:	
Low Temperature Synthesis of Noncrystalline Solid Similar to Silica Glass by the	
Hydrolysis of Tetraethyl Orthosilicate	
Radical Polymerization of Methyl Methacrylate Initiated by the System of Diphenyl	
Disulfide, Urea and Copper (II) Chloride	
······ Tatsuro Ouchi, Kazuhiro Shibukawa, Toshiyuki Yoshikawa	
Nobuaki BEIKA and Minoru IMOTO 91	
Reduction of Cinnamyl Acetate by 1,3-Dimethyl-2-phenylbenzimidazoline with Chlorotris	
(tryphenylphosphine) rhodium	
Hidenori CHIKASHITA, Hisao IDE, Shoji MURASA and Kazuyoshi ITOH 97	
Asymmetric Transformation of N-Benzoyl-DL- α-phenylglycine	
Tadashi Shiraiwa, Tsuyoshi Chatani, Tetsuji Matsushita	
and Hidemoto KUROKAWA 103	
NOTE ALL VIDE CO. A. D. CONTROL VIDE CO. C.	
METALLURGICAL ENGINEERING:	
Some Ideas about Industrial Energy Conservation	
Lu ZHONGWU and Kiyoshi KAMEI 109	
Study on Grinding of Titanium	
INDUSTRIAL ENGINEERING:	
Japanese Criterions on the Quality of Working Life Tsutomu IZUI and Tsuneo YOSHIMURA 141	
1 Sutomu 1201 and 1 Suneo 1 OSHIMORA 141	
CIVIL ENGINEERING:	
Linear Analysis of Discretely Stiffened Cylindrical Panels under	
Circumferential Inplane-load	
···Ichizou MIKAMI, Yoshifumi MORISAWA, Jun YAMASHINA and Katsuhiro TANAKA 151	
Various Theories of Orthotropic Cylindrical Shells····· Ichizou MIKAMI 169	
Elastic Buckling of Orthogonally Stiffened Sector Plates under Circumferentially	
Compression	
Maximization of Airport Runway Capacity Michihiko NORITAKE 193	
Characteristics of Runoff Loads from Nonpoint Sources and Runoff Loads  Models of Unit Area	
Models of Unit Area 1 asuniko wada and Hiroyuki Miura 205	
ARCHITECTURE:	
The Actual Condition of the "Building Agreement" and the Valuation by Inhabitants	
Akiko TAKAHASHI and Saburo HORIUCHI 219	
AKIKO TAKAHASHI AHU SABUTO HORIOCHI 215	
[No.27] 1985	
MECHANICAL ENGINEERING:	
Cylindrical Plunge Grinding Process of Rubber	
Characteristics of the Optical Level Gauge with High Speed and High Accuracy applying	
the Range Shift Method	

Junichi KURATA, Hironobu UCHIYAMA and Teruo TANAKA A Velocity Fluctuation in Developing Laminar Flow through a Moderately Curved U-Bend of Square Cross-Section	13
Kenkichi OHBA, Norihisa TSUDA and Kazuaki TAKAGI	33
ELECTRICAL ENGINEERING:  Attenuation of Sound Wave with Viscosity in High Density Deuterium  Tomio Ariyasu, Kazuko Inoue and Akinari Ichiishi	43
Characterization of ElectroretinogramToshiya ARAYA, Takako ITOH and Yakichi KANATA A Method of the Automated Guidance for the Ground VehicleAkira KUMAMOTO and Yoshihisa HIRANE	51 61
	61
ELECTRONIC ENGINEERING: Growth of Single Crystalline GaAs Thin Films by an Ion Beam Deposition Technique	73 81
	01
CHEMICAL ENGINEERING: Distribution Phenomena of Commercial Extractants between Water and Diluent	91
APPLIED CHEMISTRY: Syntheses and NMR Spectral Data of a Series of I- (2-Cyanoethyl) Imidazoles	
Fukiko YAMADA, Tomihiro NISHIYAMA and Masanao SAKATE Racemic Structures and Optical Resolutions by Preferential Crystallization Procedure of (±) -α-Methylbenzylammonium Salts of Substituted Benzoic Acids	101
Mitsuhiro NAKAMURA, Tadashi SHIRAIWA and Hidemoto KUROKAWA Lewis Acid-Promoted Reduction of Benzylideneacetone by NAD(P)H Models Hidenori CHIKASHITA, Hisao IDE and Kazuyoshi ITOH	
Copper (II) Selective Chelate Resins based on Malon-and Oxal-Dihydrazide	
METALLURGICAL ENGINEERING: Structure of the Ion-nitrided layer of 18-8 Stainless Steel	195
Numerical Expressions of Fatigue Results on α-Brass	
INDUSTRIAL ENGINEERING: Factors to Activate Small Group Activities	
Homomorphism Criteria of Fuzzy Inference under Several Compositional Rules  Yoshinori EZAWA	

CIVIL ENGINEERING:
Elastic Buckling of Support Diaphragms with Rectangular Holes in Steel Box Girders
Useful Techniques for Dynamic Relaxation Method
······ Ichizou MIKAMI, Yasuo MIURA, Kazuyasu MATSUMURA and Katsuhiro TANAKA 187
Inelastic Buckling of Plate Girders with Multiple Longitudinal and
Transverse Stiffeners under Bending Ichizou MIKAMI and Hachiho TAKEDA 201 Model Building and Analysis of Runoff Water Quality of Flush from the Street Gully Pots
ARCHITECTURE: Synthesized Evaluation of Indoor Environmental Stresses
Canonical Variables for Describing Plasma Oscillation in Many-Electron System
Soliton Described by Non-Linear Schrödinger Equation and Method of Collective Submanifold Atsushi Kuriyama 257
[No.28] 1986
MECHANICAL ENGINEERING:
Estimation of Volume of Molten Solder in Laser Soldering
Sumio NAKAHARA, Masahiro NISHIMURA, Shigeyoshi HISADA,
Takeyoshi FUJITA and Kiyoshi SUGIHARA 1 Behaviours of Surface Residual Stress Relief and Lattice Defect Density under Impact
Loading in FC25 Cast Iron
······ Akikazu NAKAGIRI, Haruoki MAEDA, Takaaki YAMANO, Yasuhide MAEKAWA and Masaru HIRAI 11
Analysis of Outer Factors to have an Influence on the Measurement Performance of the Thermal Energy Meter and the Presentation of its Improvement Plan
Hironobu UCHIYAMA, Junichi KURATA and Teruo TANAKA 23
Self-excited Oscillation of Flow in Collapsible Tube. III (A Resonant Oscillation of Air Flow)
Static Stiffness of Bolted Joints under High Bolt Pre-Load up to the Plastic Range
ELECTRICAL ENGINEERING:
Physical Properties of High Density Deuterium
Pitch Synchronous Analysis of Speech by Weightedlinear Prediction

and Osamu KAKUSHO 71
Characteristics of a Hybrid Motor Kouichi NAKANO and Yoshihisa HIRANE 79
ELECTRONIC ENGINEERING:  Concentration Dependence of The Diffusion Coefficient of Arsenic in Silicon  Katsuhiro YOKOTA 87
CHEMICAL ENGINEERING:  Collection Efficiency in Venturi Scrubbers by Utilizing the Electro-charged Water for Scrubbing Liquid (Part 2)Isao Aoki, Kenji Katoh and Takuzoh Matsuyama 95  Chemical Properties of Flotation Reagents and their Application to Flotation Phenomena Shinji Doi, Junji Shibata, Makoto Sano and Sanji Nishimura 105
APPLIED CHEMISTRY: Polymerization of Vinyl Monomers Initiated by Cellulose Hollow Fiber in Aqueous
Solution of Copper (II) Chloride
Fukiko YAMADA, Tomihiro NISHIYAMA and Masanao SAKATE 121 Optical Resolutions of DL-Phenylalanine and DL-α-Phenylglycine by Formation of Molecular Compound with Other Optically Active Amino Acids
Yasuyuki SASAKI and Hidemoto KUROKAWA 129 Hydrolysis of Dinitrophenyl Ester by Alginate-Copper (II) Complex MembranesTadashi URAGAMI, Naoki NIWA and Mizuho SUGIHARA 137
METALLURGICAL ENGINEERING: Brazing Properties of Rapidly Quenched Silver Brazing Aiioys
Phase Diagram of CuTi-NiTi Quasi-Binary System Masao YAKUSHIJI 149
INDUSTRIAL ENGINEERING:  Upper Bound of Fuzzy Relation in Probable Fuzzy Reasoning  Yoshinori Ezawa 159
Factors to Activate Small Group Activities and Behavior in Groups  Tsutomu IZUI and Tsuneo YOSHIMURA 169
CIVIL ENGINEERING:
Quasi-Linear Transient Response of Elastic Cylindrical Panels Under Initial and Periodic In-Plane Loads··········· Ichizou MIKAMI and Masakazu TADA 181 Evaluation of Permeability of Storm Water Drain for Controlling Storm Runoff in Urban Area ······ Yasuhiko WADA and Hiroyuki MIURA 203

MATHEMATICS: Population Means of Rank Correlation Coefficients······ Kusunori Kogo	215
【No.29】1987	
MECHANICAL ENGINEERING: Observation of Axisymmetric Bursting Jet by Combination of Schlieren Method and Hot Wire Anemometry	
ELECTRICAL ENGINEERING:  Nonsupervised Learning Methods for Speaker Adaptation in Spoken Word Recognition Norio Fujino, Shizuo Nishiyama, Riichiro Mizoguchi and Osamu Kakusho	
ELECTRONIC ENGINEERING:  Kinetics of Natural Oxidation of Hydrogenated Amorphous Silicon	35
METALLURGICAL ENGINEERING: Production of Some Metal Powders by The Rotating Electrode Process	ı 41
Double Eutectic Equilibrium of The Fe-C System	47
CHEMICAL ENGINEERING: Solvent Extraction of Mo (VI) and W (VI) with Di-N-Hexyl Sulphoxide	57
APPLIDE CHEMISTRY:  Homogeneous Catalytic Transfer Hydrogenation of Carbonyl Compound to Alcohol by Cp <sub>2</sub> ZrCl <sub>2</sub> -HCOOH-Et <sub>3</sub> N System	
Cephalosporin C Acylase, Part I Isolation and Clutivation of Cephalosporin C Acylase Producing Microorganism	
Troutieng Meroorganism  Tsuyoshi FUKUO, Shohei KAWATE and Kazuya KUNITO Cephalosporin C Acylase, Part II Purification and Characterization of Enzyme	77
Shohei KAWATE, Tsuyoshi FUKUO, Kazuya KUNITO and Yoshie KUWABARA Spectral Characteristics and Acid Dissociation Constants of Schiff Bases	95
Hiroshi TAMURA, Akihiko KAMEOKA and Hiromu IMAI	105

INDUSTRIAL ENGINEERING: Factors to Activate Small Group Activities and Job Characteristics	
	117
User Models in A Sas-Consultation Expert System	120
A Simple Method of Generating Spline Curves Under Tension Fujio KUBOI	
Retinal Image Method to Obtain Limiting Velocity of Smooth Pursuit Eye Movement	141
Ken HORII, Hideo ISHII and Yasuyuki TOMODA	151
CIVIL ENGINEERING:	
Elastic Buckling Strength of Plate Girder Webs Under Combination of Partial Edge	
Loading, Bending Moment and Shearing Force	
Masahiro DOGAKI, Atsushi NAKADE and Hiroshi YONEZAWA	159
Ultimate Strength Tests on Steel Box Girders Under Bending	
Ichizou MIKAMI, Yoshifumi MORISAWA, Takeshi FUKUZUMI,	
Atsushi YOSHIZAWA and Tanemitsu NAKAMURA	175
Evaluation of Permeability of Permeable Pavement for Controlling Storm	102
Runoff in Urban Area	193
MECHANICAL ENGINEERING:  Nondestructive Measurement of Depth of Hardness Penetration by AE during Magnetization	1 13 23
ELECTRICAL ENGINEERING: A Study of Conditioned Reflex Automatons (A Self Organization Control System)	37
ELECTRONIC ENGINEERING:  Lamp Annealing of As Implanted Si Katsuhiro Yokota, Kouichi Ohtsuki, Masatoshi Kimura, Susumu Tamura Saichi Katayama, Shinji Ishihara and Itsuro Kimura	
CHEMICAL ENGINEERING:  Recovery and Concentration of Gold from A Thiourea Leach Solution	61 71
razamo zhoro, janji ombriri, makok omo ana banji Milimoka	, 1

ARCHITECTURE:  Japanese Expression by Analogical Design in Contemporary Japanese Architecture	
ARCHITECTURE:	1 100
CIVIL ENGINEERING:  Dynamic Response of Plate Girder Webs with Initial Deflection under Static and Periodic Bendings	
An Investigation of Luneburg's Mapping Function in Binocular Visual Space  Ken HORII, Yoshinori HATANAKA and Yasuyuki TOMODA  Factors to Activate Small Group Activities and Communication Structure  Tsutomu IZUI and Tsuneo YOSHIMURA	
METALLURGICAL ENGINEERING: Liquid Structure of Cast Iron	I 99
Correlations of C-13 NMR Data with Peak Potentials or First Phenyl Ionization Pote for 1,4-Substituted Benzenes Fukiko YAMADA, Tomihiro NISHIYAMA, Yoshimi NAKAI and Sadao NISHI	
Catalyzed by Cp <sub>2</sub> ZrH <sub>2</sub> Tatsuya NAKANO, Yoshio KINO, Yasutaka ISHII and Masaya OGAWA	

INDUSTRIAL ENGINEERING: Assortment Decision and Brand Image in Consumer Behavior	05
Tsutomu IZUI and Masami NAKAMURA Artifact Classification and Elimination from EEG of VDT WorkKen HORII, Kentaro KOTANI and Yasuyuki TOMODA	35 43
ELECTRICAL ENGINEERING:  Various Characteristics of Optical Detection by Discharge Osaka Tube	
CHEMICAL ENGINEERING: Synthesis of Optically Active Thiazolinium Salts	ctor
APPLIED CHEMISTRY:     Asymmetric Transformation of $N$ -Acetyl- $(RS)$ -2-Phenylglycine	97
METALLURGICAL ENGINEERING:  Phenomena Occurring Shortly before Melting of Metastable Cementite-Austenite Eutectic of Fe-C Alloy Akira OKADA, Hidekazu MIYAKE and Ryohei OZAKI Influence of Reduced Pressure and Mold Material on Structure of Cast Stainless Steel	
CIVIL ENGINEERING:  Dynamic Instability of Columns under Periodically Time-Varying Axial Force  Hiroshi Yonezawa, Masahiro Dogaki, Masahito Harada,  Toshiji Honma and Gyoji Inami  Application of Simulation Language to Static, Vibration, and Buckling Analyses  Ichizou Mikami, Yasuo Miura and Harukazu Makino  Ultimate Behaviour Test of Plate Girders under Repetitive Shear  Ichizou Mikami, Shoichi Harimoto, Fumisato Yoshimura, Atsushi Yoshizawa,  Yoshimi Inoue, Yoshifumi Morisawa and Yasushi Yamasato  Evaluation of Permeable Storm Water Drain and Effects for Controlling Urban Storm  Drainage  Yasuhiko Wada and Hiroyuki Miura	137 153
MATHEMATICS AND PHYSICS  The Wiener-Hopf Technique Applied to the Diffraction Problem due to the Slit  Masayoshi Nakano	181

### [No.32] 1990

MECHANICAL ENGINEERING:	
Study on Mechanism and Similarity of Burr Formation in Face Milling and Drilling	
Koichi KITAJIMA, Teruaki MIYAKE, Akihiro YAMAMOTO, Yukio TANAKA and Koya TAKAZAWA	1
A New 3-D Shape Measurement Method Using a Transmitted Grid Image	_
Junichi KURATA, Hironobu UCHIYAMA and Teruo TANAKA Wave Propagation Through Collapsible Tube	15
Atsushi SAKURAI and Kenkicbi OHBA	23
Effects of Artificial Defect on Bending Fracture Stress and Acoustic Emission in Sintered Alumina	
	35
Effects of Temperature on Magnetostriction Due to Alternating Magnetic Field Takaaki YAMANO, Akikazu NAKAGIRI, Noboru SHINKE and Haruoki MAEDA	45
INDUSTRIAL ENGINEERING:	
Homomorphic Robustness of Fuzzy Reasoning	55
Development of Human Resources Management	71
Tsutomu IZUI, Isao YOSHIMURA and Masami NAKAMURA	81
ELECTRICAL ENGINEERING:	
Parallel Operation of Flywheel Generators Shigeo HAYASHI	91
ELECTRONIC ENGINEERING:	
Growth of High Resistivity Cadmium Telluride by a Bridgman Method	103
CHEMICAL ENGINEERING:	
Extraction of Ti (IV) and Other Metal Ions from Acidic Solutions with Tri-alkyl Phosphine Oxide	
	115
METALLURGICAL ENGINEERING:	
A Study on the High Efficiency Cylindrical Grinding with a Cup Type Grinding Wheel the surface integrity of ground surface)	(On
Nobuo Kumagai, Yukio Tanaka and Kiyoshi Kamei	125
CIVIL ENGINEERING:	
Ultimate Strength of Plate Girders with Transverse Stiffeners under Patch Loading	139

<b>-1</b>
.51 67
79
89 03
17
1
1 11
gh 21
33
45
59
71
83
95

Acid Leaching of Garnierite Ore and Separation of Mg in the Leach Liquor with Solve Extraction Hiroyuki KITADE, Sanghyo KIM, Makoto SANO, Junji SHIBATA and Sanji NISHIMURA	
APPLIED CHEMISTRY: Optical Resolution by Preferential Crystallization of (RS) -Tyrosine 4-Chlorobenzenesulfonate	
Tadashi SHIRAIWA, Michio SUNAMI, Masayoshi KAKIMOTO, Seiji INUI and Hidemoto KUROKAWA	113
CIVIL ENGINEERING:	
Ultimate Strength of Plate Girders with Longitudinal Stiffeners under Patch Loading	121
Lateral Buckling Test of Steel Plate Girders under Varying Bending	199
Ultimate Strength Test of Steel Plate Girders under Repetitive Shear Ichizou MIKAMI, Shoichi HARIMOTO, Yasushi YAMASATO	155
and Fumisato YOSHIMURA Ultimate Strength Test of Plate Girders with Unsymmetrical Cross-Section under Bending/Shear	145
Ichizou MIKAMI, Taizou KIMURA, Koichi TOKUDA and Atsuhisa FUJISAKI Initial Crack Size in Fatigue Life Estimation of Fillet Welded Joint	
Characteristics of Hydrogen Sulfide Produced at the Time of Discharge of Sew Age for Storage Tank at the Bottom of Big Commercial Buildings	
Yasuhiko WADA and Hiroyuki MIURA	195
[No.34] 1992	
MECHANICAL ENGINEERING:  Mustererkennung der Qualität der Produktion	1
INDUSTRIAL ENGINEERING: Linguistic Approximation of Fuzzy Sets by Several Hedges	
The Perception of Organizational Culture and Members' Temperament	13
Tsutomu IZUI, Akira MIICHI, Teruhisa NAKAI and Hisashi MINE	23
ELECTRICAL ENGINEERING:	
YAG Laser Induced Photo-emission of Metals and Dyes	39
ELECTRONIC ENGINEERING:	

Observation of Intermodal Injection Locking on a Semiconductor Laser

CHEMICAL ENGINEERING:

Yukio IIDA, Takeshi MIYAJIMA and Masanobu	MORITA 4	19
Amplification of an Electromagnetic Wave Caused by Interaction with an Ele		
Field Excited in a Plasma Medium Teruo TA		7
Improvement for the Number of Substitutional Arsenic Atoms in Arsenic Im	ıplanted	
Silicon by Simultaneously Implanting Boron Ions		
······Katsuhiro YOKOTA, Yoshiyuki SUNAGAWA, Masatoshi OCHI, Takashi		
Yuuji HORINO, Mamoru SATOH, Yasuo ANDO and Kouji M	IATSUDA 7	7]
CHEMICAL ENGINEERING:		
Production of Fine Powders by Solvent Extraction — Hydrolytic Stripping of Fe (II) —		
— Hydrolytic Surpping of Fe (m) Makoto SANO, Kazuaki TAKEBAYASHI, Junji SHIBATA and Sanji NIS	SHIMURA 7	7Q
Makoto Sano, Razuani Takebatasin, junji Simbata and Sanji M	mimora 1	J
APPLIED CHEMISTRY		
Asymmetric Transformation of N-Acetyl- $(RS)$ -2-phenylglycine via		
Formation of Salt with $(R)$ -2-Amino-1-butanol		
······ Hideya MIYAZAKI, Tadashi SHIRAIWA and Hidemoto KUI	rokawa 9	1
CIVIL ENGINEEDING		
CIVIL ENGINEERING  A New Inference Procedure Based on Causal Network Model for Reasonable		
Retrofitting Method of Fatigue Damage in Steel Bridges	,	
Ichizou Mikami, Chitoshi Miki, Shigenori Tanaka and Takanori Ta	SUCHIDA 9	<b>)</b> 7
Further Test for Ultimate Strength of Plate Girders with Unsymmetrical Cro		•
Under Bending/Shear		
Ichizou MIKAMI, Taizou KIMURA, Koichi TOKUDA and Atsuhisa I	FUJISAKI 11	.1
A Knowledge-Based System for Inferring Cause of Damage on RC-Slabs of H	lighway	
Bridges by Network System		
Ichizou MIKAMI, Shigenori TANAKA, Takanori TSUCH		
	Kurachi 12	
Fatigue Tests for Plate Girder Specimens with 4 Types of Vertical Stiffener		s
Masahiro SAKANO, Ichizou MIKAMI, Ken'ichi KANO		4.0
Eiichi YONEMOTO, and Hisao		ŧδ
Computer Simulation Analysis of Simultaneous Loading Effect of Plural Vehi		:1
Fracture Mechanics Analysis on Fatigue Design Curves for Steel Structures		'1
		'1
Modeling and Estimation of the Effect on Water Quality of Urban Small Rive		•
Improvement in Sewrage Construction and Domestic Wastwater Treatment		
Yasuhiko WADA and Hiroyuk	i Miura 18	1
A D GAVIMED CHANNED		
ARCHITECTURE		
Design of Structural Systems Based on the Optimum Seismic Reliability	: Torm 4 10	,
Relation between the Dynamic Ground Parameter Variation and the Amplific		1
Surface Layer to SH Incident Wave	Jauon or a	
Sarrace Layer to 517 Incident wave Sanshiro Suzuki, Koichiro Asano, and Katsumi I	NAKANO 20	5

MATHEMATICS AND PHYSICS:  Free Vibration of Shells with Variable Meridional Profiles: Part Two: Effects of Variable Wall Thickness	
INFORMATION PROCESSING:  Earthquake Observations at the Takatsuki Campus in Kansai University  Koichiro ASANO and Sanshiro Suzuki 237	•
[No.35] 1993	-
MECHANICAL SYSTEMS ENGINEERING: Characteristics and Behavior of Interfacial Wave on Liquid Film in Vertically Upward Air-Water Two-Phase Annular Flow	
ELECTRICAL ENGINEERING:  A High Power Factor Switching Regulator with Predictive Current Controller	
The Development of an Interferometer Using the Beat Signal of a He-Ne Laser, and its Application to the Measurement of the Electron Density of a Sample of Plasma	
ELECTRONIC ENGINEERING:  Amplification of an Electromagnetic Wave by Interaction with an Electrostatic Field Excited in Magnetoplasma	
CHEMICAL ENGINEER  Computer Modelling of Countercurrent Multistage Extraction for  Ti(IV)-H <sub>2</sub> SO <sub>4</sub> -CYANEX 923 SystemJunji Shibata and Masakazu Ohtomo 59	}
APPLIED CHEMISTRY:  Reformatsky Type Reaction of α-Bromo Esters with 3-Methylbenzothiazolium Salts.  A Convenient Method for the Preparation of 2- (1-Ethoxycarboxyalkyl) -3-Methylbenzothiazolines ······ Hidenori CHIKASHITA, Kazuhisa TANAKA and Kazuyoshi ITOH Kinetic Study of Radical Polymerization of Diallyl Dimethyl Ammonium Chloride ········· Akira MATSUMOTO, Etsuzo MARUMOTO and Ikuko KITAMURA 75	

## MATERIALS SCIENCE AND ENGINEERING:

Relation between Resistance Ratio and Resistivity in Metallic Solid Solutions and Multiphase Alloys

Shinya KOMATSU, Masahiko IKEDA, Kiyoshi KAMEI and Takashi SUGIMOTO	89
CIVIL ENGINEERING:	
Ultimate Strength Test for Cylindrical Flanges of Curved Beams	
Ichizou MIKAMI, Yoichi AKAMATSU, Tadashi NAKANO	
and Hironori MATSUMOTO	101
Ultimate Strength Test of Compressed Outstands Using Cruciform Columns	
······ Ichizou MIKAMI, Taizou KIMURA, Yoshikatsu KAWAI, Kazuo ISHIHARA and Tomohiro OHBUCHI	195
Ultimate Stength Test of Steel Box Girders with Unsymmetrical Cross-Section	140
	159
Data Base of Damaged Steel Bridges	
Ichizou MIKAMI, Masahiro SAKANO and Hiroshi SHIBATA	185
A System with Knowledge-Reusing Function for Selecting Steel Bridge	
Fatigue Damage Retrofitting	107
··· Ichizou MIKAMI, Shigenori TANAKA, Hidekazu KITAGISHI and Kazuhito KANBE A Diagnostic Expert System with Analogical Inference and Negative Learing Ability	
Ichizou Mikami, Shigenori Tanaka, Shinji Yoneda and Akira Kurachi	
A Technique for Detecting Inconsistent Knowledge in a Selection System of Retrofitt	
Method of Fatigue Damage in Steel Bridge	8
Ichizou MIKAMI, Shigenori TANAKA, Shinji YONEDA and Hidenori MAEDA	233
Analysis for Size Effects on Fatigue Strength of Out-of-Plane Gusset Joint	
	247
Simultaneous Loading Factors in Multigirder Highway Bridges	257
Simulation Analysis of Fatigue Design Curves for Shinkansen Steel Bridges	201
	267
Fatigue Life Prediction for Plate Girder Specimens with 4 Types of Vertical Stiffener	
Connections ······ Masahiro SAKANO, Ichizou MIKAMI and Eiichi YONEMOTO	277
Low Cycle Fatigue Test of Steel Beam-Column Joint	
·······Masahiro SAKANO, Ichizou MIKAMI, Eiichi YONEMOTO, and Yoshiteru MOMO	285
MATHEMATICS AND PHYSICS:	
Laser Triggered Photo and Field Emission from Special Metallic Cathodes	201
Mustapila BOUSSOUKATA aliu Nobuliisa OHIGASHI	491
[No. 20], 1004	
[No.36] 1994	
MECHANICAL ENGINEERING:	
Experimental Investigation of Recirculation Flow Field in Water Model of Strring	-
Reactors Fan SHICHUAN and Kenkichi OHBA	1
MECHANICAL SYSTEMS ENGINEERING:	
Control of the Trajectory Error by a Trial Velocity Feedback Method on a Vertically	
Jointed Robot Keizo AWA, Tomoharu YAMADA and J. Des TEDFORD	

Density Distributions of RF Discharge Plasma Generated by Inductive Coupling  Takashi Fukumura 27  Growth of Electromagnetic Wave Caused by Double Instability in RF Discharge Plasma  Teruo Takamoto 38  Appearance of Superconducting State in Proton Implanted Ceramic YBa2Cu3O7.x  Katsuhiro Yokota, Takeshi Kura, Kazuhiro Hatanaka, Takashi Itoh, Mitsukazu Ochi, Mitsuaki Murakami, Akiyoshi Chayahara and Mamoru Satoh 49  CHEMICAL ENGINEERING:  Removal of Toxic Organic Compound from Aqueous Solution by Solvent Sublation  Junji Shibata and Hiroshi Tokunaga 61  APPLIED CHEMISTRY:  Radical Polymerization Behavior of Tetraallyl Ammonium Chloride and Swelling Characteritics of Resulting Polycationic Gels  Akira Matsumoto and Akiyoshi Deguchi 71  MATERIALS SCIENCE AND ENGINEERING:  Inoculation Mechanism of Grey Cast Iron  Akira Okada and Hidekazu Miyake 85
Appearance of Superconducting State in Proton Implanted Ceramic YBa2Cu3O7-x  Katsuhiro YOKOTA, Takeshi KURA, Kazuhiro HATANAKA, Takashi ITOH, Mitsukazu OCHI, Mitsuaki MURAKAMI, Akiyoshi CHAYAHARA and Mamoru SATOH  CHEMICAL ENGINEERING: Removal of Toxic Organic Compound from Aqueous Solution by Solvent Sublation
Removal of Toxic Organic Compound from Aqueous Solution by Solvent Sublation  Junji Shibata and Hiroshi Tokunaga 61  APPLIED CHEMISTRY: Radical Polymerization Behavior of Tetraallyl Ammonium Chloride and Swelling Characteritics of Resulting Polycationic Gels  Akira Matsumoto and Akiyoshi Deguchi 71  Materials Science and Engineering:
Radical Polymerization Behavior of Tetraallyl Ammonium Chloride and Swelling Characteritics of Resulting Polycationic Gels
INDUSTRICAL ENGINEERING:  New Dimensions of Leadership Behavior in Small Group Activities  Tsutomu Izui and Ken'ichi Mori 97
CIVIL ENGINEERING:  Further Test for Ultimate Strength of Compressed Outstands Using Cruciform Columns
Analysis Using Modified RRL-Method of Flooding in Sewer Systems  Yasuhiko WADA, Hiroyuki MIURA and Kazutoshi AKASAKA 167  Design and Evalution for High Recyclable Products and Estimation of Their Recyclability  Yasuhiko WADA, Hiroyuki MIURA, Akihisa HIRATA and Sou INOUE 175  The Coastal Strucuture Utilizing for The Purification of Sea Water

[No.37] 1995  MECHANICAL SYSTEMS ENGINEERING:  Application of Simulated Annealing Method to a Large Scheduling Problem  Yoshihiro MURAKAMI, Shinji HASEBE and Iori HASHIMOTO	1
ELECTRONIC ENGINEERING:  Annealing of Ceramic YBa <sub>2</sub> Cu <sub>3</sub> O <sub>7-x</sub> in Oxygen, Nitrogen and Air  Kazuhiro HATANAKA and Katsuhiro YOKOTA  Growth of Waves in RF plasma as a Complex System Teruo TAKAMOTO  Low Temperature Deposition of Polycrystalline GaAs Films on Si Substrates by  Prolyzing AsH <sub>3</sub> and TMG in a Tungsten Heater  Katsuhiro YOKOTA and Masashi IMAI	15 25 37
CHEMICAL ENGINEERING: Analytical Studies of Solvent Extraction Applied to Various Process Solutions	45
INDUSTRIAL ENGINEERING:  A Study of the Work Process in Preparing Dialysate	57
CIVIL ENGINEERING:  Vertical Buckling Strength of Compression Flanges on Steel Plate Girders with/witho Longitudinal Stiffeners Ichizou MIKAMI, Taizou KIMURA and Koichi TOKUDA Allowable Stress Range for Fatigue Design of Super-Long-Life Steel Highway Bridges Masahiro SAKANO, Yozo FUJINO, Masatsugu NAGAI and Ichizou MIKAMI Constant Amplitude Fatigue Test of Plate Girder with Web Penetration Masahiro SAKANO, Ichizou MIKAMI, Hiroshi MURAYAMA and Kiyotaka MORIWAKI Simultaneous Loading Factors for Urban Expressway Bridges	69
Masahiro SAKANO, Ichizou MIKAMI and Kenya HORI A Life Style Assessment System to Achieve a Low Environmental Impact Life  Yasuhiko WADA, Hiroyuki MIURA and So INOUE A Judgment System of the Degree of Necessity for Repair of a Sewer Pipe with Consideration to the Possibility of Road Collapse  Yasuhiro WADA, Hiroyuki MIURA and Shin FUJITA	105
[No.38] 1996  MECHANICAL ENGINEERING:  Analysis of Moire Fringe Profiles Produced by Gratings with Irregularities  Yasuhiko ARAI, Kazuhiro SHIRAKI and Tomoharu YAMADA  MECHANICAL SYSTEMS ENGINEERING:	1
A Practical Fiber-Optic Air-Ratio Sensor Operating by Flame Color Detection Hironobu UCHIYAMA, Takahiro YAMAGUCHI, Tomoharu YAMADA and Yoshihiro MURAKAMI	11

Capillary Tube	23
Flow in a Rectangular Channel	. 33
ELECTRICAL ENGINEERING:	
Activitation of S-Implanted into GaAs	
Ion Acoustic Soliton Excited by the Difference Frequency of Two RF Power Sources of Different Frequencies	
CHEMICAL ENGINEERING: Chemical Fixation of Carbon Dioxide Using Solvent Extraction	. 75
of Various Fatty Acids Kazumasa YOSHIDA, Hiromi TAMAKOSHI, Yasutaka KIDA, Shigeno MATSUMOTO, Hideki YAMAMOTO and Junji SHIBATA	. 89
APPLIED CHEMISTRY:  Production of Biodegradable Polyhydroxyalkanoates by an Isolate of <i>Pseudomonas</i> sp	101
Vanadomolybdophosphate (NPV <sub>6</sub> Mo <sub>6</sub> ) Combined with N-Hydroxyphthalimide (NHF Satoshi SAKAGUCHI, Koichi NAKAYAMA, Yutaka NISHIYAMA and Yasutaka ISHII	
INDUSTRIAL ENGINEERING:  A Progressive Testing of Sheedy's Visual Grating Task  Andris Freivalds and Ken Horii  Effectiveness of Multidimensional Leadership Behavior in Small Group Activities  Tsutomu Izui and Ken'ichi Mori	
CIVIL ENGINEERING: Simultaneous Loading Factors for Fatigue Assessment of Highway Bridges	155
On Cut-off Limit for Railway Bridge Variable Amplitude Stresses ··· Masahiro SAKANO, Ichizo MIKAMI, Kiyotaka MORIWAKI and Toshinari SHIMORA	167

Very-Low-Cycle Fatigue Behavior of Steel Pier Base Joint

······ Masahiro SAKANO, Ichizo MIKAMI, Hiroshi MURAYAMA and Yasuyuki MISUMI I Variable Amplitude Fatigue Test of Railway Floor Beams with Web Penetration ··· Masahiro SAKANO, Ichizo MIKAMI, Hiroshi MURAYAMA and Kiyotaka MORIWAKI I Evaluation of the Effect on Runoff Control of a Porous Asphalt Pavement with an Infiltration Pipe	189
Water Quality Control System Considering Storm Runoff and Its Application  Yasuhiko WADA and Hiroyuki MIURA 2  Yasuhiko WADA and Hiroyuki MIURA 2	
ARCHITECTURE: Seismic Random Response Analysis of M.D.O.F Elasto-Plastic Systems under Active Saturation Control Force	229
CHEMISTRY:  Collection of Metal Ions on the Chelate Resins of Malonic Acid Dihydrazides- Formaldehyde Series Dithiocarbamated  Hiromu IMAI and Yasuo NAKABAYASHI 2	249
INFORMATION PROCESSING: Incomplete Rotator Graph	
Relationship Between the Damage Distribution of Buildings During the Hyogo-ken Nanbu Earthquake and its Aftershocks Sanshiro SUZUKI, Ryuji INOUE, Kazuyoshi KUDO, Masayoshi TAKAHASHI and Minoru SAKAUE	
[No.39] 1997	
MECHANICAL ENGINEERING:  The Effect of Polishing Fluid on the Finishing Performance of Titanium Alloy Utilizing New Lapping Tape	1
MECHANICAL SYSTEMS ENGINEERING:  Measurement of Heat Transfer Coefficients Using Thermosensitive Liquid Crystal  Ryosuke MATSUMOTO, Isao ISHIHARA,  Shinzo KIKKAWA and Mamoru SENDA  Technological Steps Towards the Harmonization of Energy Development and	13
Environmental Protection in Japan Kazuhiro SHIRAKI, Tomoharu YAMADA, Keizou AWA and Yasuhiko ARAI	27

ELECTRICAL ENGINEERING:  The Interaction of YAG Laser Produced Plume Plasma with Laser Beams	4.0
Masato YAMAMOTO and Masahiro TAKAI	43
ELECTRONIC ENGINEERING: Improvement of Superconducting Properties by Inducing Stress	55
CHEMICAL ENGINEERING: Estimation of Vapor-Liquid Equilibrium Using the	
Soave-Redlich-Kwong (SRK) Equation of State	69
INDUSTRIAL ENGINEERING:  Difference in Role Perception on Leadership Behavior in Small Group Activities  Tsutomu Izui and Teruhisa Nakai	83
Knowledge-based Image Analysis in Visual Inspection Using Judgment Function	
CIVIL ENGINEERING:	
Ultimate Strength of Steel Stub H-Columns under Compression  Masahiro DOGAKI, Nobuhiko FUJII and Ichizou MIKAMI Finite Element Analysis of Axially Compressed Steel Bridge Piers with	103
Box-Section under Cyclic Lateral Loading	127
A Case Based Reasoning Expert System for Aiding the Design of Steel Bridges	143
Floor Beam Flange Joint Masahiro SAKANO, Ichizo MIKAMI, Masaaki HOZUMI and Toshinari SHIMORA Variable Amplitude Super-Low-Cycle Fatigue Testing of Steel Pier Base Joints	165
and Yasuyuki MISUMI	171
Long Life Fatigue Test of Patch-Plate-Type Flange Attachment Joint Masahiro SAKANO, Ichizo MIKAMI, Eiichi YONEMOTO and Daisuke SAKURAGI A Quantitative Evaluation Method for the Environmental Impact of Product Recycling and Its Application	179
····· Yasuhiko WADA and Hiroyuki MIURA	
Application of a Hydrologic Model for Excessive Inflow/Infiltration into a Sewer Pipe	
ARCHITECTURE:	
Infuluence of Inhomogeneous Slip on Source Spectrum  Satoshi MATSUDA, Yoshihiko OKUNO and Koichiro ASANO	905
Satoshi Matsuda, toshinko Okuno and kolchito Asano	200

APPLIED CHEMISTRY:  The Effect of Some Anions on the Stability Constant Complexes	u IMAI and Yasuo NAKABAYASHI 215 onductor TAMURA and Seika YAMAMOTO 225 navior of Pyrolyzed Aromatic ructure
[No.40] 1998	
MECHANICAL ENGINEERING:	
Pressure drop of a Supercritical Fluid Flowing Thro Isao ISHIHARA, Ryosuke MATSUMO	ОТО, Toshifumi TSUCHIMORI and Kenichi YOSHIHARA 1
Virtual Machinability Data Versus Real Machinabilit Manufacturing Decision-Making Akish	_
MECHANICAL SYSTEMS ENGINEERING:	
Considerations in the Design and Improvement of a Junichi KURATA, William J.O. BOY	
ELECTRICAL ENGINEERING:  Locating Periodic Orbits and Bifurcation Points Usin  Hide	ng Subspace Shooting etaka ITO and Akira KUMAMOTO 41
ELECTRONIC ENGINEERING: Investigation of Hot-Carrier-Induced, Abnormal g <sub>m</sub> InMOSFETs/SIMOX with Ldd Structure	Degradation in Sub-0.1-μm-Channel
	······Yasuhisa OMURA··· 55
CHEMICAL ENGINEERING:	
Preparation of Metal Oxide Powders from Metal Loa Takayuki KAKIHATA, Kensuke USAMI, Hidek	
CIVIL ENGINEERING:	
Prediction of Water Quality in a. Habor Improved by Purification System with Permeable Rubble mound 1 Yasu	Breakwaters
Non-Point Pollution Control by Means of Stormwater for Flood Control in Urban Area	r Storage Tank
Evaluation of a Neural Network System to Predict U Stiffened Steel Plates	

	Ichizo Mikami and Kazunisa Niwa	103
	Study on Synthetic Appraisal of Bridge Views Using a Questionnaire about Eight Structural Types	
	Ichizo MIKAMI and Shigenori TANAKA	121
Ι	Long Life Fatigue Test of Hanger-Piece-Type Flange Attachment Joint Masahiro SAKANO, Eiichi YONEMOTO, Toshinari SHIMORA and Ichizo MIKAMI	
A	Application of a Neural Network System to Fatigue Life Prediction of Welded Joints	
	Super-Low-Cycle fatigue Behavior of Steel Pier Beam-Column Joint and Base-Joint with Triangular Rib	
F	······· Masahiro SAKANO, Nobuhiko KISHIGAMI, Tsuyoshi ONO and Ichizo MIKAMI Plastic Behavior of Steel Bridge Members with Coating	163
		173
	JED CHEMISTRY:	
	Preparation of Ceramics (YCa) (BaSr) <sub>2</sub> Cu <sub>4</sub> O <sub>8</sub> by Conventional Solid State Reaction Masakazu TATSUMI, Shigeaki TOMODA and Shin-ichi FUJIMOTO Synthesis of Single Bi (Pb)-Sr-Ca-Cu-O Superconductor Using Polymer-Gelation	185
	Method Hiroshi TAMURA and Yoshiaki KAWACHI	195
[No	.41】1999	
MECI	HANICAL ENGINEERING:	
	Natural Convection Condensation Heat Transfer of Carbon Dioxide	
i	n the Subcritical Region Isao ISHIHARA and Ryosuke MATSUMOTO The Influence of Workpiece Shape and Material in Dry Centrifugal Barrel Finishing	1
	and Masatomo WATANABE	17
	HANICAL SYSTEMS ENGINEERING: Flow Visualization of Acoustic Streaming in a Resonance Tube Refrigerator	
	Mamoru Ozawa, Kenji Kunihiro and Akira Kawamoto	35
1	Path Planning Method for a Mobile Robot Based on Human Factors  Junichi KURATA and Hironobu UCHIYAMA  UCHIYAMA	45
ELEC	CTRICAL ENGINEERING:	
	An Analog Implementation of a Neural Network for Auto-detection of Partial Discharges in Power Cables	
		59
	CTRONIC ENGINEERING:	
	Physical and Mathematical Basis for the Crucial Technical Shortcoming of the Split C-V Technique in Thin-SOI MOSFET'sYasuhisa OMURA	69

CHEMICAL ENGINEERING:  Dispersion and Flocculation of $\alpha$ -Al <sub>2</sub> O <sub>3</sub> in Aqueous Solution Containing	
Hydrophilic Polymers Kenichi HORAI, Shigeno MATSUMOTO and Junji SHIBATA	75
Robustness of Decoupling Control of CSTR with Uncertain Dynamics	
Eiji NAKANISHI and Yoshiaki KAWAJIRI	89
INDUSTRIAL ENGINEERING:	
A Method of Deducing Effective Visual Field in Searching	109
CIVIL ENGINEERING:	
Evaluation of the Environmental Friendliness and Performance of Wheels	
Yasuhiko WADA and Hiroyuki MIURA A Method of Storm Water Utilization with a Reservoir for	125
Urban Storm Runoff Control	137
A DCHIMPOMUDE :	
ARCHITECTURE:  Damage and Emergency Correspondence in Welfare Institutions for the Elderly Afte	r
the Great Hanshin-Awaji Earthquake	
······· Hyoichiro ARAKI, Kei ADACHI and Masahiko MIYAMOTO	149
BIOTECHNOLOGY:	
Bioassay of Water-Soluble Pollutants by Image Analysis of Bacterial Motion ···· Kenji Yasunaga, Kenji Sumino, Yoshinobu Matsumura and Tetsuaki Tsuchido	161
CHEMISTRY:	
Electrical Conductivity of Pyrolyzed Polyimide with Polymer Structure	169
[No.42] 2000	
MECHANICAL ENGINEERING:	
Non-destructive Evaluation by Ultrasonic Inspection of Tension Shearing Strength of	
Spot-welded Joints — Application of Fractal Dimension and Neural Network — Masanori TAKUMA and Noboru SHINKE	1
Estimation of Stress Imposed on a Structure's Member Parts by Magnetomechanical	_
Acoustic Emission — Application of Displacement Sensor and Wavelet Transform —  Masanori TAKUMA and Noboru SHINKE	
INDUSTRIAL ENGINEERING:	
Regular and Independent Features of the Limiting Velocity of Smooth Pursuit Eye Movements Ken HORII and Kentaro KOTANI	31

ELECTRONICS.	
A New Basic Element for Neural Logic Circuits: Proposal and Simulations	
Quantization Effect in Temperature Dependence of Threshold Voltage of Extremely-Thin SOI MOSFETs	41
Atsushi NAKAKUBO, Hiroshi NAKATSUJI and Yasuhisa OMURA Influence of Oxygen Dilution on Extremely-Thin Oxide Growth Mechanisms	57
in the Rapid Thermal Oxidation of Monocrystalline Silicon	67
Valence Band Electron Direct-Tunneling Current in SiO <sub>2</sub> Films	77
CHEMICAL ENGINEERING:	
Studies of Separation Behavior and Mechanism of Plastics, PVC and PET by Flotation Method	
········ Yuko TAKAMI, Junji TERADA, Shigeno MATSUMOTO, Hideki YAMAMOTO and Junji SHIBATA	85
Particle Size Classification using a Centrifugal Air Classifier under Reduced Pressure	101
APPLIED CHEMISTRY:  Diastereo- and Enantioselective Routes to Some Hydroxy Spiroacetals	
CIVIL ENGINEERING:  Reduction of Environmental Loads Through Construction of an  Enough Notwork between Wests Disposal and Sowner Treatment Plant	
Energy Network between Waste Disposal and Sewage Treatment Plant	145
Process into a Refuse Deposition System Kazuko NAKANO, Hiroyuki MIURA, Yasuhiko WADA and Shinichi MURAKAMI	155
ARCHITECTURE: Analysis of Sound Scattering by a Baffled Membrane	171
MATERIAL SCIENCE AND ENGINEERING: Wear Resistance of SKH51 Coated with TiN and CrN Films After Plasma Nitriding Masao Yakushiji, Katsuyoshi Arai, Noriyuki Nutaba and Masaru Ikenaga	183

[No.43] 2001
MECHANICAL ENGINEERING:
End Milling Characteristics Using Cold Air and Dry-ice Flow Koichi KITAJIMA, Koji MIYAZAKI, Shuji MINAMINO, and Takechi AKAMATSU 1
Basic Study on Damage Restraint of Coating Film
Masanori TAKUMA, Noboru SHINKE, Motoaki KIMURA and Yoshikazu NIWA 11 Basic Study on Structural Recognition of Functionally Gradient Material
INDUSTRIAL ENGINEERING:
An Axiomatic Representation of a Three-element Schema Technique for Software Design Kentaro Kotani, Atsushi Maeda, Ken Horii and Yutaka Kitamura 31
ELECTRONICS:
Two-Dimensional Quantization Effect on Indirect Tunneling in an Insulated-Gate Lateral pn-Junction Structure with a Thin Silicon Layer
Overturn Mechanical Influence on Flat Band Canasitance for Metal Oxide Semiconductor
Quantum Mechanical Influence on Flat-Band Capacitance for Metal-Oxide-Semiconductor Structures with Nanometer-Thick Silicon Oxide Film and the Impact of Oxide Charge
Evaluation Akira Shimizu, Hiroshi Nakatsuji and Yasuhisa Omura 67 Theoretical Consideration for Carrier Transport Noise in Non-equilibrium Steady-State Operation of Metal-Oxide-Semiconductor Field-Effect Transistor
Characterization of Defects Contributing to Stress-Induced Leakage Current in Nanometer-Thick Oxide Films by Monte-Carlo Simulation
Proposal of a Partial-Ground-Plane (PGP) Silicon-on-Insulator (SOI) MOSFET
for Deep sub-0.1- μ m Channel Regime Shin-ichiro YANAGI, Atsushi NAKAKUBO and Yasuhisa OMURA 107
APPLIED CHEMISTRY:
Carbon-Bromine Bond-Forming Reactions of Triflates with Grignard Reagents
Flocculation Behavior of TiO <sub>2</sub> in Aqueous Solution Containing Hydrophilic Polymers
CIVIL ENGINEERING:
Evaluation of Advanced Treated Sewer Reue in Urban Rivers for Environmental Improvement by Inhabitants
Hiroyuki MIURA, Yasuhiko WADA and Masami WATANABE 131
Evaluation of Eco-Efficiency of Water Self-Support System for an Urban Area
ARCHITECTURE:
The Relationship Between Readability and Conditions of the Three Visual Factors of Letters in a Document

MATERIAL SCIENCE AND ENGINEERING:	
Frictional Wear Characteristics of Ti-6Al-4V Alloy Plasma-Carburized in	
CH <sub>4</sub> -Ar-H <sub>2</sub> Mixed Gas Atmosphere with Low CH <sub>4</sub> Concentration	
Zenshiro OKAMOTO, Hiroshi HOSHIKA, and Masao YAKUSHIJI	167
Development of Translator Between Step/AP203 and VRML for Product	
Information of Steel Highway Bridges	
Ichizou MIKAMI, Shigenori TANAKA and Satoshi KUBOTA Simultaneous Loading Factor for Fatigue Design of Highway Bridges Considering	179
Hourly Change of Traffic Conditions	
Masahiro SAKANO, Shinji FUJIWARA and Arata HORI	197
A New Reinforcing Method for Steel Beams Using Pre-Stressed Steel Plates	205
Fatigue Damage Assessment of Existing Steel Highway Bridges based on	
Variable Amplitude Fatigue Test Results	
Masahiro SAKANO, Hiroyuki TADANO, Tomoe OGURA, Taiichi KAGAYAMA,	
Yoshimasa SAWANOBORI and Fuminobu OKUNISI	213
Extremely Low-Cycle Fatigue Crack Initiation Life Evaluation for the	
Thread Part of an Anchor Bolt	
·······Masahiro SAKANO, Tsutomu HANATANI, Yu SAKON, Atsushi MIYANISHI,	
Yoshihei HORIE, Tsutomu NIINA, Hiroshi AKETA, and Shinji TAKABA	219
Fatigue Damage Assessment of Steel Bridge Members by Referring to Damage	
to the Paint Coating	
Masahiro SAKANO, Hisaki NAGURA, Daisuke SHINOBE, Yoshihei HORIE,	
Hiroshi KOBAYASHI, and Syun'ichi KAWACHI	225
Predicting Ultimate Strength of Steel Stub Columns with Longitudinal	
and Transverse Stiffeners	
Kazuhisa NIWA and Ichizou MIKAMI	231
[No.44] 2002	
ELECTRONICS: Sub-100-nm Partial-Ground-Plane (PGP) Silicon-on-Insulator (SOI) MOSFET Structure	_
· · · · · · · · · · · · · · · · · · ·	3
for Radio-Frequency and Digital Applications  Yasuhisa OMURA, Atsushi NAKAKUBO and Shinichiro YANAGI	1
	1
Impact of Transport Noise Enhancement in Scaled-down MOSFET  Daijiro Sumino and Yasuhisa Omura	17
Intrinsic Aspects of Hard Breakdown in a 2.2-nm-thick SiO <sub>2</sub> Film	17
	29
Significant Initial Stress under Cyclic Application of Constant-current Stress to	43
Thin SiO <sub>2</sub> films Akira MASUO, Kenji KOMIYA and Yasuhisa OMURA	35
Noise Characteristics and Modeling of Silicon-on-Insulator Insulated-Gate pn-Junction	55
Devices	43
Reconsideration of Off-Leakage Current Estimation of Sub-100-nm SOI MOSFETs	10
<del>-</del>	
and Device Selection for Applications	
and Device Selection for ApplicationsShin-ichiro YANAGI and Yasuhisa OMURA	55
Shin-ichiro YANAGI and Yasuhisa OMURA	55
	55 61

## CHEMICAL ENGINEERING:

Crystallization-stripping of Sm  $\mbox{ ( }\mbox{1}\mbox{I}\mbox{ )}$  and Co  $\mbox{ ( }\mbox{I}\mbox{ )}$  as Composite Oxalates

and Their Physical Properties	
Takashi KUMANO, Kei SASABE, Norihiro MURAYAMA, Hideki YAMAMOTO and Junji SHIBATA	67
APPLIED CHEMISTY:	
Antioxidant Activity of Heteroatom-Bridged Phenol and Catechol Derivatives	77
Effect of Sodium Dodecyl Sulfate on The Gelling of Tetraethyl Orthosilicate	85
CIVIL ENGINEERING:	
Ductility of High Performance Steel Plates Under Uniaxial Compression	
Kazuhisa NIWA, Ichizou MIKAMI and Yuji MIYAZAKI Fatigue Behaviour of 80-year-old Railway Girders	91
····· Masahiro SAKANO, Shigeru YAMABE, Makoto MIYANO, Hironori NAMIKI, Makoto ABE, Atsushi YAMAMOTO and Jun OYAMA	107
Reinforcement of a Steel Beam Using a Heated High-Strength Steel Plate Masahiro SAKANO, Hironori NAMIKI, Noriyo HORIKAWA, Shigeru YAMAMOTO,	110
Hiroyuki TADANO, Yohei OSAKADA and Kazutaka OKABE The Influence of Coarse Aggregate Properties and Crack Deformation Behavior in Shear Crack Analysis	113
Nearalen CHEA and Toshihide TOYOFUKU	119
Analysis of CSO Control with Storm Water Reservoir  Yasuhiko WADA, Hiroyuki MIURA and Masakado IWAKURA	129
Influence of Highway Runoff Pollutants on The Water Quality of Lower-Lying Areas	
Evaluation of Multifunction Storm Water Reservoir	155
[No.45] 2003	
CHEMICAL ENGINEERING Hydrothermal Synthesis of Potassium-Chabazite from Coal Fly AshMitsuaki TANABE, Shinsuke YOSHIDA, Norihiro MURAYAMA, Hideki YAMAMOTO and Junji SHIBATA	1
APPLIED CHEMISTRY	
Comparison of Heteroatom-Bridged Analogues of Hydroxy- and	
Aminodiphenylmethanes for Antioxidant Activities, II Tomihiro NISHIYAMA, Yumi ENDO and Fuyu OGAWA	9
CIVIL ENGINEERING	
Long Span H-Beam Bridge with Steel Plate Pre-Stressing Masahiro SAKANO, Hironori NAMIKI, Kazutaka OKABE and Tomoki SAKATA	15
High Cycle Fatigue Testing of Steel Beams with Lap Joints on the Bottom Flange	10
Hokuto KOGA and Kentaro MATSUMOTO	21

The Monitoring of Endocrine Disrupting Chemicals of Combined Sewer Overflows  Taira OZAKI, Yasuhiko WADA and Hiroyuki MIURA  Renewal of Urban Water Supply System from the Viewpoint of Ecodesign  Taira OZAKI, Yasuhiko WADA, and Hiroyuki MIURA	27 35
ARCHITECTURE Estimation of the Area Effect of a Sound Absorbent Surface by Using a Boundary	
Integral Equation	
Influence of Background Luminance, Luminance Contrast and Chroma on the Readability and Equivalent Luminance Contrast of Documents	
Naoya HARA, Ichiro NAMBA and Tarow NOGUCHI	53
INFORMATION PROCESSING Effect of Torsional Oscillation of Full-Scale Wooden-Framed House Models on Earthquake Response Chracteristics	
	63
[No.46] 2004	
MECHANICAL SYSTEMS ENGINEERING  Numerical Simulation of Flow in a Collapsible Tube with Large Local	
Deformation due to Cross-sectional BucklingKiyoshi BANDO, Akihiro DOUZONO and Kenkichi OHBA	1
CHEMICAL ENGINEERING Synergistic Effect of Ni Extraction and Its Application for Waste Solution in Ni Non-electric Plating	
Norio YOSHIKAWA, Masato YAJIMA, Norihiro MURAYAMA,	
Hideki YAMAMOTO and Junji SHIBATA Recovery of Phosphoric Acid from Waste Acid Mixture with Solvent Extraction	11
·······Yoshinori MOTODA, Masataka MORIKAWA, Norihiro MURAYAMA, Hideki YAMAMOTO and Junji SHIBATA	21
APPLIED CHEMISTRY	
Antioxidant Interaction between Chromanol and Benzofuran-2-ones	31
Inhibition of Autoxidation of Linoleic Acid by 1,3-Indandiones having Enolizable Group Shingo Shiotsu, Hironori Wakimoto, Yusuke Takino and Tomihiro Nishiyama	p
CIVIL AND ENVIRONMENTAL ENGINEERING	
Accumulation and Runoff Simulation Model of Benzo (a) pyrene from Automobile Exhaust Emission······················· Taira OZAKI and Yasuhiko WADA Multi Purpose Assessment of Detention Storage Facilities for Pollution Control	47
and Water Reuse in Urban Area Taira OZAKI and Yasuhiko WADA	57

Fatigue Test of Welded Girders made of Fatigue-Proof Steel	
······ Masahiro SAKANO, Kentaro MATSUMOTO, Daisuke NIMURA, Kazushige ARIMOCHI, Noboru KONDA, Atsushi ISODA and Shinsuke KOND	0 67
ARCHITECTURE  A Chart for Estimating the Distance Attenuation of Flanking Sound Passing throug Open Windows in the Exterior Wall of Adjoining Rooms and Its Experimental Verification	
【No.47】2005	
MECHANICAL SYSTEMS ENGINEERING Reducing the Number of Long-term Items: Optimal Strategy for a Bag-packing Prob	
CHEMICAL ENGINEERING  Hydrothermal Synthesis of Potassium-Type Zeolite from Coal Fly Ash and Evaluation of its Physical Properties  Tomoya TAKAHASHI, Norihiro MURAYAMA,	
Hideki YAMAMOTO and Junji SHIBAT Regeneration Technology of Tetramethylammonium Hydroxide Using Ion Exchange Resin Tomohiro YANASE, Norihiro MURAYAMA, Hideki YAMAMOTO and Junji SHIBAT	
APPLIED CHEMISTRY	
Antioxidant Activity of Intramolecularly Hydrogen Bonded 2-Aminophenols Yumi ENDO, Masahiro MURAYAMA, Fuyu OGAWA and Tomihiro NISHIYAM. Antioxidant Activity and Oxidation Products of 1,2,3,4-Tetrahydroquinoxalines	А 31
in Peroxyl Radical Scavenging Reactions, Part II	A 39
Benzofuranol and Thiopropionate Group, Part II  Yu Andoh, Masahiro Tanaka, Tsutomu Hirohashi, Tomoyuki Okamoto  and Tomihiro Nishiyam	A 49
SYSTEMS MANAGEMENT ENGINEERING  Effect of Alcohol on the Cerebral Function Observed in Eye Movements during  Tracking a Visual Target	
Ken HORII, Akihiro KASUMI, Jun NAKAMURA and Kentaro KOTAN	п 57
ARCHITECTURE	
Walking Environments for the Visually-Handicapped: Recognition of Spaces in a Geometric Model Laboratory	. 2=
Yoshihiro KAMETANI Junko KISHIGAMI and Kokichi CHIBAN.	1 65

MATHEMATICS Elementary Proof of Schweitzer's Theorem on Hilbert C*-Modules in which All Closed Submodules are Orthogonally Closed Masaharu KUSUDA	75
[No.48] 2006	
SYSTEMS MANAGEMENT ENGINEERING How Sensitive Are Our Eyes to Text Difficulty? Application of Schema Fixation Curves to Japanese Text	1
MECHANICAL SYSTEMS ENGINEERING A Pattern Dynamics Approach to Two-Phase Flow Dynamics Mamoru Ozawa, Masahiro Shoji, Hisashi Umekawa and Ryosuke Matsumoto	13
ELECTRONICS, INFORMATION AND SYSTEMS Semi-Classical Consideration of Velocity Overshoot Effect on Transport Noise in Short-Channel MOSFETs Akira MASAOKA, Daijiro SUMINO and Yasuhisa OMURA Theoretical Consideration on Influences of Cavity or Pillar Shape on Band Structures of Silicon-Based Photonic Crystals	23
	41
Promoting Effext of CO2 on the Degradation of Polyethylene to Ethylene and Propylene Over HZSM-5 Catalyst	53
BIOTECHNOLOGY Antimicrobial Activity of Peracetic Acid Preparation in the Presence of Various Compounds	
Watsumura, Shuhei Nishikawa, Hiroki Tanaka, and Tetsuaki Tsuchido	63
CIVIL AND ENVIRONMENTAL ENGINEERING  The Relation Between Strength of Ground Improvement and P-Wave Velocity when Using the Jumbo-Jet Special Grouting Method	
Reinforcing a Notched steel Girder End by Steel Plate Pre-Stressing	71 77

## ARCHITECTURE

A Study on the Process of Formation of Intimate Spatial Realations Between the City and Universities in Helsinki

Sakiko TANAKA, Hiroyuki MARUMO and Hikaru KINOSHITA	87
MATHEMATICS Refined Solutions of Optimal Stopping Games for Symmetric Markov Processes	
[No.49] 2007	
MECHANICAL ENGINEERING Development and Application of an Ultra-miniaturized Blood Collecting/ Testing System by MEMS	
Sumio NAKAHARA, Seiji AOYAGI, Norio TAGAWA, Yasuhiko ARAI, Kiyoshi BANDO, Susumu TAMURA, and Tsutomu TAJIKAWA	1
ELECTRONICS, INFORMATION AND SYSTEMS Compact Equivalent-Circuit Model for Snap-Back Phenomena in Ultra-Thin SOI MOSFET's and Practical Guideline for ESD-Protection Device Design	11
ELECTRONICS, INFORMATION AND SYSTEMS Impacts of Geometrical Aspect Ratio on Drivability and Short-Channel-Effects of Multi-Gate SOI MOSFET's Hideki Konishi and Yasuhisa Omura	19
ELECTRONICS, INFORMATION AND SYSTEMS  Performance Evaluation of Fully-Depleted SOI MOSFET-Based Diodes Applied to Schenkel Circuit for RF-ID Chips  Takuta TAMURA, Shigeo NAMURA, Yasuhisa OMURA and Yukio IIDA	29
APPLIED CHEMISTRY  Further Discussion of Correlation between Brittleness and  Network Structure of Triallyl Isocyanurate Resins  Akira Matsumoto, Tomoya Matsuda, Chikaomi Hirao, Hiroyuki Aota,  Yoshihiro Takayama and Hiroyuki Toridome	39
CIVIL AND ENVIRONMENTAL ENGINEERING  Plastic Behaviour of a Steel Bridge Pier under Seismic Loading	55
CIVIL AND ENVIRONMENTAL ENGINEERING  Evaluation of a Real-Time Control System for Combined Sewer Networks	61

ARCHITECTURE	
Boundary Element Method for Computing Transient Acoustic Waves in a Room	0.0
······ Yasuhito KAWAI	65
ARCHITECTURE	
Recreational Spaces for the Visually-Handicapped: Taking Part in a Guided bus Tour	
····· Yoshihiro KAMETANI, Junko KISHIGAMI and Kokichi CHIBANA	79