

**Contents of the Preprints for the 65th Grand Lecture
Meeting of The Iron and Steel Institute of Japan.**

C O N T E N T S

Lect. No.	Title	Lecturer
1	On the Construction of Tobata No. 3 Blast Furnace.	<i>Narumi KOGA, et alii.</i> ...279
2	On the Construction of Kure No. 1 Blast Furnace and the Operational Data of the Furnace after Blowing-in.	<i>Goro WATANABE, et alii.</i> ...281
3	On Blowing-in of the Higashida No. 1 Blast Furnace.	<i>Keisuke MORI, et alii.</i> ...283
4	On the Operation of Tobata No. 3 Blast Furnace.	<i>Noritoshi INAGAKI, et alii.</i> ...287
5	Full-Automatic Weighing and Charging System of No. 3 Blast Furnace at Tobata.	<i>Takao YAMAMOTO, et alii.</i> ...288
6	Wearing Mechanism of Fireclay Bricks on Blast Furnace Wall and Bottom. (Study on wearing mechanism of blast furnace linings—I).	<i>Keisuke HIRAGUSHI, et alii.</i> ...290
7	On a Trouble of Large Bell Falling-Down in No. 1 Blast Furnace at Hirohata Works.	<i>Syunsaku SHIMADA.</i> ...292
8	Use of Oxygen for Promoting Combustion in a Hot Stoves with the Oil Injection into Blast Furnace.....	<i>Toshitaka TSUTSUMI, et alii.</i> ...294
9	Process of Reduction and Behavior of Carbon-Reducing Agent in a Kiln. (Study on the pre-reduction of iron sand with a rotary kiln—III)	<i>Hideo ARAKAWA, et alii.</i> ...297
10	On the Operation of No. 1 Blast Furnace with Oil Injection at Nishijima.	<i>Toshio NIINOMI, et alii.</i> ...299
11	Some Considerations on Oil Injection into a Blast Furnace....	<i>Koichi KURODA, et alii.</i> ...301
12	Atomizing and Combustion of Fuel Injected through Blast Furnace Tuyeres or Blow Pipes.	<i>Teruo SHIMOTSUMA.</i> ...303
13	On the Limit of Rate of Oil Injection into the Blast Furnace.....	<i>Zensaku AYUBA, et alii.</i> ...306
14	Observations of Oil Injection into a Blast Furnace at Hirohata Works.	<i>Shinjiro WAKURI, et alii.</i> ...307
15	Carbon Deposition and Solution Loss in a Blast Furnace. (Iron ore reduction in a blast furnace and coke rate—I)....	<i>Akitoshi SHIGEMI, et alii.</i> ...309
16	Application of Multiple Correlation to Blast Furnace Practice.	<i>Tsuneo MIYASHITA, et alii.</i> ...312
17	Results of Heavy-Oil Injection into the Blast Furnace.	<i>Shigeyoshi YABE, et alii.</i> ...314
18	Theoretical Consideration on Coke Ratio of the Blast Furnace Operation. (Studies for the improvement in blast furnace Practice—I)	<i>Fumitada NAKATANI, et alii.</i> ...316
19	Reduction of Iron Ores and Sinter in High Temperature Range. (Studies for the improvement in blast furnace practice—I)	<i>Fumitada NAKATANI, et alii.</i> ...319
20	Use of Iron Sand in a Small Blast Furnace.....	<i>Koretaka KODAMA, et alii.</i> ...322
21	On Softening of Blast Furnace Burdens.	<i>Yoshihiro IZEKI, et alii.</i> ...324
22	Viscosity and Fluidity of High-Alumina Slag.	<i>Ryosuke TAKAHASHI, et alii.</i> ...327
23	Some Studies on Microstructure of Self-Fluxing Sinter....	<i>Hisashi KISHITAKA, et alii.</i> ...329
24	Effects of the Size and Mixing Rate of Return Ore on Sintering Properties.	<i>Shigezi OOBUCHI, et alii.</i> ...330

* To be held on April 3~5, 1963 at University of Tokyo.

- 25 Temperature Distribution of the Sintering Bed. (Studies on sintering process of iron ores with a small sintering apparatus—I) *Yasumoto ŌTAKE, et alii.* ...332
- 26 No. 3 L.D. Sintering Machine at Kawasaki Works. *Yasuto TAKASAKI, et alius.* ...334
- 27 Study on Combustibility in Sintering Process. *Yoshitsugu SATŌ, et alii.* ...335
- 28 Characteristics of Anthracite for Sintering. (Study on fuels for sintering—II) *Shiro Ida, et alii.* ...337
- 29 Basic Study on Measurement of Moisture in Raw Mixture for Sinter with a Neutron Moisture Gauge. *Shigeyoshi HIRANO, et alii.* ...339
- 30 Use of Preheated and Oxygen-Enriched Air for Sintering Iron Ore. *Katsuhiko SATŌ, et alii.* ...342
- 31 Effect of the Fan Capacity on Iron Ore Sintering. *Kazuo MIYAGAWA, et alius.* ...344
- 32 Relation between Ore-Grindability and Optimum Size for Pelletizing. (Comparative studies on sintering and pelletizing—I) *Iwao IWASAKI, et alii.* ...346
- 33 Comparison of Physical and Chemical Properties of Sinter and Pellets. (Comparative studies on sintering and pelletizing—II) *Iwao IWASAKI, et alii.* ...348
- 34 Behavior of Arsenic in Limonite Ore during Iron-Making Process. *Tsuneomi SAKAKIBARA, et alii.* ...350
- 35 Properties of Gunning Mix for Open Hearth Furnaces Hot Repair and its Process of Wear. *Kiyoshi SUGITA, et alii.* ...353
- 36 Improvement of Structure and Increase of Roof Life of Open Hearth Furnace. *Yoshichika MIZUNO, et alii.* ...355
- 37 Progress in Unit of Fuel Consumption of Open Hearth Furnaces. *Takayuki KOYANO, et alii.* ...357
- 38 Use of Various Oxidizing Materials for Open Hearth Furnaces. *Morihiro SHIMABUKURO, et alii.* ...358
- 39 Process Control of Tapping and Ingot-Manufacture in an Open Hearth Steelmaking Plant. (System of simulation of a steelmaking plant—II) *Seiji MASUMOTO, et alii.* ...360
- 40 Hydrogen Control of Raw Materials in an Electric Furnace Steel Plant. *Yasuo ITO, et alii.* ...362
- 41 Refining of Liquid Pig Iron in an Electric Arc Furnace. *Masao OKA, et alii.* ...364
- 42 Behavior of Oxygen during Oxidizing Period in a Basic Electric Arc Furnace. *Yukio NETSU, et alii.* ...366
- 43 Activated Behavior of Reduced Sponge Iron Powders. *Akimitsu ŌKURA, et alius.* ...369
- 44 On the Reduction of Silica-Containing Iron Oxide by Solid Carbon. *Toru TANIMURA, et alius.* ...370
- 45 Effect of Iron Reduced at Various Temperatures on Decomposition of CO. (Reduction of iron oxide by the mixed gas of CO and H₂—II) *Jiro HIRAO, et alius.* ...373
- 46 Speed of Carbon Deposition in Ore Reduction. (Reduction test of ore bed—II) *Tanekazu SŌMA.* ...374
- 47 Process of Dry Classifying Lateritic Iron Ore. *Takeo FURUI, et alii.* ...376
- 48 On Magnetic Separation of Chromium from Nickel-Chrome-Bearing Iron Ore by the Sizing and Magnetizing Roasting Method. *Susumu SAKAI, et alius.* ...378
- 49 Production of Luppe from the Iron Ores Containing Nickel and Chromium. *Kōki GUNJI, et alius.* ...380
- 50 Changes of Coke Properties by Using a Coke Cutter. *Masaaki TOKUHISA, et alii.* ...382
- 51 Coke Manufacture by a Method of Dry Charging. *Toshiaki KANAMORI, et alii.* ...384

- 52 Utilization of Tonnage Oxygen through a Roof Lance in Open
Hearth Furnaces. Kenichi ISODA, et alii. ...386
- 53 Effect of Crystal Size of Calcite on Formation of Clinker in
Calcining. Masao HIRATO, et alii. ...388
- 54 Results of Tar-Dolomite Bricks. (Lining of an oxygen
converter at Amagasaki Works—II) Akira MATSUNAGA, et alii. ...390
- 55 Layout and Operation of the Oxygen Converter Plant at
Chiba Works. Masashi KAWANA, et alii. ...392
- 56 Operation without Mixer in a L.D. Converter at
Kukioka Plant, Yawata Works. Masao TAKEDA, et alii. ...394
- 57 Use of Cold Pig Iron in Oxygen Converters. Kyoichiro SATO, et alii. ...395
- 58 On the Influence of Mn Contents in Hot Metal in L.D. Process. (Some
study on the influence of hot metal components—I) Narito KIMURA, et alii. ...397
- 59 Some Experiments of Acceleration of
Dephosphorization in an Oxygen Converter. Kazuhiko FUJIWARA, et alii. ...399
- 60 Dephosphorization in L.D. Converter. Motohiko NAKATANI, et alii. ...400
- 61 Rotation Rate of Ladles Used in an L.D. Plant. Susumu OKU, et alii. ...403
- 62 Operational Results of a 130t Oxygen Converter with
Oxygen-Generating Equipment. Koichi TAGIRI, et alii. ...405
- 63 Effect of Some Operational Conditions on Metal Yield.
(On the operation of an L.D. converter—I) Hachiro ARAKI, et alii. ...407
- 64 Rephosphorization Factors at Tapping of
L.D. Converter. Osamu MUROGA, et alii. ...408
- 65 Computer for Controlling the End-Point Temperature.
(Study on computer control of L.D. process—I) Issei FURUGAKI, et alii. ...410
- 66 Direct Measurement of Oxygen Pressure in High
Temperature Gases. (Study on oxygen concentration
cells at high temperature—I) Kazuhiro GOTO, et alius. ...413
- 67 Measurement of Chemical Activities in Lead-Tin
Binary Liquid Solution. (Study on oxygen concentration
cells at high temperature—I) Kazuhiro GOTO, et alius. ...414
- 68 Effects of Carbon and Silicon on the Rate of Absorption of
Nitrogen in Liquid Iron. (Studies on the rate of
absorption of nitrogen in liquid iron—I) Takao CHŌ, et alius. ...416
- 69 Some Studies on Identification of Nonmetallic Inclusions
with an Electron-Probe Microanalyser. Akira MASUI, et alii. ...418
- 70 Form and Composition of Sulfides in Carbon Steel.
(Study on nonmetallic inclusions—II) Haruo SHIMADA, et alii. ...420
- 71 Dissolution and Dispersion of Lead and Other Metals in
Molten Steel. (Study on metallic inclusions in steel—I) Toru ARAKI, et alii. ...421
- 72 Indication of the Resistance of Refractories to
Molten Slag. Susumu MINOWA, et alii. ...423
- 73 Oxidizing Refining of Crude Ferronickel by a Shaking
Converter. (Metallurgical uses of a shaking
converter—I) Yoshishige NAGOYA, et alii. ...425
- 74 Quartz Formation in Steel Deoxidised by Silicon. Norikazu KURI, et alii. ...427
- 75 Deoxidation Processes with Silicon and Manganese
in the Static Iron Melt.
(Kinetic study on deoxidation of steel—V) Nobuo SANO, et alii. ...429
- 76 Al Deoxidation and Nonmetallic Inclusions in Steels.
(Study on nonmetallic inclusions in steels—V) Iku UCHIYAMA. ...431
- 77 Nonmetallic Inclusions in Fe-Cr-O System.
(Study on deoxidation products—I) Takashi FUKUYAMA, et alii. ...433

- 78 Nonmetallic Inclusions in Steel Derived from Refractories and Deoxidizers. (Study on the origin of nonmetallic inclusions in steel—I) *Satoru MATSUMI, et alii.* ...435
- 79 Macroscopic Inclusions Caused by Air Oxydation. *Kazuteru SENDA.* ...438
- 80 Utilization of a Mould Yard. *Yashunori YANAGIHARA, et alii.* ...439
- 81 On Rationalization in Teeming Practice. *Tsuneo SUZUKI, et alii.* ...441
- 82 Influence of the Ingot Size on Semi-killed Steel Ingots. *Susumu SATŌ, et alii.* ...443
- 83 Production of Bottom-Poured Semi-Killed Steel. *Kiyomi TAGUCHI, et alii.* ...445
- 84 Influence of Electric Arc Hot-Top on the Internal Structure of Heavy Ingots.
(Studies on the inverse-V segregation of ingots—II) *Noboru HIRAKA, et alius.* ...447
- 85 Relations between Inverse-V Segregation and Grain Structure in Heavy Ingots. (Studies on the inverse-V segregation of ingots—III) *Shinsaku ONODERA, et alius.* ...448
- 86 On the V-Pattern of the Small Steel Ingots and Paraffin Solidified. (On the macrostructure of small Ingots—II) *Masato TAKESHITA, et alii.* ...449
- 87 Segregation in Large Ingots of Rimmed and Capped Steels. *Taiji ARAKI, et alii.* ...452
- 88 Properties of Rimmed Steel Ingots Having Large Ratio of Width-to-Thickness. *Masaru TOKUSHIGE, et alii.* ...453
- 89 On Large Capped Steel Ingots. *Masato NAKAMURA, et alii.* ...456
- 90 Solute Distribution during Solidification Process. *Masahiro SHINMEI, et alii.* ...458
- 91 Results of Preliminary Experiments on the Relation between Solidifying Rate and Segregation.
(Studies on the solidification of ingots—I) *Akitsugu MOMOSE, et alii.* ...459
- 92 Relation between Solidification Rate and Segregation in Ball Bearing Steel.
(Study on the casting of ingot—I) *Tokuji KIMURA, et alii.* ...461
- 93 Ladle Degassing of the Rimmed Steel.
(Study on the vacuum treatment of molten steel—II) *Masuta ŌKUBO, et alii.* ...463
- 94 Change in Compositions on Consumable Electrode Vacuum Arc Melting. *Takeshi KUDŌ, et alii.* ...465
- 95 On the Direct Extrusion of “Cons-el Arc” Melted Stainless Steels.
(Studies on the “Cons-el arc” melting of steels—I) ... *Yoshihiro FUKUHARA, et alii.* ...468
- 96 On the “Cons-el Arc” Melted Steam Turbine Blade Material.
(Studies on the “Cons-el arc” melting of steels—II) ... *Yoshihiro FUKUHARA, et alii.* ...469
- 97 On the Gas Turbine Rotor Shaft Made of “Cons-el Arc” Melted Material.
(Studies on the “Cons-el arc” melting of steels—III) ... *Yoshihiro FUKUHARA, et alii.* ...471
- 98 On the Working Load of Slabbing Mill Rolls.
(Study on slabbing mill rolls—I) *Tsuruo SHIBAZAKI, et alius.* ...473
- 99 On the Strength to Repeated Load of Slabbing Mill Roll Materials.
(Study on slabbing mill rolls—II) *Tsuruo SHIBAZAKI, et alius.* ...474
- 100 Slip on Rough Rolling of a Hot Strip Mill. *Kouji WADA, et alii.* ...476
- 101 Measurement of Rolling Load at Finishing Stands of the Continuous Hot Strip Mill. *Suemasa YASUDA, et alii.* ...477
- 102 Experience in Down-Coiler Operation of a Hot Strip Mill and a Discriminant of Coiling Conditions.
(Study on a down-coiler for hot strip mill—I) *Tatsuya KIMURA.* ...479

103	Calculation of the Required Power for Pinch Rolls and a Mandrel, and Comparison of the Results with Experience. (Study on a down-coiler for hot strip mill—I)	Tatsuya KIMURA, et alii.	...481
104	Analysis of Strip Cooling and its Results. (Study of strip cooling on a hot-run table of hot strip mill—I)	Tatsuya KIMURA, et alii.	...482
105	Application of the Strip-Cooling Formula to Actual Operations. (Study of strip-cooling on a hot-run table of a hot strip mill—II)	Kouji WADA, et alius.	...484
106	Effect of Setting Conditions on the Metal Flow in Mannesmann Piercing Process. (Studies on the piercing process with model plasticine billets—I)	Kenzo KATO, et alii.	...486
107	Effect of Rotary Straightening on the Size and Hardness of Tubes.	Sadao SIRAFUJI, et alii.	...488
108	Study on the Metal Flow in Steel-Tube Drawing.	Kōichiro MIYAUCHI, et alius.	...490
109	On the Warm Drawing of Low-Alloy Steel.	Teiji ASADA, et alius.	...491
110	An Examination of Hot Impact-Extrusion of Steels.	Tomoo KUMABE, et alii.	...493
111	Structures and Mechanical Properties of Hot Impact-Extruded Steels.	Masatoshi SUZUKI, et alii.	...495
112	Studies on a Planetary Mill.	Teruo HIROSE.	...496
113	On the Thickness-Control Method in Hot Rolling of Flat Spring Steel.	Tadayoshi NODA, et alii.	...498
114	Effects of Generating Conditions on Compositions of Exothermic-Type Controlled Gas.	Masabumi YASUDA, et alius.	...500
115	Studies on a Scale-Free Heating Furnace. (Scale-free heating of steel without a gas generator—I)	Keizo KINOSHITA, et alius.	...502
116	Study on Batch-Type Furnace.	Syūhei TERAO, et alii.	...504
117	Preparation of 6~7% Silicon Steel Plate by Nonporous Siliconizing and Homogenizing Treatment.	Masami ONISHI, et alius.	...505
118	Spring-Back Test for Tinplate and Other Sheet Materials.	Tan HASHIDA, et alius.	...507
119	Influence of Hot Strip-Rolling Conditions on the Strain Aging of Low-Carbon Steels. (Study on the hardness and fluting sensitivity of tinplate—I)	Etsuro SHUTO.	...509
120	Study on the Yield-Point Elongation of Low-Carbon Steels. (Study on the hardness and fluting sensitivity of tinplate—I)	Etsuro SHUTO.	...511
121	Some Investigations into the Factors which Control the Sheet-Metal Formability.	Jirō YAMAMOTO, et alii.	...513
122	Effects of Refining Practice on Sand Seam. (Studies on sand seam in low-carbon killed steel—I)	Masahisa TATE, et alii.	...514
123	Effects of Pouring Practice on Sand Seam. (Studies on sand seam in low-carbon killed steel—I)	Yoshio SETTAI, et alii.	...516
124	Nonmetallic Inclusions and Their Distributions in Semikilled Steel Ingots.	Yukiyoishi ITOH, et alii.	...518
125	Distributions of Nonmetallic Inclusions in Big-End-Down Ingots.....	Takashi MATSUKURA, et alius.	...520
126	Relation between Open Hearth Operations and Nonmetallic Inclusions of Semikilled Steel.	Masao TSUTSUI, et alii.	...522
127	Few Comments on Ingot Moulds Cast from the Blast Furnace Molten Iron and Cupola Iron.	Masami HASHIMOTO, et alii.	...525
128	Effect of Tin Addition on Ductile Cast Iron for Ingot Moulds.	Michio FUKUDA, et alii.	...527
129	Effects of Nickel and Chromium on Properties of Structural Carbon Steel. (Studies on effects of metallic impurities on properties of steel—I)	Shiro YOSIMATU, et alii.	...529

- 130 Relation between Nonmetallic Inclusions and Fatigue
Limits on the SC-Grade Carbon Steel.Shoichiro KOMAZUKA, et alii. ...531
- 131 Heat Treatment of Low Ni-Cr-Mo-V-B High-Tensile
Steel.Toshimi YAMANE, et alii. ...533
- 132 Discrimination of Austenite Grain Sizes and Mixed Grain
Sizes of Finished Steels by "Lineal Analysis."
(Study on grain size of steel- II)Atsumasa OKADA. ...535
- 133 Uranium Addition to 0.3~0.4% Carbon Steels. (Influence
of uranium addition on iron and steel- II)Ichiro Onoda, et alius. ...536
- 134 Behavior of Niobium Carbides and Niobium Nitrides
in Steel. (Fundamental study on niobium added
steel- I)Ko YAMAGUCHI, et alii. ...538
- 135 Study on Titanium Sulphides and Niobium Sulphides in Steel....Katsuo KANO, et alii. ...540
- 136 Study of Fog-Quenching Method.Tadataka GOTŌ, et alii. ...541
- 137 Impact Tensile Test of Temper-Embrittled Steels at
Low Temperature. (Measurement of tensile properties
of steels with a high-speed impact-testing machine—VIII) ...Masanobu OHMORI, et alii. ...544
- 138 Low-Temperature Properties of Some Hot-Finished
Tubes of Killed Steel. (Studies on low-temperature
properties of steel tubes—II)Akira KOYANAGI, et alii. ...545
- 139 Some Problems of Drop Weight Test.Shoichi NAKANISHI. ...548
- 140 Mechanical Properties of Titanium-Bearing Steels
for Rapid NitridingKunihiro TSURUMI, et alii. ...550
- 141 On High-Mo Case-Hardening Steel Containing 1.3%Si
or Al. (Study on the case-hardening steel
for elevated temperature service- II)Shotaro ARAKI, et alii. ...552
- 142 Heat-Treatment Behavior of Precipitation-Hardening
Nitriding Steel Containing Ni.Hiroshi SASAKI, et alii. ...553
- 143 Properties of Various Pure Irons. (Study on pure
Iron— I)Toshikatsu OTANI, et alius. ...555
- 144 On the Quenching and Tempering of Low Cr-Mo
Cast Steel.Toshimi YAMANE, et alii. ...557
- 145 Characteristics of Heat Treatment for 4%Mo-Cr-V
Steel.Kosuke MURAI, et alii. ...559
- 146 On the Properties of Si-Cr-Mo-V Steel. (Studies on
the Si-Cr-Mo-V steels for forging dies— I)Tatsuro KUNITAKE, et alii. ...560
- 147 Thermal Fatigue Characteristics of Si-Cr-Mo-V Steel.
(Studies on the Si-Cr-Mo-V steels for forging
dies— II)Tadashi KATOU, et alii. ...562
- 148 Relation between Composition and Hardness of
Precipitation-Hardening High Speed Steels. (Studies
on precipitation-hardening high speed steels— I)Etsujiro YAJIMA, et alii. ...564
- 149 Some Results on Effects of Preliminary Heat Treatments
upon Impact Properties of Medium-Carbon Steels.Takayasu OKADA. ...566
- 150 Study on Trial Manufacture and Properties of
25% and 20% Ni "Maraging" Steels. (Study on high-Ni
ultra-high strength steel— I)Kazuo EBATO, et alii. ...568
- 151 Study on Trial Manufacture and Properties of
18%Ni-Co-Mo "Maraging" steels. (Study on high-Ni
ultra-high strength steel— II)Kazuo EBATO, et alii. ...570

- 152 Study on the Jominy Test, Modified Jominy Test and Heat-Resistance Test of Spring Materials Made of 9% W-Cr-V Steel and Si-Mn Steel.
(Study on the spring materials—II) Hideji Hotta. ...572
- 153 Effects of C%, Cr% and HNO₃ Concentration on Corrosion Resistance of Low C-Cr Steel.
(Study on corrosion resistance of Cr steel—I) Teiji Asada, et alius. ...574
- 154 Some Observation on Corrosion Test of Cr-Ni Stainless Steels. Yasuo OTOGUCHI, et alii. ...575
- 155 Yielded-Point Elongation and Drawability of 13%Cr and 18%Cr Stainless Steels. Keijiro Suzuki, et alii. ...577
- 156 Effect of Ti on the Properties of Boron Stainless Steels.
(Studies on the boron stainless steel for nuclear reactors—III) ... Tsutomu NISHIMA. ...579
- 157 Wear of Perfect Chill Rolls in a Roughing Train of a Hot Strip Mill. (Study on prevention of roll wear in roughing stands in finishing trains of a hot strip mill—II) Tomomi Oka. ...581
- 158 On Continuous Automatic Ultrasonic Flaw-Detection of Steel Plate. Eiji Isono, et alii. ...583
- 159 Effect of Heat-treatment on Microstructure and Mechanical Properties of Low-Carbon Steel. Syūjiro Ono, et alii. ...585
- 160 Influence of Decarburization Zone on Glass Lining.
(Decarburization of mild steel by exothermic atmospheres—I) Koshi Miyazaki, et alii. ...587
- 161 Phase Diagram of Fe-Cr-N System. Masazō Okamoto, et alius. ...590
- 162 Effect of Quenching and Tempering Temperature on Creep Rupture Properties of 1%Cr, 1.25%Mo, 0.25% V Steel. Ryoichi Sasaki. ...591
- 163 Effect of Chemical Composition on the Creep Rupture Strength of a Cr-Mo-V Steel for Steam Turbine Shafts. (Studies on the high-temperature strength of a Cr-Mo-V steel for steam turbine shafts—II) Yūkō Kumada, et alius. ...594
- 164 Influence of Heat Treatment on Creep Rupture Properties of 2.25%Chromium 1%Molybdenum Steel for Boilers. Toru Mimino, et alius. ...595
- 165 Effect of Chromium and Carbon on Ferritic Heat-Resisting Steel. Toshio Fujita, et alii. ...597
- 166 Vacuum Arc Remelted 0.1% C-12% Cr Heat-Resisting Steel. Seikichi Yamada, et alii. ...599
- 167 Applicability of 12% Cr Heat-Resisting Steel to Turbine Shaft forgings. Ryōsuke Homma, et alius. ...601
- 168 Effect of Mo, Co, Ni on Some Properties of 12% Cr Heat-Resisting Steels. Seikichi Yamada, et alius. ...603
- 169 Effect of Duplex Additions of Nitrogen and Boron on Creep Rupture Strength of 18% Cr, 12% Ni Austenitic Heat-Resisting Steels. (Studies on austenitic heat-resisting steels—I) Yoshikuni Kawabe, et alius. ...605
- 170 Study of Improvement in High-Temperature Strength of 316-Type Austenitic Stainless Steel. Eiji Niina, et alii. ...607
- 171 Creep Rupture Strength of Austenitic Heat-Resisting Steels. Toshio Fujita, et alii. ...609
- 172 Effect of Alloying Elements on the Creep Rupture Strength of NA-22H at 1200°C. Yosuke Matsumoto, et alii. ...611

-
- 173 Effect of Molybdenum and Columbium on Properties of High-Nitrogen 25%Cr-28%Ni Heat-Resisting Steels. (Studies on high-nitrogen 25%Cr austenitic heat-resisting steels-II) Ryohei TANAKA, et alii. ...613
- 174 Effect of Chromium and Nickel on 15%Cr-25%Ni Austenitic Heat-Resisting Steels. (Studies on austenitic heat-resisting steels-III) Toshihiko SASAKURA, et alii. ...615
- 175 Spring Properties of Refractaloy 26 Type Alloy at Room Temperature. (Studies on superalloys for spring-I) Kazunori KAMISHOHARA, et alii. ...617
- 176 Spring Properties of Refractaloy 26 Type Alloy at High Temperature. (Studies on superalloys for springs-II) Yoshiaki KANAI, et alii. ...619
- 177 Relation between Deoxidation and Slag Inclusions in Melting Stainless Steel. Rokuo ICHIYASU. ...620
- 178 Effect of Sulphur on Machinability of Austenitic Stainless Steel. Kazuo ITO, et alius. ...623
- 179 On the Hot-Workability of Stainless Steels. Noboru TAKAHASHI, et alii. ...625
- 180 Study on the Multi-Creep Rupture Test. Toshio FUJITA, et alii. ...627
- 181 Spectrophotometric Determination of Manganese in Iron and Steel. Toshiro TOMINAGA, et alii. ...629
- 182 Determination of Hafnium in Steel. (Study on the determination of rare elements in steel-II) Susumu NASU, et alius. ...631
- 183 Determination of Yttrium in Steel. (Study on the determination of rare elements in steel-IV) Susumu NASU, et alius. ...632
- 184 Metallographic Analysis of AlN, TiN and ZrN in Low-Carbon Steel. Eiichi FUJIMORI, et alii. ...634
- 185 Determination of Sulphur in the Fuel. (Study of the determination of sulphur by means of an R.I. tracer-II) TADASHI Endo, et alii. ...636
- 186 Determination of Rare Earths in Basic Slag. (Study on chemical analysis of basic slag-VII) Shigeo WAKAMATSU. ...638
- 187 Application of X-Ray Fluorescent Method to Analysis of Crystal Segregation. Teruo YUKITOSHI. ...640
- 188 Determination of Hydrogen in Cast Iron by Vacuum Fusion Method. Eiichi KATO. ...641
- 189 Analysis of Gas in Steel by Gas-Chromatography Method. (Analysis of gas in steel by vacuum fusion method-VI) Hideo TSUMITA, et alii. ...643
- 190 Accuracy and Reproducibility of Results of Components Determination in the Furnace Atmosphere by Gas Chromatography. Masabumi YASUDA. ...645