

# “Tetsu-to-Hagane”

Vol. 60, No. 13, November, 1974

## Contents

### « Special Issue on Iron-Steel Analysis »

#### Review

- An Expectation for Iron and Steel Analysis.....Teruo IKENO...1729

- Foreword** .....Takayuki SŌMIYA...1734, Hidehiro GOTO...1737

#### Report of the Joint Research Society of The Iron and Steel Institute of Japan

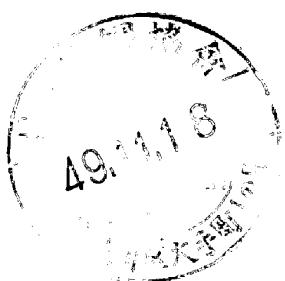
- Report of the Iron and Steel Analysis Committee .....T. IKENO and A. FUKUHARA...1741  
Report of the Chemical Analysis Subcommittee.....K. NIIMI...1744  
Report of the Photoelectric Emission Spectrochemical Analysis Subcommittee  
.....M. IHIDA and I. KAWASHIMA...1752  
Report of the Fluorescent X-Ray Analysis Subcommittee .....K. KAWAMURA...1760  
Report of the Nonmetallic Inclusion Analysis Subcommittee .....K. NARITA...1763  
Report of the Solid Masspectrometric Analysis Committee.....E. SUDO...1767  
Report of the Committee on Iron and Steel Standard Samples  
for Analysis.....T. IKENO and T. OOTSUKI...1768

#### Technical Review

- Chemical Analysis of Iron and Steel.....Shigeo WAKAMATSU...1778  
Atomic Absorption Spectrochemical Analysis for Iron and Steel  
.....Yoshihide ENDO and Yuki NAKAHARA...1787  
Emission Spectrochemical Analysis of Iron and Steel  
.....Kazuo KAWAMURA and Norio MORITA...1795  
X-Ray Fluorescence Analysis of Iron and Steel.....Heiichi MOCHIZUKI...1799  
Gas Analysis of Iron and Steel.....Emiko SUDO and Morimasa SAITO...1805  
On Observation, Indetification, and Determination of Nonmetallic  
Inclusion and Precipitate in Steel.....Kiichi NARITA...1820  
New Physical Methods in State Analysis.....Kichinosuke HIROKAWA...1827  
Automation of Analysis of Iron and Steel.....Ryutaro MATSUMOTO...1843  
Analysis-Separation-Ecological Pollution.....Mutsuaki SHINAGAWA...1854  
JIS System of Analytical Methods for Iron an Steel Industry.....Ohiko KAMMORI...1862

#### Technical Papers

- Application to Analysis of Microamounts of Gallium and Germanium  
in Steel by Using Quarternary Ammonium Salts  
.....S. HARIMAYA, H. OJI, and K. ODASHIMA...1869  
An Unusual Discharge Phenomenon and Its Effect on Pig Iron  
Analysis by Vacuum Emission Spectrometry  
.....K. NARITA, T. MATSUMURA, T. TOKUDA, R. MOROOKA, and E. NONOMURA...1879  
The X-Ray Fluorescence Analysis of Oxide Materials by the Glass  
Bead Sample Technique.....K. KAWAMURA, H. WATANABE, T. UCHIDA, and H. KOGUCHI...1892  
Fluorescent X-Ray Analysis of Iron Content in Iron Ores  
.....T. SHIRAIWA, N. FUJINO, and T. HARADA...1900  
X-Ray Fluorescence Analysis with Si (Li) Semiconductor Detector  
.....T. SHIRAIWA, N. FUJINO, Y. ODA, and K. YAMANAKA...1910



- A Fundamental Study of Fluorescent X-Ray Analysis for Analysis of Non-metallic Inclusions in Steel ..... *K. NARITA, H. HARA, A. MIYAMOTO, K. YAMAMOTO, and T. GOTO*...1920<sup>a</sup>
- Preparation of Sample for the Determination of Hydrogen in Ferroalloys ..... *M. IHIDA and S. TSUCHIDA*...1930<sup>a</sup>
- Analytical Chemical Investigation of Sulfide of Rare Earth Elements in Steel..... *K. KAWAMURA, S. WATANABE, and T. SUZUKI*...1935<sup>a</sup>
- Study on Phase Analysis of Boron in Steel ..... *K. KAWAMURA, T. OTSUBO, and T. FURUKAWA*...1944
- Analysis of Titanium Carbide in Austenite Stainless Steel ..... *T. ISHII and M. IHIDA*...1957
- Fundamental Study on Isolation and Determination of Carbides in Steel ..... *K. NARITA, H. HARA, A. Miyamoto, and H. IWAKIRI*...1962
- An Ion Microprobe Mass Analyzer and Its Application to Iron and Steel Research..... *R. MATSUMOTO, K. SATO, and K. Suzuki*...1980<sup>a</sup>
- Application of Ion Microprobe Mass Analysis of Iron and Steel ..... *K. TSUNOYAMA, Y. OHASHI, T. SUZUKI, and K. TSURUOKA*...1989<sup>a</sup>
- Investigation on the Metallographic Analysis of Small Amount of Aluminium in Steel by Emission Spectroscopic Analysis ..... *M. ONODERA, M. SAEKI, K. NISHIZAWA, T. SAKATA, J. ONO, I. FUKUI, and N. IMAMURA*...2002<sup>a</sup>
- Infrared Spectroscopic Study of Al Oxides in Al-killed Steel ..... *F. HONDA and K. HIROKAWA*...2013<sup>a</sup>
- Automatic Chemical Analysis of Phosphorus and Boron in Steel ..... *K. KAWAMURA, T. OTSUBO, and T. FURUKAWA*...2018<sup>a</sup>
- The Development of an Automatic Apparatus for Dissolving Samples and Its Applications to the Analysis of Steels ..... *K. KAWAMURA, T. WATANABE, and N. MORITA*...2027
- Development of an Automatic Photometric Analyzer ..... *I. TAGUCHI, A. ONO, and R. MATSUMOTO*...2035<sup>a</sup>
- Determination of Total Iron in Iron Ores by Titanium Trichloride Reduction-Organic Redox Indicator Method ..... *M. SAEKI, K. NISHIZAKA, M. IWAMOTO, and A. ADACHI*...2045<sup>a</sup>
- Determination of Small Amounts of Oil in Waste Water ..... *R. MATSUMOTO, I. TAGUCHI, and T. ISHIGURO*...2056<sup>a</sup>
- 
- Abstracts.....2064, Library News.....2074, Notice to Members.....N205,  
Proceedings of the Institute.....N208, Japanese Standard Samples of Iron and Steel.....N212<sup>a</sup>

*Overseas membership: Annual charges: ¥4500 (incl. postage) Initiation fee: ¥450*

© The Iron and Steel Institute of Japan, 1974