

**"Tetsu-to-Hagané" Vol. 75 No. 6, June, 1989**

**Contents**

**Special Lecture**

- Ultra-high Voltage Electron Microscopy and Its Applications to New Research Fields ..... *H. FUJITA*...853

**Commentaries**

- R & D and the Use of Coal-Water Mixtures ..... *H. USUI*...864  
Recent Developments on the Hard Magnetic Materials ..... *A. HIGUCHI*...869  
Mechanical Behaviors of Austenitic Steels and Other Alloys in High Magnetic Fields at Cryogenic Temperatures..... *E. FUKUSHIMA*...879  
Functionally Gradient Composites ..... *M. KOIZUMI* and *K. URABE*...887

**Technical Papers and Technical Reports**

- Strength Characteristics of Carbon Refractories for Blast Furnace ..... *A. FUJIWARA*, *K. UEMURA* and *K. SHIMOMURA*...894  
Direct Analysis of Silicon in Molten Pig Iron by Inductively Coupled Plasma Emission Spectrometry ..... *A. ONO*, *K. CHIBA*, *M. SAEKI*, *H. NINBE* and *S. KASAI*...902  
Mechanism of Dust Formation during Decarburization of High Carbon Iron Melt by Oxygen Blowing ..... *T. OHNO*, *H. ONO* and *R. TSUJINO*...910  
Development of Continuous Colouring Method for Stainless Steels ..... *T. TAKAHARI* and *S. OHTSUKA*...918  
Durability of Various Coated Steels in Sea Water ..... *T. TAKAMATSU* and *H. KATOU*...926  
Modelling of NbC Precipitation Kinetics in Hot Deformed Austenite on Nb Bearing Low Carbon Steels ..... *S. AKAMATSU*, *Y. MATSUMURA*, *T. SENUMA*, *H. YADA* and *S. ISHIKAWA*...933  
Formation of Transformation Textures and Plastic Anisotropy in Hot-rolled Steel Sheets ..... *M. NISHIDA* and *T. KATO*...941  
Effect of the Interaction between Carbon and Substitutional Elements on the Deep Drawability and Texture of Cold-rolled Sheet Steels ..... *K. OSAWA* and *K. KURIHARA*...948  
Castability and Anisotropic High Temperature Strength of Directionally Solidified Ni-base Superalloys ..... *Y. OHTA*, *H. HATTORI*, *Y. G. NAKAGAWA* and *M. YAMAZAKI*...956  
Effect of Aging Heat-treatment Condition on Creep-rupture Strength of Nickel-base Single Crystal Superalloys ..... *T. OHNO*, *R. WATANABE* and *A. YOSHINARI*...964  
Effect of Metallurgical Factors on Long Time Creep Rupture Properties of 1 Cr-1 Mo- $\frac{1}{4}$  V Steel Castings ..... *J. KYONO*, *N. SHINYA* and *H. KUSHIMA*...972  
Influence of Carbon Content on Strength and Toughness of Controlled-rolled Boron Steel ..... *Y. FUJISHIRO*, *T. HASHIMOTO* and *H. OHTANI*...980  
Effects of Aging and Ni on Cryogenic Mechanical Properties of Austenitic Stainless Steels ..... *M. SHIMADA*...988  
Effects of Ni, Co, Mo, Ti and Al Contents on the Delayed-failure Susceptibility of Maraging Steels ..... *K. HOSOMI*, *H. MORIMOTO* and *Y. ASHIDA*...996

## Reports

12th World Congress on Surface Finishing .....	T. ADANIYA...1004
Reports of the 74th General Assembly and the 117th ISIJ Meeting .....	1006

---

The Editor's Postscript .....	1068	Notification from the Information Center of
Notice to Members .....	N193	ISIJ..... N210
Proceedings to the Institute .....	N211	

---

鉄と鋼 定価 2,884 円（本体 2,800 円、消費税 84 円）

Tetsu-to-Hagané Price : ¥2,884.- (including Consumption Tax ¥84.-)

(Only for export, ¥2,800.- excluding Consumption Tax ¥84.-)

## 編 集 委 員 会

委員長 南雲道彦

### 編集運営委員会

阿部 光延	荒木 透	石井 邦宜	江見 俊彦	大河内春乃
大谷 泰夫	尾上 俊雄	岸 輝雄	木原 謙二	國岡 計夫
權藤 永	佐久間健人	雀部 実	新宮 秀夫	新居 和嘉
細井 祐三	榎本 弘毅	宮崎 亨		

### 和文会誌分科会

主 委 員	雀部 実	幹事 大河内春乃		
	浅井 滋生	綾田 研三	石黒 徹	岩田 英夫
	大宝 雄藏	大中 逸雄	大矢 清	片山 裕之
	河井 良彦	川上 正博	河部 義邦	木内 学
	坂木 庸晃	坂本 登	佐藤 駿	志賀 千晃
	下村 隆良	城田 良康	高城 重彰	高橋 政司
	田中 紘一	田村 至	辻川 茂男	長谷川守弘
	藤井 徹也	牧 正志	松尾 孝	三原 豊
	門馬 義雄	八木順一郎	大和 康二	鎌田 征雄
	渡辺 勉			遠藤 孝雄
				金子 智
				栗林 一彦
				清水 正賢
				田口 整司
				肥田 行博
				三吉 康彦
				吉田 勝彦

© COPYRIGHT 1989 社団法人 日本鉄鋼協会

本書に掲載されている記事の無断転載ならびに無断コピーを禁じます。

This publication, or any part thereof, may not be reproduced in any form  
without the written permission of the ISIJ.