



## Contents

---

### Chemical and Physical Analysis

- Stripping Voltammetry in Steel Analysis (Review)  
T. TANAKA .....1

### Ironmaking

- Bulk Breakage Mechanism of Coke in Lower Part of Blast Furnace  
K. YAMAGUCHI and T. UNO .....11

### Chemical and Physical Analysis

- Effect of Gelatin Hardening on Hydrogen Visualization in Steels by Hydrogen Microprint Technique  
S. KURAMOTO, K. ICHITANI, A. NAGAO and M. KANNO .....17
- Visualization of Hydrogen Diffusion Promoted by Stress Gradient and Plastic Deformation in Steels  
A. NAGAO, S. KURAMOTO, M. KANNO and T. SHIRAGA .....24

### Forming Processing and Thermomechanical Treatment

- Effect of Single and Double Cold-rolling Reductions on the Planar Anisotropy of  $r$ -value in Sheet Steels  
K. OKUDA, C. FUJINAGA, A. TOSAKA, O. FURUKIMI and H. KUGUMINATO .....32

### Surface Treatment and Corrosion

- The Effect of S Content in Deposit on Low-cycle Fatigue Properties of Ni Film Electroplated from Sulfamate Baths  
A. KUBOTA, M. TAKADA, T. NAKAO, H. NAKANO, S. OUE, T. AKIYAMA, H. FUKUSHIMA and R. ONODERA .....38

### Transformations and Microstructures

- Strength-toughness Balance of the Japanese Sword and Changes in Carbon Content and as Quenched Hardness of HAGANE Steel with Cyclic Folding Forging  
N. SASAKI, T. HORII, M. FUJIWARA, H. SAITOH and T. MISAWA .....45

### Mechanical Properties

- Fatigue Crack Propagation of Laser Welded Butt Joints  
A. MINAGI and K. TOKAJI .....51

### Physical Properties

- The Effects of Alloying Elements on Uniform Elongation of 1420 MPa Grade Tempered Martensite  
T. YOKOTA, T. SHIRAGA, E. YAMASHITA and S. MIZOGUCHI .....57

### Social and Environmental Engineering

- Reaction Mechanisms and Operation Technique for "Tatara" Steelmaking  
K. NAGATA and T. SUZUKI .....64

---

ISIJ International, Vol.40 (2000), No.1, Synopses and Titles .....A1

---