



Contents

Special Issue on "Fundamentals and Applications of Precipitation in Steels"

Structure and Energy of Interphase Boundaries in Steel (Review)	497
T. FURUHARA	
Modelling Simultaneous Reactions of Niobium Precipitates in Ferritic Stainless Steels	510
N. FUJITA and M. KIKUCHI	
Influence of Sulfur Content and Deformation Temperature on Precipitation Behavior of MnS in 3% Si Steel	518
T. TAKAMIYA, T. OBARA, M. MURAKI and M. KOMATSUBARA	
Precipitation Strengthening at Elevated Temperature in Fe-Cu Alloys	524
K. NAKASHIMA, Y. FUTAMURA, T. TSUCHIYAMA and S. TAKAKI	
Influence of Second Phase Particles on Recrystallization in Fe-36Ni Alloy	530
Y. TASHIRO, Y. MARUHASHI and T. SATO	
Influences of Heating and Cooling Temperatures on Recrystallization during Hot-rolling Process in Ti Added High-purity Ferritic Stainless Steel/K. KIMURA, M. ABE, M. TENDOU and T. SENUMA	536
Effect of Ti Content on Grain Growth of Ultra Low-carbon Steel Sheets	544
H. MURAKAMI	
Fundamentals of High Temperature Processes	
Development of Recovery Technology of Valuable Metal Contained in Industrial Sludge by Smelting	
Reduction Furnace with Two-stage Tuyeres/T. UCHIYAMA, Y. HARA, K. TAKEDA, H. UESUGI and T. NAKAMURA	552
Effect of CaO Addition on the Reducibility of FeO-SiO ₂ Based Slag Powder	
H. ONO-NAKAZATO, T. YONEZAWA and T. USUI	559
Ironmaking	
Effects of Rapid Preheating on Coal Structure and Coke Strength	565
M. MATSURA, M. SASAKI, K. SAITO, K. KATO and I. KOMAKI	
Bottom Shape of Blast Furnace Deadman and its Floating/Sinking Behavior by 3-dimensional Model Experiment/A. SHINOTAKE, M. ICHIDA, H. OOTSUKA and Y. KURITA	573
Reaction Rate of Coke and Other Carbonaceous Materials with CO ₂	
M. KAWAKAMI, T. OHYABU, Y. MIZUTANI, T. TAKENAKA and S. YOKOYAMA	581
Chemical and Physical Analysis	
Simultaneous Determination of Arsenic, Bismuth and Antimony in Steels by High Power Nitrogen Microwave Induced Plasma Atomic Emission Spectrometry Coupled with Hydride Generation Method/A. MATSUMOTO, A. OHEDA and T. NAKAHARA	587
Forming Processing and Thermomechanical Treatment	
Wear Resistance and Resistance to Surface Roughening of Newly Developed Material for Piercing Roll with High Carbon and Low Hardness/S. SEO, S. MATSUOKA, T. KANAYAMA and A. YORIFUJI	593
Effect of Silicon Content and Lubricant on the Machinability of Hot Working Tool Steel	
M. UMINO, T. SERA, Y. OKADA, D. MURAKAMI, R. MURAKAMI and H. TUBAKINO	601
Transformations and Microstructures	
Effect of Initial Microstructures before Annealing on Ductility of TRIP-Aided Steel Sheets	
T. KASHIMA, T. YURI, K. SUGIMOTO and S. HASHIMOTO	609
Grain Size Control by Oxide Dispersion in Austenitic Stainless Steel	
K. TAKANO, R. NAKAO, S. FUKUMOTO, T. TSUCHIYAMA and S. TAKAKI	616