



## Contents

<b>Lecture</b>	<b>Introduction to Reaction Kinetics for Material Processing ( I )／M. SASABE</b>	N84
<b>Commentary</b>	<b>Capacities of Molten Slag／K. ITO</b>	N95
	<b>Relationships between Microstructure and Mechanical Properties in Steels／M. UMEMOTO</b>	157
<b>Paper</b>	<b>Effect of Ar Bubbling on Removal Rate of Alumina Inclusion in Al Deoxidized Steel J. KIM, M. KAWAKAMI and K. TANIDA</b>	167
	<b>Cold Model Experiments on the Enhancement of Scrap Melting in a Bath Accompanied by Gas Injection M. IGUCHI, M. SHINKAWA and Z. MORITA</b>	173
	<b>Levitation and Heating of Metallic Ball in Cold Crucible Simultaneously Supplied with Two Frequencies K. SAKURAYA, T. WATANABE, S. IWASAKI, A. FUKUZAWA, M. YAMAZAKI, T. TAKE and M. FUJITA</b>	179
	<b>Influence of Heating Temperature and Strain on Surface Crack in Carbon Steel Induced by Residual Copper T. KAJITANI, M. WAKOH, N. TOKUMITSU, S. OGIBAYASHI and S. MIZOGUCHI</b>	185
	<b>Development of Accurate Temperature Control in Hot Strip Mill T. ODA, Y. KONDO, S. KONISHI, H. MURAKAMI, M. SUEHIRO and T. YABUTA</b>	191
	<b>Precipitation Behaviour of Titanium Carbo-sulfide in Extra-low-carbon Titanium-added Steels K. YAMADA and M. NIHKURA</b>	197
	<b>Effects of Alloying Elements and Oxygen Potential on Equilibrium Carbon Content in Gas Carburizing N. MURAI, T. TSUMURA and M. HASEBE</b>	203
	<b>Fracture Toughness in the Transition Region of a Carbon Steel and a Ferritic Nodular Cast Iron K. NAKANO and T. YASUNAKA</b>	209
	<b>Long-term Creep Strength Property and Microstructural Stability of 12Cr Steel H. KUSHIMA, K. KIMURA, K. YAGI and K. MARUYAMA</b>	214
	<b>Collective Evaluation of Temperature and Stress Dependence of Creep Rupture Life in Austenitic Stainless Steels H. NAKAKUKI, K. MARUYAMA, H. OIKAWA and K. YAGI</b>	220
	<b>Resistance against the Stable Crack Growth and Brittle Fracture Initiation Site Controlling the Ductile-Brittle Fracture Transition Behaviors of Low Carbon Steels／T. YAGI, A. ITOH and M. NAGUMO</b>	225
	<b>Quality Evaluation of Line Pipes by the Chevron Notched Drop Weight Tear Test T. KUBO, T. SHIWAKU, J. KONDO, H. MIYAZAKI and Y. KAWAGUCHI</b>	231
	<b>Environmental Effect on the Ductile-Brittle Transition of High Purity As-rolled Chromium Y. MATSUMOTO, M. MORINAGA, T. NAMBU, J. FUKUMORI and T. SAKAKI</b>	237
<b>Discussion</b>	<b>X-ray Fluoroscopic Observations of Bubble Characteristics in a Molten Iron Bath(Vol.80, pp515～520, M.Iguchi et al.)／M. SANO</b>	243
<b>ISIJ Information Network</b>		N81