

"Tetsu-to-Hagané"

Vol.79 No.7, July, 1993

Contents

Special Issue on Recent Technology for Sensors in Iron and Steel Industries

Foreword	For Further Development of Sensor Technology / T.KITAMORI	739
Review	New Trend of Sensing Technology —Sensing Systems and Intelligent Sensors— / H.YAMASAKI	741
Temperature Measurement		
Commentary	Temperature Measurement in Iron and Steel Industry / Y.TAMURA	750
Paper	Development of Radiation Thermometer for Low Temperature Range C.MANABE, M.AKAMATSU, S.YANAI, N.SUZUKI, K.TERAJ and S.FUJIMOTO	759
	Strip Temperature Measurement by Measuring Roll for Continuous Annealing Line H.SERIU, Y.MASHINO, Y.NAKAJIMA and H.OGAWA	765
	New Radiation Thermometry Systems for Continuous Annealing and Continuous Galvanizing Lines F.TANAKA, H.OHIRA, M.MASUDA, K.MARUYAMA and M.OHAMA	772
	Multiwavelength Pyrometer for Galvannealed Steel Sheet Temperature Measurement T.YAMAMOTO, K.HIRAMOTO, C.UEMATU and J.UEDA	779
Dimension and Shape Measurement		
Commentary	A Review of Recent Technologies on Dimension and Shape Measurement in Steel Industries F.ICHIKAWA	786
Paper	M-Sequence Modulated Microwave Level Meter and Its Application A.NAGAMUNE, K.TEZUKA, M.SATO, Y.KANEDA and I.KIKUCHI	794
	On-line Measurement of Work Roll Profile in a Hot Strip Finishing Mill F.ICHIKAWA, M.OKUNO, T.ISHIKAWA and T.TAKECHI	800
	Development of a Plate Flatness Meter Based on Laser Moiré Method J.MATSUO, T.MURAMATSU, T.MATSUMI, T.KAWAKAMI and H.KANAYAMA	808
	Development of Dimension and Shape Measurement of Hot Steel Sections K.KAWAGUCHI, T.INOUE, K.INOUE and H.MATOKA	815
Nondestructive Inspection		
Commentary	Development of Nondestructive Inspection / T.MATSUMI	823
Paper	Automatic Surface Inspection Systems for Cold Strip / H.AIZAWA, Y.FUKUTAKA, Y.MASHINO and H.MIYAKE	833
	Technology of Detecting Minute Inclusions in Light Gauge Steel Sheets Using the Magnetic Leakage Flux Method / H.TANABE, Y.MATSUFUJI, J.YOTSUJI, S.ANDO, K.NISHIFUJI and M.INABA	841
	Surface Inspection System for Billets, Bars and Wire Rods I.KOSAKAI, T.TADA, M.HIRATA, H.KAMEI, K.ABURATANI and H.NAKATA	847
	Development of Advanced Nondestructive Technology for Special Steel Round Bars and Wire Rods M.YOSHIDA, J.FUJISAWA, K.TOMITA, M.OIKAWA and T.HASHIGUCHI	855
Material Characterization		
Commentary	Nondestructive Characterization Technology of Material Properties in Iron and Steel Industry H.TANABE and K.NISHIFUJI	863
Paper	Development of On-Line $\bar{r}$-value Measurement System for Cold-rolled Steel Sheets by Using Electromagnetic Acoustic Transducer / K.FUJISAWA, R.MURAYAMA, F.YAMAMOTO, K.TAYA, H.FUKUOKA and M.HIRAO	869
	Development of an On-line $\bar{r}$-value Measurement Technique for Cold Rolled Steel Sheet Using a Resonance Mode Electromagnetic Acoustic Transducer T.HYOGUCHI, T.AKAGI, K.KAWASHIMA, A.YOSHIWARA, Y.NAWATA and S.WATANABE	877
	Nondestructive Material Characterization with Laser Ultrasound N.SUZUKI, H.TAKAMATSU, A.ARAI, S.YANAI, T.OGAWA and M.AKAMATSU	883
On-line Analysis		
Paper	Development of Management On-line Analyzers for Cold Rolling Oil A.MORI, N.SHIRATA, K.SENOO, K.ASANO, Y.MORIKAWA, F.TAKI and Y.KAGAWA	890