

CONTENTS

VOLUME 35

NUMBER 1

2005

STEEL IN TRANSLATION

PAGE

Iron Production

Reducing the zinc content in blast-furnace slurry for use in sintering batch. V. Yu. Savinov, N. V. Sukinova, and M. A. Gusel'nikova.....	1
Scab formation in blast furnaces at Chelyabinskii Metallurgicheskii Kombinat Joint Stock Company. G. V. Gorbunov, D. A. Livshits, A. L. Podkorytov, N. F. Kochergina, and N. N. Gorshkov.....	3
Heat losses during blast-furnace shutdown. N. A. Spirin, O. P. Onorin, V. Yu. Rybolovlev, K. A. Shchipanov, and A. I. Perminov	7
Simulation of blast-furnace process with pressure variation at furnace charge hole. A. N. Dmitriev, A. G. Roshchektaev, and S. V. Shavrin.....	12

Metallurgy of Steel and Ferroalloys

Electromagnetic mixing in continuous casting of steel. I. N. Shifrin, V. G. Grachev, V. I. Plantus, S. N. Mazanov, and V. S. Zenin.....	15
Improved power supply for electrosmelting. I. V. Derevyanchenko, G. A. Lozin, E. A. Shumakher, E. E. Shumakher, and O. L. Kucherenko.....	19
Cold modeling of slag-metal transition zone in an arc-furnace bath. E. E. Merker, A. A. Kozhukhov, A. I. Kochetov, V. V. Fedina, and A. A. Grishin.....	26
Modernizing continuous bar-casting machines. A. K. Belitchenko, Yu. A. Belov, A. S. Kostin, V. G. Banachenkov, and A. M. Rotenberg	29
Vacuum-treatment unit based on dry mechanical pumps. N. A. Bogdanov, A. P. Lepikhin, and M. V. Ermishin	35

Pressure Treatment of Metals

Cold rolling of strip with specified working life. M. V. Sandruk and V. S. Nagornov	38
Energy-saving furnaces. M. A. Denisov	42
Improving longitudinal pipe rolling on a short mandrel. Yu. G. Gulyaev, E. I. Shifrin, N. Yu. Kvitka, and V. K. Pozumentschikov.....	46
Pressure treatment of superplastic ultrafine-grain ceramic. A. N. Ershov.....	49

Structure and Properties of Metals and Alloys

Changing the chemical composition of nonmetallic inclusions at all stages of steel production. R. V. Starov, I. V. Derevyanchenko, V. V. Parusov, A. B. Sychkov, S. Yu. Zhukova, and D. N. Togobitskaya.....	56
Influence of special nonmetallic inclusions on the acceleration of local corrosion in oil-field pipe. I. G. Rodionov, O. N. Baklanova, G. A. Filippov, S. D. Zinchenko, M. V. Filatov, S. V. Efimov, V. I. Stolyarov, and E. Ya. Kuznetsova.....	61

Nanotechnologies in precision metallurgy. B. V. Molotilov	66
Density variation in the plastic deformation of high-strength cast iron. I. V. Leirikh and D. A. Baranov.....	70

Ecology and Resource Conservation

Electrofilter gas-purification systems in smelting. G. A. Lozin, A. N. Sav'yuk, A. N. Saprygin, M. M. Mikhailovskii, and V. G. Banachenkov	74
Analysis of the source of CO ₂ emissions in ferrous metallurgy and corresponding estimation methods. A. N. Potapochkin, L. M. Simonyan, R. M. Mustafin, and P. I. Chernousov	78