

CONTENTS

VOLUME 36

NUMBER 4

2006

STEEL IN TRANSLATION

PAGES

Iron Production

- Hydrodynamics and gas dynamics of blast-furnace smelting. G. G. Vasyura 1
New vertical plate-type cooling unit. V. P. Nastich, V. G. Mizin,
V. V. Veter, M. I. Samoilov, and G. V. Likhachev 7

Metallurgy of Steel and Ferroalloys

- Improving the production of carbon structural steels. V. I. Abarin,
V. V. Alchin, and V. S. Baldin 15
Simulating the stress-strain state of bar ingot in a curvilinear continuous-
casting machine. A. N. Cherepanov, V. T. Borisov, V. P. Komshukov,
V. N. Popov, and D. B. Foigt 19
More effective ladle treatment in electrosmelting. A. G. Kuz'menko,
E. F. Mazurov, and Yu. F. Frolov 26
Russian electrosmelting system producing 250,000-300,000 ton/yr.
A. G. Kuz'menko, Yu. F. Frolov, M. G. Kuz'min, and A. P. Fomenko 33
End of injection and slag properties in converters. V. B. Okhotskii 37
Material-diagnostic balance of materials in smelting silicon ferroalloys.
V. I. Kulinich, N. P. Golovachev, O. E. Privalov, A. V. Suslov,
and A. M. Efimets 44

Pressure Treatment of Metals

- Asymmetric rolling in curvilinear-billet production. M. Ya. Brovman 48
Improved cooling of rollers and strip in hot-rolling mills. A. L. Kanevskii,
V. A. Botshtein, Yu. N. Belobrov, G. V. Kozhevnikov,
and I. B. Kaushanskii 51
Redesigned heating furnace. V. G. Lisienko, Yu. K. Malikov, I. Yu. Medvedev,
G. K. Malikov, and K. A. Surganov 55
Wave mechanism of plastic deformation of metal in the harmonic motion of
instantaneous hinged-disk elements. N. N. Fedorov, V. N. Peretyat'ko,
A. N. Fedorov, N. A. Fedorov, and A. L. Dik 60

Structure and Properties of Metals and Alloys

- Influence of Fe₃P inclusions on the magnetic properties of isotropic
electrical steel. A. E. Cheglov, D. A. Kondratkov,
and A. A. Zaveryukha 66
Ensuring stable mechanical properties of thermally strengthened rolled bar.
V. T. Chernenko, A. G. Kuz'menko, E. V. Krysanov,
and D. A. Kleshchenko 71
High-temperature protective coatings on refractory metals. O. A. Skachkov,
M. N. Firstov, V. I. Zmii, S. V. Pozharov, A. Yu. Ezhov,
S. I. Astakhov, and V. B. Chuikova 75

Evolution of steel grain structure in multicyclic fatigue tests with electrostimulation. S. V. Vorob'ev, Yu. F. Ivanov, V. V. Piskalenko, and V. E. Gromov	80
Microstructure and distribution of chemical elements in continuous-cast pipe blank. D. A. Silin, I. N. Veselov, S. Yu. Zhukova, N. T. Tikhontseva, and V. M. Farber	86