

Founders: The National Academy of Sciences of Ukraine
The E. O. Paton Electric Welding Institute
International Association «Welding»

Publisher: International Association «Welding»

Is published 4 times a year

CONTENTS

EDITORIAL BOARD:

Editor-in-Chief

B. E. Paton

M. I. Gasik,

G. M. Grigorenko (vice-chief ed.),
D. M. Dyachenko (exec. secr.),
M. L. Zhadkevich, V. I. Lakomsky,
V. K. Lebedev, L. B. Medovar,
B. A. Movchan, A. N. Petrunko,
N. P. Trigub, A. A. Troyanskii

**THE INTERNATIONAL
EDITORIAL COUNCIL:**

D. Ablitzer (France)
G. M. Grigorenko (Ukraine)
B. Koroushich (Slovenia)
S. F. Medina (Spain)
A. Mitchell (Canada)
B. E. Paton (Ukraine)
Ts. V. Rashev (Bulgaria)
J. Foct (France)
T. El Gammal (Germany)

Address:

The E. O. Paton Electric
Welding Institute
of the NAS of Ukraine,
11, Bozhenko str., 03680,
Kyiv, Ukraine
Tel./fax.: (38044) 528 34 84,
529 26 23
E-mail: journal@paton.kiev.ua
http://www.nas.gov.ua/pwj

Editor:

V. I. Kotlyar
Electron galley:
D. M. Dyachenko, L. N. Gerasimenko,
I. S. Batasheva

State Registration Certificate
KV 6185 of 31.05.2002

All rights reserved.

This publication and each of the articles
contained here in are protected
by copyright

Permission to reproduce material
contained in this journal must be
obtained in writing from the Publisher

ELECTROSLAG TECHNOLOGY

Eryomin E. N. Application of modifying for improvement of
properties of nitrogen-containing stainless steel ring-shaped billets,
produced by the method of centrifugal electroslag casting 3

**Lakomsky V. V., Pomarin Yu. M., Grigorenko G. M.,
Orlovsky V. Yu.** Towards the problem of nitrogen transportation
through the molten slag 8

ELECTRON BEAM PROCESSES

**Trigub N. P., Zhuk G. V., Chepinsky A. A., Tarasov K. K.,
Kurilenko P. V., Antipieva N. V., Kopylova N. E.** Investigation of
process of manufacture of hot-rolled and cold-formed pipes from
cast non-formed pipe billets of titanium alloy VT1-0 produced by
the method of electron beam melting 11

Stelmakh Ya. A., Melnichenko T. V., Movchan B. A. Structure
and properties of thick MgO condensates produced by electron
beam evaporation 15

PLASMA-ARC TECHNOLOGY

**Grigorenko G. M., Pomarin Yu. M., Orlovsky V. Yu.,
Lakomsky V. V.** Kinetics of nitrogen absorption by highly-reactive
metals in arc and plasma melting 20

**Kostyakov V. N., Poletaev E. B., Grigorenko G. M.,
Medved S. N., Shevchuk E. A.** Phosphorus behavior in
liquid-phase reduction melting 23

VACUUM-INDUCTION MELTING

Chervonyi I. F., Shvets E. Ya., Egorov S. G. Silicon melting in
vertical induction crucible-free zonal melting 27

GENERAL PROBLEMS OF METALLURGY

**Kurenkova V. V., Malashenko I. S., Trokhimchenko V. V.,
Chervyakova L. M., Rabinovich A. A.** Short-time strength of
brazed joints of nickel alloy VZhL12U at 20 and 950 °C temperature 30

Khizhnyak V. G., Pomarin Yu. M., Tereshchenko P. A.
Titanizing of tungsten-free hard alloys TN20 and KKhN15 41

ELECTROMETALLURGY OF STEEL AND FERROALLOYS

**Novikov N. V., Kapran I. I., Sokolov K. D., Gasik M. I.,
Ovcharuk A. N.** Innovation technological processes of refining
electric furnace ferronickel using advanced industrial methods.
Information 3. Processes and technology of refining ferronickel in
acid and basic oxygen converters 44

**Savjuk A. N., Derevyanchenko I. V., Kucherenko O. L.,
Proidak Yu. S., Stovpchenko A. P., Kamkina L. V.,
Grishchenko Yu. N.** Specifics of semi-product production for
producing ultralow-carbon steel in electric arc furnace 49

ENERGY-AND RESOURCES SAVING

**Kostyakov V. N., Grigorenko G. M., Poletaev E. B., Medved S. N.,
Shevchuk E. A.** Power capacity of process of liquid-phase
reduction melting 54

INFORMATION

Akhonin S. V. International Conference «Titanium in CIS-2006» 57

Thesis for scientific degree 58

L. Ya. Shvartsman is 65 59

5th International Conference «Hydrogen economy and hydrogen
treatment of materials» 60

Books, manuscripts, Proceedings of Conferences 61

In memory of G. N. Okorokov 48

*Journal «Sovremennaya Elektrometallurgiya»
is published in English under the title*

«Advances in Electrometallurgy» by the E. O. Paton Electric Welding Institute.
Concerning publication of articles, subscription and advertising, please,
contact the editorial board