

Editor-in-Chief B.E.Paton

Editorial board:

Yu.S.Borisov V.F.Khorunov
A.Ya.Ishchenko I.V.Krivtsun
B.V.Khitrovskaya L.M.Lobanov
V.I.Kirian A.A.Mazur
S.I.Kuchuk-Yatsenko
Yu.N.Lankin I.K.Pokhodnya
V.N.Lipodaev V.D.Poznyakov
V.I.Makhnenko K.A.Yushchenko
O.K.Nazarenko A.T.Zelnichenko
I.A.Ryabtsev

International editorial council:

N.P.Alyoshin (Russia)
U.Diltey (Germany)
Guan Qiao (China)
D. von Hofe (Germany)
V.I.Lysak (Russia)
N.I.Nikiforov (Russia)
B.E.Paton (Ukraine)
Ya.Pilarczyk (Poland)
P.Seyffarth (Germany)
G.A.Turichin (Russia)
Zhang Yanmin (China)
A.S.Zubchenko (Russia)

Promotion group:

V.N.Lipodaev, V.I.Lokteva
A.T.Zelnichenko (exec. director)

Translators:

A.A.Fomin, O.S.Kurochko,
I.N.Kutianova, T.K.Vasilenko
PE «Melnik A.M.»

Editor

N.A.Dmitrieva

Electron galley:

I.S.Batasheva, T.Yu.Snegiryova

Address:

E.O. Paton Electric Welding Institute,
International Association «Welding»,
11, Bozhenko str., 03680, Kyiv, Ukraine
Tel.: (38044) 287 67 57

Fax: (38044) 528 04 86

E-mail: journal@paton.kiev.ua

http://www.nas.gov.ua/pwj

State Registration Certificate
KV 4790 of 09.01.2001

Subscriptions:

\$324, 12 issues per year,
postage and packaging included.
Back issues available.

All rights reserved.

This publication and each of the articles
contained herein are protected by copyright.
Permission to reproduce material contained in
this journal must be obtained in writing from
the Publisher.

Copies of individual articles may be obtained
from the Publisher.

CONTENTS

SCIENTIFIC AND TECHNICAL

Makhnenko V.I. and Romanova I.Yu. Calculation prediction of
fatigue life of freight car side frame under alternating cyclic
loads 2

Falchenko Yu.V., Muravejnik A.N., Kharchenko G.K.,
Fedorchuk V.E. and Gordan G.N. Pressure welding of
micro-dispersed composite material AMg5 + 27 % Al₂O₃ with
application of rapidly solidified interlayer of eutectic alloy Al +
33 % Cu 7

Tsybulkin G.A. Evaluation of quality of the arc self-adjustment
process 11

Chernaya T.I., Tsaryuk A.K., Siora A.V., Shelyagin V.D. and
Khaskin V.Yu. Laser welding of root welds of thick joints of
heat-resistant steel 14

Dolinenko V.V., Skuba T.G., Kolyada V.A. and Shapovalov E.V.
Optimal control of formation of weld reinforcement 17

INDUSTRIAL

Kuchuk-Yatsenko S.I., Nejlo Yu.S., Gavrish V.S. and
Gushchin R.V. Prospects of increasing energy characteristics
of flash butt welding (Review) 23

Rudenko P.M. and Gavrish V.S. Portable system of monitoring
and control of resistance spot welding process 27

Zhudra A.P., Krivchikov S.Yu. and Petrov V.V. Technology for
wide-layer hard-facing of crankshafts 32

Royanov V.A. and Korostashevsky P.V. Determination of
additional resistances to sheet panel displacement over dead
roller table of assembly and welding lines 36

BRIEF INFORMATION

News 41

NEWS

XIII Republican Scientific-Technical Conference of Kazakhstan
Welders 42

Problems of Life and Safe Operation of Structures,
Constructions and Machines (Final Scientific Conference at the
E.O. Paton Electric Welding Institute of the NAS of Ukraine) 43

INFORMATION

Loyalty Program of Fronius Ukraina Ltd. in crisis period and its
results 47

Developed at PWI 6, 31, 48