

**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.Kyrian	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)
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

**Editor:**

N.A.Dmitrieva  
Electron gallery:  
D.I.Sereda, T.Yu.Snegiryova

**Address:**

E.O. Paton Electric Welding Institute,  
International Association «Welding»,  
11, Bozhenko str., 03680, Kyiv, Ukraine  
Tel.: (38044) 200 82 77  
Fax: (38044) 200 81 45  
E-mail: journal@paton.kiev.ua  
URL: www.rucont.ru

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., Markashova L.I., Makhnenko O.V.,  
Berdnikova E.N., Shekera V.M. and Zubchenko A.S.* Growth of  
corrosion cracks in structural steel 10GN2MFA ..... 2
- Poznyakov V.D., Zhdanov S.L. and Maksimenko A.A.* Structure  
and properties of welded joints of steel S390 (S355 J2) ..... 6
- Kostin V.A.* Mathematical formulation of carbon equivalent as  
a criterion for evaluation of steel weldability ..... 11
- Gajvoronsky A.A., Poznyakov V.D., Markashova L.I.,  
Berdnikova E.N., Klapatyuk A.V., Alekseenko T.A. and  
Shishkevich A.S.* Influence of deposited metal composition on  
structure and mechanical properties of reconditioned railway  
wheels ..... 16
- Khorunov V.F. and Voronov V.V.* New system of filler metals  
for brazing of titanium alloys ..... 22

INDUSTRIAL

- Interview with V.G. Subbotin, Director General of OJSC  
TURBOATOM ..... 26
- Lashchenko G.I.* Combined fusion welding technologies  
(Review) ..... 29
- Tsaryuk A.K., Moravetsky S.I., Skulsky V.Yu., Grishin N.N.,  
Vavilov A.V., Kantor A.G. and Grinchenko E.D.* Development of  
forge-welded combined medium-pressure rotor for 325 MW  
steam turbine ..... 36
- Kuchuk-Yatsenko V.S., Nakonechny A.A., Gavrish V.S. and  
Chernobaj S.V.* Technology of projection welding of parts of  
large thicknesses with T-shaped joints ..... 42
- Yushchenko K.A., Lychko I.I., Kozulin S.M., Fomakin A.A.,  
Dakal V.A. and Oganisyan E.S.* Portable apparatus for  
consumable-nozzle electroslag welding ..... 45
- Levchenko O.G., Levchuk V.K. and Goncharova O.N.* Spatial  
distribution of magnetic field and its minimization in resistance  
spot welding ..... 47

NEWS

- 11th International Conference-Exhibition on Problems of  
Corrosion and Anticorrosive Protection of Structural Materials  
«Corrosion-2012» ..... 52
- International Scientific-and-Technical Conference «Surface  
Engineering and Renovation of Parts» ..... 54