

Editor-in-chief
M.E. MARCHENKO

**EDITORIAL
BOARD**

V.S. AGABABOV
R.A. AMERKHANOV
A.V. ANDRYUSHIN
Yu.V. BALABAN-IRMENIN
P. BALTRENAS
V.D. BUROV
A.V. VOLKOV
B.Kh. GAITOV
M.Kh.-G. IBRAGIMOV
V.I. KORMILITSYN
Yu.A. KUZMA-KICHTA
V.V. KULICHKHIN
B.M. LARIN
S.I. MAGID
E.E. NOVGORODSKII
V.F. OCHKOV
A.B. PERMYAKOV
V.I. RACHKOV
A.S. SEDLOV
V.P. SPIRIDONOV
B.G. TUVAL'BAEV
L.A. KHOMENOK
V.I. SHARAPOV
E.B. YURCHEVSKII

Technical editor
J.S.SERGEEVA

Founder:
LLC «ENIV»

*The magazine is issued in interests
and on money of followers.*

*The magazine is registered
State Committee*

*The Russian Federation on the press.
Certificate No. 016042
of April 30, 1997.*

*Certificate on a re-registration of
PI No. FS77-44018
of March 01, 2011.*

Subscription indexes

И6414 -

**Catalogue of Russian Post
"Subscription edition"**

Phone of Editorial Board:
+7-915-4213768

E-mail: eniv2013@gmail.com
info@energija.ru
www.energija.ru

Signed 09.02.2019
The 200 copies

It is printed in Printing houses
Onebook.ru
LLC «Sam Poligrafist»
6 Protopopovskii per., Moscow

SCIENTIFIC-TECHNICAL MAGAZINE
Published since 1997

ENERGYSAVING AND WATERTREATMENT

No. 1 (117)

2019, February

CONTENTS

GENERAL ISSUES OF POWER AND ENERGY SAVING	3
Amerkhanov R.A., Daybova L.A., Arakelyan N.S., Armaganyan E.G, Dvornyi V.V. Energy saving technologies for office buildings.....	3
Borisova P.N. Estimation of efficiency of technological pressure reduction stations in the gas supply systems application for creation of fuel-free power generation systems.....	6
Safronov P.G., Batuhitin A.G. Methods to improve efficiency of power plant with a high degree of automation on example of Haranorskaya State District Power Station.....	10
Malkhanov V.P., Malkhanov O.V., Kostiukov I.S. To the problem of etda-8000 energy-saving turbine-expander units governing system.....	15
Orlov M.E., Sharapov V.I., KUZ'MIN A.V., Zamaleev M.M. Variants of energy efficient heating for additional feed water of boilers at combined heat and power plants.....	20
Kunei J.A., Pozdeev V.A., Ekimova T.A. Modernization of radial seals of regenerative air heaters in steam power boilers	27
Protsenko P.P., Bodrug N.S. Water heaters in heat supply of production and household consumers	31
RESEARCH, DESIGN, CALCULATIONS	34
Smorodova O.V., Baikov I.R., Kostareva S.N., Novoselov I.V., Petrov M.G. Thermal losses optimization at energy distribution modeling.....	34
Ivanitskiy M.S. Correlation and regression analysis of effect of nitrogen oxides, carbon monoxide and carcinogenic PAHs to total toxicity of products of combustion in power boilers of thermal power plants.....	39
Granchenko P.P., Kuznetsov K.I., Sukhikh A.A, Skorodumov S.V., Arkhitektsev A.V, Basidov R.I. Speed of ultrasound in liquid and supercritical region of fluoro-carbon compounds.....	45
Karaeva J.V., Timofeva S.S., Mindubaev A.Z. A study of cofermentation of organic wastes and Amaranthus ret-roflexus L. phytomass.....	50
Filatov V.A., Pospelova I.Y. Constructive calculation of heat pipe.....	54
RENEWABLES	59
Bazikova E.I., Goryachev S.V. Devices for protection of wind energy installations from strong wind flows.....	59
Goryachev S.V., Kharchenko P.A. Use of a bladeless generator in wind power.....	62
Amerkhanov R.A., Kirichenko A.S., Marchenko M.E., Sergeeva J.S., Armaganyan E.G., Dvornyi V.V., Khutornoy E.O. Current state and prospects of hydropower development in agriculture.....	66
Kirichenko A.S., Goldman R.B., Daybova L.A., Arakelyan N.S., Armaganyan E.G., Kibalka V.V Use of solar energy in agriculture.....	73
TO READERS AND SUBSCRIBERS	80