



JOINT COMPANY
«RESEARCH AND PRODUCTION CORPORATION
«SPACE MONITORING SYSTEMS, INFORMATION & CONTROL AND
ELECTROMECHANICAL COMPLEXES» NAMED AFTER A.G. IOSIFIAN»
(JC «VNIEM CORPORATION»)

ELECTROMECHANICAL MATTERS. VNIEM STUDIES

Scientific and technical journal
Published since 1959
Released once every two months

ISSN 2500-1299

Tome 179

№6
2020

Chief Editor:

MAKRIDENKO L. A., Director General,
D. Sc. (Tech.)

Editorial board:

Vereshchagin V. P., D. Sc. (Tech.)
Volkov S. N., D. Sc. (Tech.)
Gecha V. Ia., D. Sc. (Tech.)
(Deputy Chief Editor)
Gorbunov A. V., Ph. D. (Tech.)
Duyshenaliev T. B., D. Sc. of Physics
and Mathematics (Kyrgyz Republic)
Zakharenko A. B., D. Sc. (Tech.)
Zolotoy S. A., Ph. D. (Tech.)
(Republic of Belarus)
Kazantsev S. G., D. Sc. (Tech.)
Karachun N. D., D. Sc. (Tech.)
Minaev I. V., D. Sc. (Tech.)
Nurguzhin M. R., D. Sc. (Tech.)
(Republic of Kazakhstan)
Pinchuk A. V., Ph. D. of Military Science
Sarychev A. P., D. Sc. (Tech.)
Tyutnev A. P., D. Sc. of Physics
and Mathematics
Fedotov A. Yu., D. Sc. (Tech.)
Hodnenko V. P., D. Sc. (Tech.)
Chunikhina O. A.
(Editorial board Executive secretary)

Executive editor:

Gecha V. Ia., D. Sc. (Tech.)

Subscription index:

Union catalogue
«Pressa Rossii»
87648

Editorial office address:
JC «VNIEM Corporation», 30 Volnaia st., Moscow, Russian
Federation. Postcode: 105187.
Tel.: (495) 365-30-63.
E-mail: vniem@vniem.ru; redactori@mail.ru.
http://jurnal.vniem.ru.

Signed for print 29.12.2020. Format: 60×84 1/8.
Conventional printed sheet 5.58. Circulation: 150 copies.
Printed at «SAM-POLIGRAFIST» LLC6,
Protopopovskii pereulok, Moscow. Tel.: (495) 545-37-10.
www.onebook.ru.

The journal is registered by the Federal Service for Supervision
of Communications, Information Technology and Mass Media,
Registration Certificate ПИ No. 77-74183 dated 30.11.2018.

The journal is recommended by the Ministry of education and
science of Russia for publication of scientific works reflecting
the main scientific content of candidate and doctoral dissertations.

Full or partial use of the information published in the journal is
allowed only after coordination with the editorial department,
with indication of the source.

© JC «VNIEM Corporation», 2020

CONTENTS

GENERAL QUESTIONS OF ELECTROMECHANICS

N. A. Belokurova, A. B. Zakharenko, A. K. Nadkin
Impact of number of coils per pole per phase on
characteristics of a ring-shaped reaction wheel.....3

V. V. Magin, M. B. Panasiuk, A. A. Nozdriukhin, I. G. Trunov
Development of electric motors with ultra-high
specific indicators.....8

SPACE ELECTROMECHANICS. SPACE CRAFTS. NEAR-EARTH SPACE RESEARCH

G. A. Zubkov
Method for short-term prediction of the accuracy
characteristics of the GLONASS system using precedents.....12

L. I. Eremin, D. A. Bondarenko
Assessment of variation of stabilizing aerodynamic moment
of a low-orbit spacecraft at displacement
of its center of mass.....19

R. V. Belyy, A. S. Movlyav
Analysis of promising technologies that can be used
to reduce size of remote sensing satellites.....23

*L. A. Makridenko, S. N. Volkov, A. V. Gorbunov,
I. Iu. Ilina, V. K. Saulskii, A. L. Churkin*
Investigation of orbital structure of prospective space system
comprising meteorological monitoring satellites.....28

R. V. Belyy, A. S. Movlyav
Methodology for searching the information set of the most
influential parameters for the operation
of remote sensing satellites.....42