

**ELECTROMECHANICAL MATTERS. VNIEM STUDIES**

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

**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.)  
**Alabuzheva A.B.**  
(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 7.12.2016. Format: 60×84 1/8.  
Conventional printed sheet. 6,3. Circulation: 150 copies.  
Printed at «SAM-POLIGRAFIST» LLC6,  
Protopopovskii pereulok, Moscow. Tel.: (495) 545-37-10.  
www.onebook.ru.

© JC «VNIEM Corporation», 2016

**CONTENTS**

**GENERAL QUESTIONS OF ELECTROMECHANICS** \_\_\_\_\_

*L.A. Makridenko, A.P. Sarychev, A.S. Abduragimov,  
V.P. Vereshchagin, A.V. Rogoza*  
Vniem methods for electromagnetic bearing design .....3

*V.V. Magin, M.B. Panasyk, D.V. Levin*  
Effects of stator protection sleeve on characteristics  
of electric machine .....15

**SPACE ELECTROMECHANICS.  
SPACE CRAFTS.  
NEAR-EARTH SPACE RESEARCH** \_\_\_\_\_

*A.V. Khromov*  
Lithium-ion accumulator batteries for low-orbit spacecraft .....20

*A.A. Karimova*  
Methodical aspects of using modern space survey imagery  
for updating of digital topographic maps and town plans .....29

*S.V. Burenkov, S.V. Medushev, V.E. Remizov, V.V. Shichkov*  
Research of metrological characteristics specified  
for photoelectric raster angular transducers of spacecraft  
scanners drives.....34

**ELECTROMECHANICS AND THE SOCIO-ECONOMIC  
DEVELOPMENT OF THE NATION** \_\_\_\_\_

*A.P. Galeev, A.A. Maiorov, S.G. Sementsov, V.T. Semionov*  
Reliability evaluation of information and  
diagnostic complex .....39