# CONTENTS

Thermoelectric energy converters (TECs) are used in many scientific and technical devices and systems, as electric generators that convert the heat into the electric energy and as cooling devices that convert the electric energy into the cold or heat. TECs have the best all parameters among existing traditional energy converters, excluding only one parameter. They have by 2—3 times lower values of energy conversion efficiency. Theoretical and experimental investigations show that transition to semiconductor structures with characteristic dimensions of 5—100 nm open the way to increase TEC coefficient of performance by 2.5—6.0 times. The most prospective way of creation of high efficiency and inexpensive TECs is development of low dimension structures made from nanopowders of different semiconductor materials.

***Keywords:*** thermoelectric energy converters, nanostructured thermoelectric materials, nanopowders.



New designing method of noiseproof contactless sensors on superficial acoustic waves on the basis of dispersive lines of a delay is offered. Results of modelling of a membrane pressure sensors are stated. The suboptimum kind of the law of change of the phase, which maintain a high sensitivity to deformation of sound-conductor, is defined. The offered approach provides high noise immunity and accuracy of contactless measurements. The offered approach provides a high the noiseproofing and accuracy of contactless measurements.

***Keywords:*** pressure sensors, passive, dispersive lines of a delay.



Considered are the problems of Micro Air Vehicles (MAV) miniaturization in the areas of aerodynamics, strength, powerplants, electrical devices for fixed flight task (velocity, height and flight time being fixed). Scaling peculiarities are analyzed for the case of "evolutional" decrease of MAV dimensions. Set of recommendations is formulated for the directions of investigations for further MAV miniaturization. Results are validated on the experimental vehicles.

***Keywords:*** Micro Air Vehicle, miniaturization.

**For foreign subscribers:**

*Journal of "NANO and MICROSYSTEM TECHNIQUE" (Nano- i mikrosistemnaya tekhnika, ISSN 1813-8586)*

*The journal bought since november 1999.*
*Editor-in-Chief Ph. D. Petr P. Maltsev*
**ISSN 1813-8586.**
***Address is: 4, Stromynsky Lane, Moscow, 107076, Russia. Tel./Fax: +7(499) 269-5510.***
***E-mail: nmst@novtex.ru; http://www.microsystems.ru***

Адрес редакции журнала: 107076, Москва, Стромынский пер., 4. Телефон редакции журнала **(499) 269-5510. E-mail: nmst@novtex.ru**
Журнал зарегистрирован в Федеральной службе по надзору за соблюдением законодательства
в сфере массовых коммуникаций и охране культурного наследия.
Свидетельство о регистрации ПИ № 77-18289 от 06.09.04.

Дизайнер *Т. Н. Погорелова*. Технический редактор *Е. М. Патрушева*. Корректор *Л. М. Мазурина*

Сдано в набор 15.06.2009. Подписано в печать 17.07.2009. Формат 60×88 1/8. Бумага офсетная. Печать офсетная.
Усл. печ. л. 6,86. Уч.-изд. л. 8,58. Заказ 605. Цена договорная

Отпечатано в ООО "Подольская Периодика", 142110, Московская обл., г. Подольск, ул. Кирова, 15