

NUST MISIS SCIENCE NEWS DIGEST

January - March, 2016

WHISKERS TO REDUCE FUEL CONSUMPTION IN AUTOMOBILES BY 30%

The NUST MISIS Electrical Energy Storage Devices Laboratory science team has developed a nanocarbon material for recuperators in hybrid vehicles. The material allows scientists to make hybrid vehicles more environmentally friendly and reduce fuel consumption by 30%. It can successfully compete with graphene and nanotubes due to the unique combination of its properties. In addition, the new material is much cheaper – graphene costs about \$1000 per gram, while the new material costs \$20 per kilogram. The research is led by Professor Vladimir Tumanov, head of the NUST MISIS Electrical Energy Storage Devices Laboratory, and Professor Mikhail Astakhov, Head of the Department of Physical Chemistry of NUST MISIS.

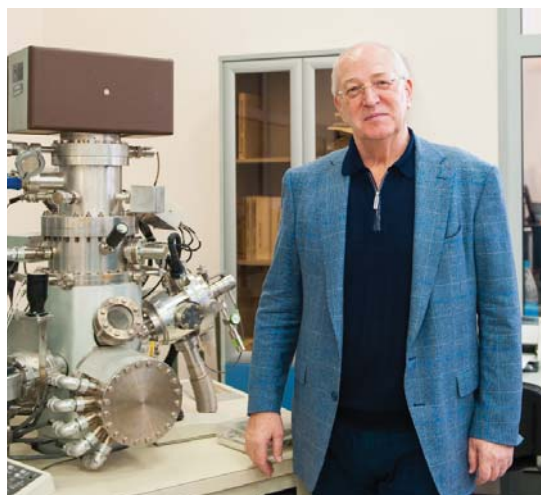
<http://en.misis.ru/university/news/misc/2016-01/3931/>



NUST MISIS SCIENTISTS SUGGEST NEW “NUCLEAR BATTERY” CONCEPT

A group of NUST MISIS scientists led by Professor Yury Parkhomenko, head of the NUST MISIS Semiconductor and Dielectric Materials Studies Department has developed a new technology for making “nuclear batteries” with nickel-63 isotopes with a long service life of over 50 years. Such battery is expected to be used in various sectors – from cardiac implants to space vehicles for deep space research.

<http://en.misis.ru/university/news/misc/2016-03/3928/>





NUST MISIS CONSTRUCTS A NEW GENERATION PROTOTYPING CENTER

The “Center for Industrial Prototyping of High Complexity” led by Vladimir Pirozhkov will become a modern multirole high-tech digital laboratory for development and industrial design of functional prototypes for domestic industry. The center has 29 units of state-of-the-art production equipment and machine-tools that can produce small batches of precision components and industrial prototypes of the highest quality. The size of the output varies from one micron to 20 meters. The center will provide scientists with a kind of a «magic wand»: it is able to create any kind of object – from biorobot to spaceship. According to the founders the world has not seen such a center before.

<http://en.misis.ru/university/news/misc/2016-02/3927/>



NUST MISIS: CUTTING EDGE CANCER DIAGNOSIS TECHNIQUE TO BEGIN TRIALS IN 2018

The NUST MISIS science team led by Dr. Alexander Majouga, head of the NUST MISIS Biomedical Nanomaterials Laboratory, started preclinical trials of a new Russian nanoagent on the basis of magnetite of early disease detection through MRI technology. The launch of clinical trials is planned for 2018. The nanoagent is able to identify a brain tumor during the first stage, and can subsequently be used for the cardiac implants of other cancer types as well.

<http://en.misis.ru/university/news/misc/2016-03/3949/>



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