

NUST MISIS SCIENCE NEWS DIGEST

July - September, 2016

NUST MISIS SCIENTISTS DEVELOP UNIQUE IMPLANTS

NUST MISIS's young scientists have developed a new method to produce ultra-high molecular weight polyethylene implants intended to replace bone tissue defects in humans and animals. The new implant imitates bone tissue structure. In an organism, its spongy structure enables newly formed blood vessels and tissues to grow into the implant. The solid layer is added for strength and bears the bulk of the pressure.

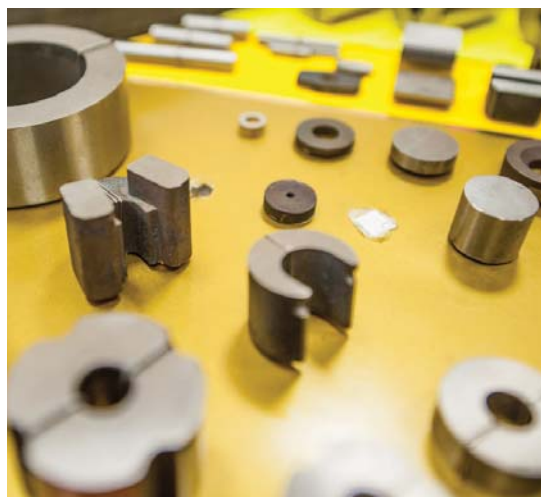
<http://misis.ru/university/news/science/2016-10/4249>



NUST MISIS SCIENTISTS DEVELOP SUPERMAGNET RESISTANT TO EXTREME TEMPERATURES

A group of NUST MISIS scientists led by leading research fellow Sergey Gudoshnikov developed a new type of permanent magnet for the Arctic and space that maintains its powerful magnetic properties in extreme temperatures. The new magnet is 30 percent lighter and smaller than its counterparts of the same capacity. Such properties make the new magnet indispensable in instruments and electronics – from engines to navigation systems. The new magnet is highly reliable and can operate well without drawing on energy from outside sources.

<http://misis.ru/university/news/science/2016-08/4207>





NUST MISIS SCIENTISTS DEVELOP NEW METHOD TO DETECT STRUCTURAL PROBLEMS IN AIRCRAFT PARTS

A group of NUST MISIS scientists led by Professor Aleksander Karabutov have developed a unique domestic laser-ultrasonic device which is capable of detecting defects inside aircraft materials with an accuracy of a hundredth of a millimeter. The development allows the user to control parts in such conditions when other methods are ineffective – for example detecting and distinguishing exfoliation between each successive layer of composite material. The application of the development in the production and operation of aerotechnics will take the field's qualitative characteristics and reliability to a never before seen level.

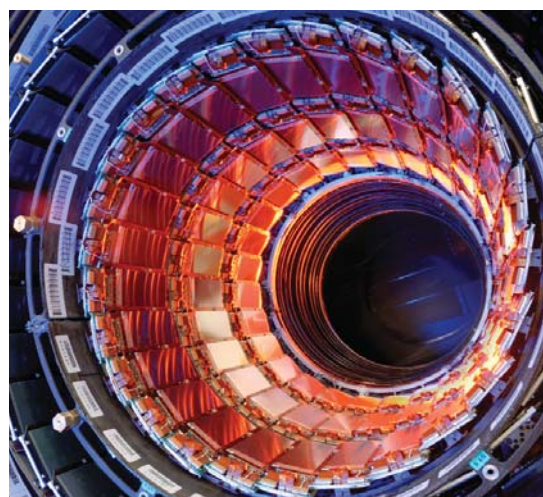
<http://misis.ru/university/news/science/2016-08/4210/>



NUST MISIS ENGINEERS START DESIGN OF A UNIQUE DECAY VESSEL CAMERA FOR CERN'S NEW EXPERIMENT

A group of NUST MISIS engineers has started the design of the decay vessel's camera, the most massive part of the SHiP's (Search for Hidden Particles) new experimental apparatus at CERN, the European Organization for Nuclear Research (Geneva, Switzerland). The aim of the new experiment is to find explanations for phenomena that do not adhere to or cannot be described by the Standard Model of particle physics, namely, the existence of dark matter and the absence of antimatter in the Universe. Currently the work group is investigating alternative options for the experimental unit, and is making preparations to start the vibrational analysis of the assembly and a detailed design of the arrangement of any accessory machines.

<http://misis.ru/university/news/science/2016-10/4258>



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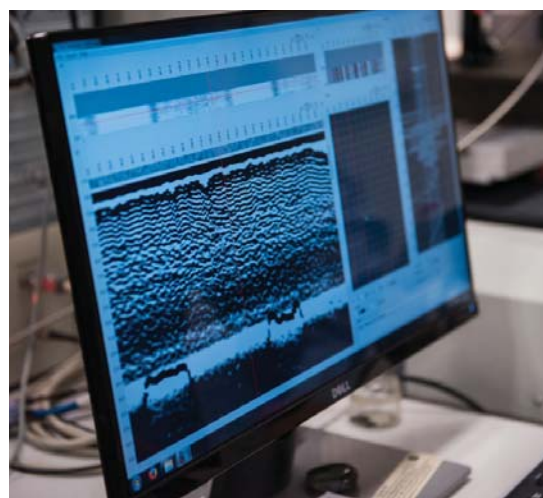
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