gies are emissions-free at the point of use; emissions from biomass are lower than comparable conventional fuels; and energy efficiency, by definition, reduces energy consumption, which results in fewer emissions. Renewable energy technologies have minimal impact on water resources. In future environmental regulations are sure to include carbon dioxide, renewable and energy efficiency technologies that can provide cushion for states and utilities. The most efficient design of a wind generator for areas with low velocity of wind streams is a so-called "rotary" wind turbine or one of a swing type with a vertical axis. In April, 2011 the first Belarusian MW wind generator was installed in Hrabniki village, Hrodna region. Its capacity amounts to 1.5 MW, its altitude is near 20 meters and each blade has 40 meters in length. This project is being developed with the help of the Chinese company, HEAG that has delivered the appropriate equipment. They state that the mid-annual energy production may save about 3.8 ml kW/h, or 1.1 – 1.25 thousands of tons of standard fuel.

УДК 620.3:61

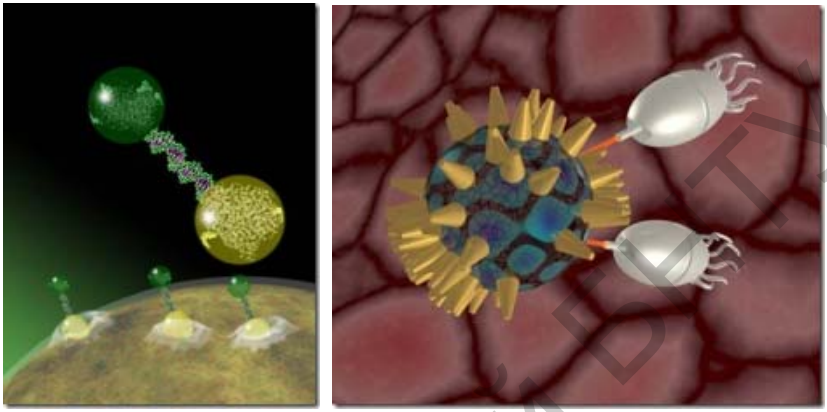
NANOMEDICINE

Кузнецова Л. Н. (МСФ), Кипнис И. Ю.
Белорусский национальный технический университет
Минск, Беларусь

Many countries are adopting the programs for the development of nanotechnology and there has been much debate on the future implications of it. Nanotechnology may be able to create many new materials and devices with a vast range of applications in medicine (nanomedicine). The use of nanotechnology in medicine offers some exciting possibilities. Some techniques are only imagined, while others are at various stages of testing, or actually being used today. The use of nanotechnology in the field of medicine could revolutionize the way we detect and treat damage to the human body and disease in the future, and many techniques only imagined a few years ago are making remarkable progress towards becoming realities.

Nanomedicine is the medical application of nanotechnology seeking to deliver a valuable set of research tools and clinically helpful devices in the near future. It ranges from the medical applications of nanomateri-

als, to nanoelectronic biosensors, and even possible future applications of molecular nanotechnology.



The health care industry is predicted to receive the first significant benefits of nanotechnology. The driving force behind this prediction is that biological structures are within the size scale that researchers are now able to manipulate and control. Investigators are looking to nanotechnology to develop highly sensitive disease detectors, drug delivery systems that only target the disease and not the surrounding healthy tissue, and nanoscale building blocks that help repair skin, cartilage, and/or bone. Other researchers are investigating the use of nanotechnology to keep the body from rejecting artificial parts, and to stimulate the body to regrow bone and other types of tissue.

Researchers are investigating nanoparticles as drug carriers. These nanoscale drug carriers could be coated with nano-sensors, which could recognize diseased tissues and attach to them, releasing a drug exactly where needed. Nanoparticles could also be used to enter damaged cells and release enzymes that tell the cells to auto-destruct, or they could release enzymes to try to repair the cell and return it to normal functioning.