Analyse Nanobiotechnologies: Applications Markets and Companies

DUBLIN, Ireland--(BUSINESS WIRE)--May 12, 2008 - Research and Markets (http://www.researchandmarkets.com/reports/c10618) has announced the addition of "Nanobiotechnologies Applications, Markets and Companies" to their offering.

Nanotechnology is the creation and utilization of materials, devices, and systems through the control of matter on the nanometer-length scale (a nanometer is one billionth of a meter. Nanobiotechnology, an integration of physical sciences, molecular engineering, biology, chemistry and biotechnology holds considerable promise of advances in pharmaceuticals and healthcare. The report starts with an introduction to various techniques and materials that are relevant to nanobiotechnology. It includes some of the physical forms of energy such as nanolasers. Some of the technologies are scaling down such as microfluidics to nanofluidic biochips and others are constructions from bottom up. Application in life sciences research, particularly at the cell level sets the stage for role of nanobiotechnology in healthcare in subsequent chapters.

Some of the earliest applications are in molecular diagnostics. Nanoparticles, particularly quantum dots, are playing important roles. In vitro diagnostics, does not have any of the safety concerns associated with the fate of nanoparticles introduced into the human body. Numerous nanodevices and nanosystems for sequencing single molecules of DNA are feasible. Various nanodiagnostics that have been reviewed will improve the sensitivity and extend the present limits of molecular diagnostics.

An increasing use of nanobiotechnology by the pharmaceutical and biotechnology industries is anticipated. Nanotechnology will be applied at all stages of drug development - from formulations for optimal delivery to diagnostic applications in clinical trials. Many of the assays based on nanobiotechnology will enable high- throughput screening. Some of nanostructures such as fullerenes are themselves drug candidates as they allow precise grafting of active chemical groups in three-dimensional orientations. The most important pharmaceutical applications are in drug delivery. Apart from offering a solution to solubility problems, nanobiotechnology provides and intracellular delivery possibilities. Skin penetration is improved in transdermal drug delivery. A particularly effective application is as nonviral gene therapy vectors. Nanotechnology has the potential to provide controlled release devices with autonomous operation guided by the needs.

Nanomedicine is now within the realm of reality starting with nanodiagnostics and drug delivery facilitated by nanobiotechnology. Miniature devices such as nanorobots could carry out integrated diagnosis and therapy by refined and minimally invasive procedures, nanosurgery, as an alternative to crude surgery. Nanotechnology will markedly improve the implants and tissue engineering approaches as well.

There is some concern about the safety of nanoparticles introduced in the human body and released into the environment. Research is underway to address these issues. As yet there are no FDA directives to regulate nanobiotechnology but as products are ready to enter market, these are expected to be in place.

Future nanobiotechnology markets are calculated on the basis of the background markets in the areas of application and the share of this market by new technologies and state of development at any given year in the future. This is based on a comprehensive and thorough review of the current status of nanobiotechnology, research work in progress and anticipated progress. There is definite indication of large growth of the market but it will be uneven and cannot be plotted as a steady growth curve. The largest expansion is expected between the years 2010 and 2015.

Marketing estimates are given according to areas of application, technologies and geographical distribution. Profiles of 125 companies, out of over 500 involved in this area, are included in the last chapter along with their collaborations.

For more information, visit http://www.researchandmarkets.com/reports/c10618

Contact

Research and Markets
Laura Wood, Senior Manager
Fax: +353 1 4100 980
press@researchandmarkets.com

Login or activate

This scene is not in the streets of Iraq, while in the U.S. state of Washington Madi root Army Medical Center. Center psychologists are using video games, reproduce wartime scenario, the treatment of some veterans of post-traumatic stress disorder (PTSD).

Virtual Reality Center in Madi-gen experience virtual reality treatment of Albert, not post-traumatic stress disorder patients. He sat in a chair, the chair of the dwarf platform rumbling Zuoxiang, and shaking from time to time, the simulation of a moving car. When a bomb hit Albert driving the Humvee military vehicles, he clearly feel the impact of the explosion, can not help every fibrillation.

Very real, Albert on the 7th of The Associated Press said. In this thrilling experience, he has oozed from the palms sweat.

Madi-Gen Army Medical Center clinical psychologist Greg Craig said that in order to more realistically simulate reality, in the implementation of treatment, doctors should be asked in detail about soldiers, inquiring lead to post-traumatic stress disorder all possible, then this Soldiers tailored virtual reality video scenes.

In addition, doctors will be needed, such as running some appreciate, hostile or smell rubber burning taste, etc., to enhance the realism.

Indeed be effective, every one U.S. soldier have experienced the impact of the garrison, Craig said: Most people go home after the natural recovery, but a small part also need extra help. Associated Press said, it is estimated that the United States Army war veterans, 15 to 30 percent of people suffering from post-traumatic stress disorder.

Prior to that, post-traumatic stress disorder treatment approaches, including individual or collective psychological therapy, that is, patients imagine that the past experiences, so that doctors know the extent of their fear, but this difficult to achieve. And virtual reality is a more realistic and vivid experience.

San Diego Naval Medical Center and Emory University, Georgia, the study shows that eight suffering from post-traumatic stress disorder of Iraq war veterans, through virtual reality treatment, of which six were in alleviating symptoms. U.S. veterans of the technology welcomed the hope that this can improve their mental health.

In fact, virtual reality therapy is not the first, who also have clinical use. Virtual Reality Medical Center in San Diego through virtual reality, to cognitive behavior therapy to treat a phobia, such as fear of heights, fear of flying, fear spiders

About the Author

From www.pharmalive.com:
The name, though catchy, is easily misunderstood by those who assume that Reality Therapy has something to do with giving people ``a dose of reality.
Fear of public speaking is one of several phobias that clinicians can treat with virtual reality therapy. Virtual environments created by Georgia.
Information, books and links to anything relating to Reality Therapy, Choice Theory or Quality Schools on the internet, William Glasser.
Reality therapy is a very powerful tool for personal growth, accomplishing goals, and measuring progress. Learn more.
This book explores how the latest virtual reality interventions can be used to treat patients with anxiety.
This topic center concerns mental and emotional problems people experience in the wake of trauma.
Reality Therapy requires a supportive environment where individuals can begin. Reality Therapy, Cowboy counselor helps teen realize the consequences.
Reality Therapy is a particular approach in psychotherapy and counseling. It has primarily been developed by the psychiatrist Dr. William.

Source: http://www.productsherbal.com