

17 November 2008

Chem-Bio News

1. DISEASE LABORATORY PREPARES FOR GERMS: *"Scientists at the University of Missouri won't have to wait much longer to study infectious diseases such as anthrax, rabbit fever, West Nile virus and Q fever."*

2. NANOPARTICLES DELIVER THEIR CARGO, THEN DISAPPEAR: *"Now a nontoxic nanoparticle developed by researchers at Penn State University is proving to be an all-around effective delivery system for both therapeutic drugs and the fluorescent dyes that can track their delivery."*

3. A TEAM OF SCIENTISTS AT THE UNIVERSITY OF LEEDS IN THE UK HAS INVENTED A BIOSENSOR DEVICE THAT CAN IDENTIFY DISEASE USING NANOTECHNOLOGY: *"We believe this to be the next generation diagnostic testing. We can now detect almost any analyte – a substance associated with disease – faster, cheaper and more easily than the current accepted testing methodology."*

Chem-Demil News

1. THE AGENT DISPOSAL PROCESS AT NEWPORT: *A brief tutorial on the subject with graphics.*

CB Daily Report

Chem-Bio News

DISEASE LABORATORY PREPARES FOR GERMS

By Jenna Youngs
ColumbiaTribune.com
November 13, 2008

"Scientists at the University of Missouri won't have to wait much longer to study infectious diseases such as anthrax, rabbit fever, West Nile virus and Q fever.

Campus officials will dedicate MU's Regional Biocontainment Laboratory on Saturday, though the official opening won't be for another couple of months, said George Stewart, chairman of MU's Department of Veterinary Pathology."

"MU received \$13.4 million for the lab, MU spokesman Christian Basi said, and contributed about \$4.6 million to complete construction, said Deborah Anderson, associate director of the Regional Biocontainment Lab.

Laboratories designated Level 3 - a reference to its security status - house "significant"

airborne infectious pathogens for which there are vaccines or treatments, Stewart said.

In 2006, MU was considered by the Department of Homeland Security for a Level 4 National Bio and Agro-Defense Facility, which would have housed lethal infectious diseases that have no cure such as Ebola and avian flu. Some Columbia community members complained that the proposed site was too close to residential areas, and MU is no longer being considered for that lab."

The full article can be found at: <http://www.columbiatribune.com/2008/Nov/20081113News006.asp>

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NANOPARTICLES DELIVER THEIR CARGO, THEN DISAPPEAR

Nano Techwire.com
November 16, 2008

"Now a nontoxic nanoparticle developed by researchers at Penn State University is proving to be an all-around effective delivery system for both therapeutic drugs and the fluorescent dyes that can track their delivery. In an article appearing in an upcoming print issue of Nano Letters (currently available online), an interdisciplinary group of materials scientists, chemists, bioengineers, physicists, and pharmacologists show that calcium phosphate particles ranging in size from 20 to 50 nanometers will successfully enter cells and dissolve harmlessly, releasing their cargo of drugs or dye."

The full article can be found at: <http://nanotechwire.com/news.asp?nid=6904>

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A TEAM OF SCIENTISTS AT THE UNIVERSITY OF LEEDS IN THE UK HAS INVENTED A BIOSENSOR DEVICE THAT CAN IDENTIFY DISEASE USING NANOTECHNOLOGY

Nano Techwire.com
November 16, 2008

"A team of scientists at the University of Leeds in the UK has invented a biosensor device that can identify disease using nanotechnology. The device, which may revolutionise the science of diagnosis, uses antibodies to detect biomarkers, molecules in the body used to identify disease. The aim of the ambitious ELISHA project, backed by the EU with EUR 2.7 million in funding, is to reduce diagnosis time to 15 minutes. The new invention may be on sale in just three years."

"Enter ELISHA (Electronic Immuno-Interfaces and Surface Nanobiotechnology: A Heteroxical Approach) and its brand new biosensor diagnosis device."

"The ELISHA device, which could be on sale in three years, is currently the size of a credit

card payment machine, but the consortium plans to slim it down to the size of a mobile phone. It uses nanotechnology - manipulation of matter at microscopic scales - to detect biomarkers in blood or urine. It then gives a yes or no answer to the presence of a particular disease. Different microchips are inserted in the device to test for different diseases."

The full article can be found at: <http://nanotechwire.com/news.asp?nid=6898>

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Chem-Demil News

THE AGENT DISPOSAL PROCESS AT NEWPORT

US Army Chemical Materials Agency News Release
November 2008

"Chemical neutralization technology was used. Some key features included:

1. Steel containers of liquid nerve agent VX were transported by truck from a secure storage area to the Newport Chemical Agent Disposal Facility.
2. A specially designed forklift loaded the steel containers into the chemical agent transfer system (CHATS) inside the agent disposal facility.
3. Highly-trained operators manually drained agent from the containers by attaching a specialized pumping unit (inset) to the container. This was accomplished using the CHATS – a protective, airtight glove box system.
4. Agent was neutralized in steel reactors by thoroughly mixing with heated sodium hydroxide and water. Control room operators directed and monitored the entire process remotely, using a state-of-the-art control system (inset).
5. Once agent neutralization was verified at the on-site laboratory (inset), the caustic wastewater was placed into on-site intermodal storage containers awaiting transport for final treatment to Veolia Environmental Services in Port Arthur, Texas.
6. Before the empty steel container left the CHATS, operators triple rinsed the container with hot sodium hydroxide and water. Workers circulated hot air through the interior of the container and conducted a visual inspection to ensure the container was clean and dry. The exterior of the container was monitored before workers transported it to the final decontamination unit. The container was placed inside this unit and heated by electrical induction to destroy potential residual traces of agent. Once the decontaminated container cooled, it was transported to storage for off-site transport to a commercial recycling center."

The full article can be found at: <http://www.cma.army.mil/fndocumentviewer.aspx?>

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