FLC NewsLINK

December 2006

T² INSIDE

T² EVENTS

SPIE Photonics West
San Jose, Calif.
January 20-25, 2007

•

Coastal Inlets Research Program 8th Annual CIRP Technology Transfer Workshop
January 22-24, 2007
Fort Lauderdale, Fla.

•

2007 AUTM Annual Meeting
San Francisco, Calif.
March 8-10, 2007

•

FLC National Meeting
Making the Connection
Arlington, Texas
May 15-18, 2007

•

World's Best Technologies
Arlington, Texas
May 15-16, 2007

T² FACT

The oldest known lock was found by archeologists in the Khorsabad palace ruins near Nineveh. The lock was estimated to be 4,000 years old. It was a forerunner to a pin tumbler type of lock, and a common Egyptian lock for the time. The lock worked using a large wooden bolt to secure a door, which had a slot with several holes in its upper surface. The holes were filled with wooden pegs that prevented the bolt from being opened.

- Mary Bellis, About.com

Los Alamos, CIVA Partner to Stop Avian Flu

Los Alamos National Laboratory (LANL) announced that Santa Fe, New Mexico–based CIVA (Company for Information Visualization and Analysis) has signed an agreement to license EpiCast software from the laboratory.

EpiCast is an epidemiological modeling and simulation system invented by LANL's Dr. Tim Germann that was designed to help understand the spread and impact from a pandemic of the so-called avian influenza (H5N1).

EpiCast has been widely publicized and received positive acclaim due to its ability to model pandemics at the individual human level in a population, backed by the most current science on the natural and deliberate spread of pathogens. CIVA will be able to run flu impact models for government, public and private organizations.

According to Duncan McBranch, Technology Transfer Division Leader at LANL, "The team CIVA has assembled to commercialize EpiCast is impressive. All have direct experience in taking technology-based products to market, and most of the CIVA leadership have a successful record of doing so with Los Alamos technology."

See LANL, CIVA Partnership, page 8

Argonne's Coin Cell NMR/MRI Imager being held by intern Katarina Ruscic.

Argonne's Coin Cell NMR/MRI Imager

Argonne National Laboratory (ANL) has developed a Coin Cell NMR/MRI Imager that can analyze thin films and membranes (such as those in a coin cell battery) in real time, under real test conditions, through a complete battery charge/discharge cycling process.

The process provides three simultaneous views of complementary information never before available to battery researchers.

The ANL imager is a simple device that combines the function of a nuclear magnetic resonance (NMR)/magnetic resonance imaging (MRI) detector, an electrochemical cell, and a video camera. The device can be used as a stand-alone electrochemical device or with NMR/MRI, video, temperature, and/or pressure add-ons.

The multipurpose device can perform in situ, real-time analyses of thin films by NMR spectroscopy, MRI imaging, electrochemistry measurements, and video imaging, and can be used for electrochemical synthesis of novel film/membrane materials.

The device's unique NMR/MRI capability is the result of a design twist that turns a problem into a solution. The Argonne Coin

See Argonne's Coin Cell, page 4

DC on T²: Worldwide Patent Applications Increase

by Gary Jones, FLC Washington, DC Representative

Greetings from DC. I am writing this column the day after the 2006 midterm elections which, as everyone knows, bring significant changes to the composition and leadership in both houses of Congress. What this new Congress means for the many bills currently "in process" that are of interest to the S&T (and, by extension, the tech transfer) community is anyone's guess. When Congress goes back to work, some of the items awaiting action include the 2007 R&D appropriations, as well as numerous bills focused on U.S. competitiveness, S&T education, patent reform, and immigration—all of which may affect the S&T community in some form.

Any attempt to analyze the impact of the new Congress on these issues before the new committee chairs are named and committee agendas made apparent would be purely speculative. And so, while the dust clears and we await some concrete indication on how this will play out for our community, I decided to go abroad (or at least international) for this column and expand beyond last month's discussion on the explosion in U.S. patent applications—by highlighting some recent statistics on patenting internationally.

The World Intellectual Property Organization (WIPO) recently issued its patent report (www.wipo.int/ipstats/en/statistics/pat-

See DC on T², page 5

Fed Labs Flash | Technology Transfer Notes

LBNL's Genome Center

The newly established Berkeley Genome Center, led by members of the Life Sciences Division in the Department of Energy's Lawrence Berkeley National Laboratory (LBNL), is one of seven Cancer Genome Characterization Centers to receive awards from the National Cancer Institute and the National Human Genome Research Institute. Earlier today the two institutes, both part of the National Institutes of Health, announced a three-year, $35-million project that will seek to identify important genetic changes involved in lung, brain, and ovarian cancers through genome analysis.

The Berkeley Cancer Genome Center is a collaboration among LBNL, the University of California at Berkeley, and the University of California at San Francisco. The center's director is Joe W. Gray, who is the director of the Life Sciences Division and LBNL's Associate Laboratory Director for Life and Environmental Sciences.

Computational biologist Paul Spellman of the Life Sciences Division is co-director.

"The Berkeley Cancer Genome Center will be focused on identifying changes to the populations of messenger RNA that occur in cancer," said Spellman. Such changes are indicative of different kinds of proteins produced by the altered genomes of tumor cells.

More info: Paul Press, 510-486-6249, paul_press@lbl.gov

INL's Explosive Detection

In the aftermath of explosive terrorist attacks like Oklahoma City and the 1998 bombings of U.S. embassies in Kenya and Tanzania, researchers at Idaho National Laboratory have been working to construct a portal-style, vehicle-borne explosives detection system. In December, the Idaho Explosives Detection System (IEDS) will be installed at Ohio's Wright-Patterson Air Force Base for semipermanent field testing.

The award-winning IEDS is designed to nonintrusively interrogate cargo trucks before they get near high-profile targets like federal buildings or foreign embassies.

"We offered the IEDS system to any military base that was interested in installing and operating the system," said Jeff Klinger, IEDS program manager. "Wright-Patterson stepped forward and was in the best position to provide us with real-world data."

The inspection process works similar to a semi-truck weight station. As cargo vehicles approach a facility, they are directed to drive into an inspection zone. Once the driver exits the vehicle and proceeds beyond a 90-foot safety area, the interrogation process begins. Using a small amount of moving components, the IEDS encloses each side of the vehicle.

In this setup, two neutron generators—one on each side—saturate the vehicle with neutrons at a rate of 2,000 repetitions per second.

This rapid interrogation causes the molecular makeup of materials inside the vehicle to excite and emit gamma rays.

At the same time, a series of 32 sodium-ion detectors identifies the signatures of the gamma rays. If explosives are present, IEDS will alert operators in less than 300 seconds.

"The IEDS introduces into the atoms a small amount of energy that allows the detectors to read the gamma rays without changing the molecular makeup of the materials," said Klinger. "This introduction of energy is so small and fast that it leaves no residual effect on items inside."

More info: Ethan Huffman, 208-526-0660

Ulysses Starts New Journey Around Sun

Sixteen years after its launch on Oct. 6, 1990, the Ulysses spacecraft has begun its third solar polar orbit—a journey around the poles of the sun. The mission, a joint NASA-European Space Agency venture, studies how the sun's gaseous outer atmosphere spews into space, creating huge space storms. This violent "space weather," in turn, can affect Earth's electricity, satellite and cell phone communications.

Observations by previous spacecraft viewed the sun from its equator. Ulysses is the first mission to move out of that plane and maneuver into an orbit that allows it to study the sun's poles, a view that gives a more complete perspective of the sun's atmosphere.

Y-12 and Fisk University Partnership

George Dials, president and general manager of BWXT Y-12, and Hazel O'Leary, president of Fisk University and former Secretary of Energy, recently signed a mentor-protégé agreement in a ceremony in Oak Ridge, Tenn.

The Department of Energy (DOE) Mentor-Protégé Program is designed to encourage DOE prime contractors to assist small disadvantaged firms certified by the Small Business Administration (SBA) under Section 8(a) of the Small Business Act, which includes women-owned small businesses, historically black colleges and universities, and other minority institutions of higher learning and small business concerns owned by service-disabled veterans.

The program provides BWXT Y-12 with a mechanism for entering into integrated working agreements and providing nonfinancial assistance to these entities.

The agreements are designed to enhance the protégé's business and technical capabilities and to foster long-term business relationships between these small businesses or universities and DOE prime contractors.

According to Dials, the agreement "will significantly contribute to Y-12's achieving its objectives of promoting technological growth and business development opportunities within the university while new collaborative research and development opportunities will help Y-12 in accomplishing its national security missions with DOE/NNSA."

More info: www.y12.doe.gov

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TECH WATCH | LABORATORY TECHS READY FOR TRANSFER

COLLECTING GEOSPATIAL DATA

The ike™ 304, a ruggedized, hand-held device for collecting geospatial data with digital instrumentation, is a product of a CRADA between the Construction Engineering Research Laboratory and Surveylab, Ltd.

The product seamlessly integrates and synchronizes a global positioning system (GPS), laser distance meter, digital camera, compass, inclinometer, geographical information system (GIS), and personal digital assistant (PDA) computer.

These developments allow users to quickly capture a rich array of geospatial and attribute data annotated with images and text, e.g., capture and review a target position and photo, add attribute data to the feature, review and add photos, and view the new feature on a map.

The instrument's database stores and shares data, and its automated GIS-based system facilitates data analysis, interpretation, and reporting.

More info: John T Britt, 217-373-7288, john.t.britt@erdc.usace.army.mil

LBNL's HOME HEATING

James Lutz of Lawrence Berkeley National Laboratory (LBNL) has invented a gas water heater that is up to 30 percent more efficient than conventional gas water heaters.

The design replaces traditional central tube heating with a side-arm heat exchanger, thereby eliminating standby energy losses that occur when heat is transferred from the hot water to the cooler central dip tube when not actively being heated.

Integral to the side-arm component is a simple system for capturing steam heat from the combustion exhaust—a second source of energy inefficiency in conventional designs—and collecting the condensate so that it doesn't exit the venting system.

A basic electric water heating tank can be adapted to the LBNL design.

Applications

• Residential gas water heating

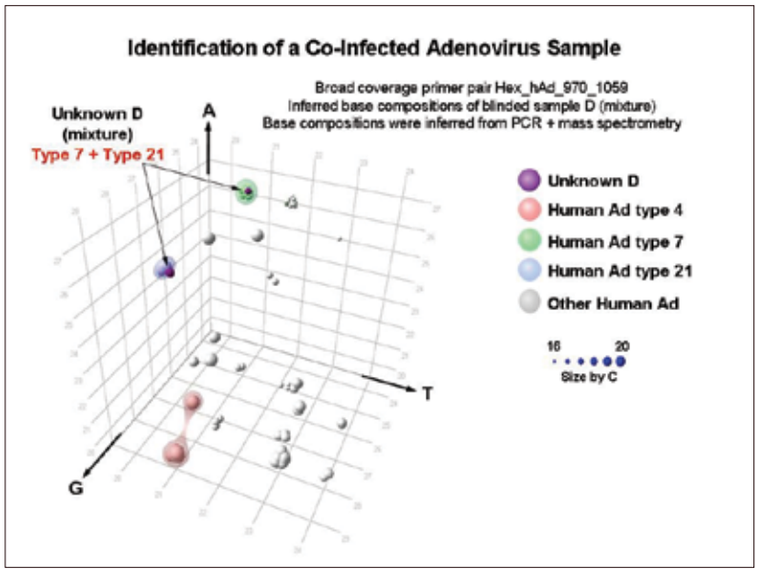
Advantages

• 90 percent efficient; 30 percent more efficient than conventional gas water heaters

• Can be manufactured by adapting a basic electric water heater tank

More info: 510-486-6467, TTD@lbl.gov

TIGER TO IDENTIFY VIRUSES, LIFE FORMS

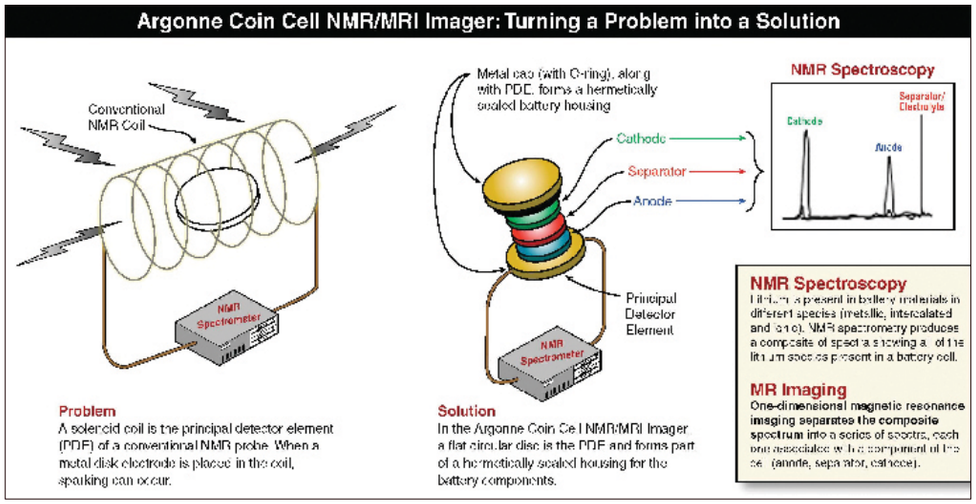


The Naval Health Research Center (NHRC) San Diego is one of the first diagnostic labs to utilize the TIGER (triangulation identification for genetic evaluation of risks) system.

TIGER (recently renamed the T-5000), developed by IBIS Biosciences, is designed as a universal diagnostic device, theoretically capable of identifying all life forms and viruses using DNA/RNA sequence information. NHRC is using this device to identify pathogenic bacteria and viruses found in throat swab samples from military personnel with symptoms of upper respiratory disease. The platform consists of a PCR-based system for signal amplification and a mass spectrometer for uniquely sensitive, fast, and accurate detection. Precise mass data are processed to yield base count information—the total number of each type of nucleotide base—in amplified DNA fragments (PCR products). This information is gathered from several distinct genes and compared to databases of previously sequenced alleles and known TIGER profiles to identify the source(s) of the amplified fragments. Previous NHRC/IBIS collaborations have investigated adenoviruses, Group A Strep, and influenza in recruit populations. NHRC is currently using TIGER in parallel with gold-standard technologies such as culture, immunofluorescence and RT-PCR in an effort to clinically certify and apply TIGER for routine influenza diagnosis. The Center has a collaborative research agreement with IBIS to study the uses of TIGER relevant to avian influenza identification and coronavirus detection, using the TIGER machine currently in service in the NHRC Respiratory Disease Advanced Diagnostics facility.

More info: Dr. Van Orden, 619-553-9289

Argonne's Coin Cell, from page 1



Cell NMR/MRI Imager is composed of a coin cell press, principal detector element (PDE), and the internal components of an electrochemical cell.

The PDE is a flat metal conductor that simultaneously serves as the NMR detector element and the current collector for the cathode or anode electrode in the electrochemical cell. The PDE is connected at opposite ends to metal conductor rods that form part of an electromagnetic resonator circuit. A cylindrical metallic container houses the detector element and conductor rods, and forms part of a complete radio frequency current. This design is what enables the device's unique NMR/MRI capability, allowing the analysis of active thin films and membranes.

What this means is that-—for the first time—a film or membrane, such as the as-manufactured working components of a coin cell battery, can be analyzed directly ("as is") by being placed on a flat circular detector.

Turning a Problem Into a Solution

You can't do NMR/MRI if metal is involved, so how can the Argonne Coin Cell NMR/MRI Imager record NMR spectra and MRI images?

Essentially, the Imager transforms a "show-stopping" problem into a simple, elegant solution. In NMR spectroscopy, a metal detector element—traditionally in coil form—generates information about a sample. But when that sample is metal, such as the steel housing of a coin cell battery, there is an incompatiblity that results in, at best, inaccurate (distorted) or incomplete data and, at worst, sparking that can destroy the NMR coil and the sample.

ANL's device transforms this problem into a solution by using a circular metal disk as the principal detector element. This enables NMR analysis of films or membranes in as-manufactured form under actual test conditions—and, in the case of battery materials, throughout the battery's entire cycling process, a capability not currently offered by any other device.

NMR spectrometry produces a collection of spectra with information on each of the working components (cathode, separator, and anode; see figure on left). The NMR spectra are "sorted out" into separate spectra through one-dimensional MRI—the key that makes the concept work.

Functionality

All three functionalities of the Coin Cell Imager (NMR/MRI, electrochemical, and video) can be illustrated by one application in the important area of the ubiquitous lithium-ion rechargeable battery used by consumers (portable electronic devices such as cell phones and laptop computers, hearing aids, biomedical devices, etc.).

The same type of battery promises to have an even greater impact on providing the energy that will be needed for electric and hybrid-electric vehicles.

For continued advancement in making batteries that are increasingly smaller but more powerful, the development of better battery materials is key. Existing materials impose limitations on the size, power, and life of rechargeable lithium batteries. ANL's coin cell imager is uniquely suited to investigate the battery challenges that impose limitations on size, power, and life.

ANL researchers demonstrated the detector's utility by investigating for the first time the cyclic insertion and extraction of lithium in a carbon mixture that is currently used in commercially available lithium-ion batteries by 7Li NMR spectroscopy under actual operating conditions.

The study of battery challenges under operating conditions is far more useful because the researcher can catch the onset of the problem and follow its progress as the battery is charged and discharged multiple times, and subjected to temperatures above or below ambient.

These conditions mimic the usage of the battery by the consumer, including those times when the cell phone is accidentally left in the car in extremely hot or cold temperatures. The in situ capability of the coin cell battery imager allows researchers to conduct probe experiments throughout a lithium battery's entire cycling process. They can now directly and unambiguously follow the various fractions of lithium ions in different elec-

DC on T², from page 1

ents/patent_report_2006.html), highlighting trends in worldwide patenting activity through 2004. As stated in the press release, there has been a "marked increase in the use of the patent system internationally," with 5.4 million patents in force in 2004.

Further, the data indicate that "the patent system is an integral part of increasing global economic activity, with the increase in patent filings closely mirroring economic growth around the world."

Patent applications filed worldwide nearly doubled from 1985 to 2004, increasing annually since 1995 at an average rate of 4.75 percent to a total of nearly 1.6 million filed in 2004 alone (and over 600,000 granted in the same year).

While there was steady growth in applications filed in the applicant's country of residence (highlighting domestic innovative activity), much of the increase reflected growth in patenting by nonresidents (i.e., in countries outside the applicant's home market). Among the nonresident filings, there was also a noticeable shift toward using the Patent Cooperation Treaty (PCT) system.

Patent filings by residents increased by 3.4 percent globally between 1995 and 2004, with some of the largest increases in the developing world.

The top five countries for total patents filed by residents are Japan, U.S., Republic of Korea, Germany and China. The top five countries exhibiting increases in resident patenting are China (557 percent increase between 1995 and 2004), India (365 percent), Republic of Korea (76 percent), European Patent Office (EPO) (54 percent), and U.S. (53 percent).

Resident Patent Filings *(per million, 2004)*	
Japan	2884
Republic of Korea	2189
United States	645
Germany	587
Australia	479

Resident Patent Filings *(per billion dollars of GDP, 2004)*	
Republic of Korea	116.2
Japan	107.3
Germany	22.6
New Zealand	18.7
United States	17.7

Resident Patent Filings *(per million dollars of R&D expenditures, 2004)*	
Republic of Korea	4.60
Japan	3.49
Belarus	3.15
New Zealand	1.67
Ukraine	1.5

Patent filings by nonresidents increased at double (7.4 percent) the rate of residents for the same period. The top five countries for total patents filed by nonresidents are the U.S., EPO, China, Japan and Canada. As with resident filings, the top five countries with the highest increases in nonresident patent filings reflect improvements in emerging markets as attractors for patenting activity; China (644 percent increase between 1995 and 2004) led the way, followed by Singapore (229 percent), Brazil (212 percent), EPO (131 percent), and India (105 percent).

However, even with this rise in patent applications in emerging markets, the use of the patenting system is still concentrated in a few markets; U.S., Japan, Republic of Korea, China and the EPO account for 75 percent of all worldwide patent applications and 74 percent of all patents granted. Comparing country statistics, particularly absolute values, for any economic activity can be misleading. A relative difference in size of the underlying economy is but one characteristic that can skew comparisons.

Accordingly, the report normalizes patent filing statistics across population, gross domestic product (GDP) and R&D expenditures, to bring the data into a more common frame for comparison.

Taking population into account, the report highlights resident patent filings per million population in 2004 (see chart to the left).

Finally, there has also been a marked increase in PCT applications, with an "average annual growth rate of 16.8 percent between 1990 and 2005."

There were 134,000 PCT applications in 2005, and 47 percent of all international patent filings now utilize the PCT system.

Filings from the member states of the European Patent Convention constitute the largest country of origin filing group for PCT applications, followed by the U.S., Japan, Germany and France. The fastest growth rates are in Japan (22.4 percent), Republic of Korea (24.4 percent), and China (46.8 percent).

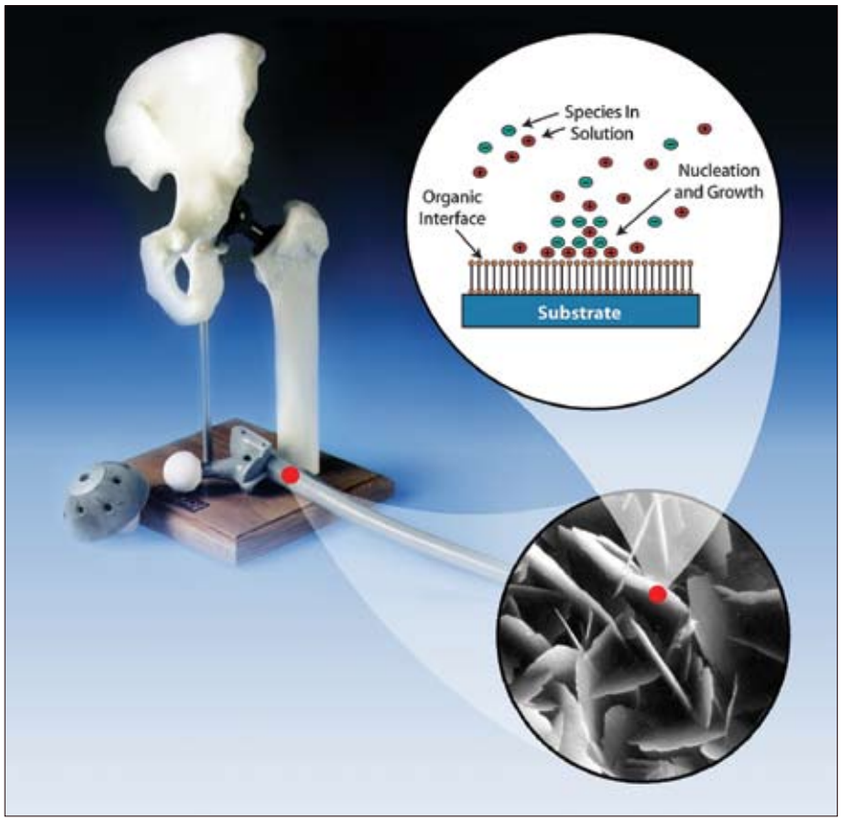
As WIPO points out, interpreting patent statistics can be challenging at best.

While there has been a recognized move toward harmonizing patenting systems, distinct differences remain across the globe—from reporting variations to limits in data availability.

WIPO includes useful "interpretive aids" in its report to help the reader better understand the data presented.

Gary can be reached at gkjones@flcdc.cnchost.com.

PNNL Develops Life-Saving Bioactive Coating



This micrograph of the antimicrobial thin-film coating, along with a schematic, shows the process for depositing the coating on a medical device that significantly reduces the risk of dangerous infections.

Researchers at Pacific Northwest National Laboratory (PNNL) developed the first water-based process that allows calcium-phosphate thin-film coatings containing controlled-release bioactive therapeutic agents to be deposited on orthopedic devices for implant.

Expected benefits to the thousands of implant recipients each year will be twofold: 1) the antimicrobial agent in the coating will help prevent dangerous and costly post-surgical infections, and 2) the water-based deposition process, coupled with the bioactive antimicrobial agent, provides an advanced method for applying thin films containing calcium-phosphate coatings—a natural component of bone—to orthopedic implants.

Army orthopedic surgeons provided PNNL researchers with the preclinical data needed to market the technology. The marketing-to-licensing process encompassed four years of intense effort and dedication.

The additional expense to a licensee of obtaining FDA approval made the technology difficult to license.

However, Bacterin, a medical device-testing laboratory for medical implant manufacturers, sought to expand its product base and possessed the necessary FDA-approved assay to test the technology.

The technology was licensed in 2004 by Bacterin, which has since been listed as one of *Fortune* magazine's top 25 breakout companies.

The company joined forces with the Department of Defense, receiving a $1.4-million appropriation to further develop the technology for coating metal rods and pins for use on the battlefield. In addition, Bacterin has forged relationships with other medical device manufacturers who have agreed to use the unique coating on their products.

The thin-film technology is expected to play a major role in dramatically reducing post-surgical infections in implant recipients and wounded military personnel, and will greatly increase acceptance of artificial joints by the body.

The prevention of these infections promises billions of dollars of savings to patients and the U.S. government in followup medical care. In addition, significant cost savings and reduced environmental impact will be realized in the manufacturing process as the simplified water-based deposition process does not require use of multimillion dollar instruments and uses very few hazardous materials in its manufacture.

For more information about Bacterin, visit www.bacterin.com.

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INL Torch

Idaho National Laboratory (INL) has designed a GTAW torch that is solely air-cooled and capable of welding at 300 amps continuous duty.

The torch features a tungsten stick that can be remotely adjusted from the gas cup while maintaining the tip of the tungsten stationary with respect to the torch body. It also is possible to remotely change out the tungsten. The fixed tungsten allows the torch to be operated with a camera system for any remote welding without the requirement of continually changing the view of the cameras, thereby allowing for continuous welding cycles.

More info: Ida Shum, 208-526-0744

LANL Fuel Cell Stack

Los Alamos National Laboratory (LANL) scientists have created a novel and efficient direct methanol fuel cell (DMFC) stack. This new stack has a circular footprint, within which are a cathode and anode manifold, tie-bolt penetrations, and tie-bolts.

Each fuel cell uses two graphite-based plates. One plate includes a cathode active area that is defined by serpentine channels connecting the inlet and outlet cathode manifold. The other plate includes an anode active area defined by serpentine channels connecting the inlet and outlet of the anode manifold, where the serpentine channels of the anode are orthogonal to the serpentine channels of the cathode.

Application(s)

- Portable electronics
- Electric scooters
- Battery chargers
- Wearable power packs.

More info: Laura Barber, 505-667-9266, ljbb@lanl.gov

LLNL's Imager Technology

Lawrence Livermore National Laboratory (LLNL) is offering a partnership opportunity to further develop and deploy its large area imager (LAI) technology.

This technology addresses applications associated with the Department of Homeland Security (DHS), Department of Defense, and Department of Energy.

One of the major challenges faced by DHS is the remote detection of radioactive materials that could be used in a nuclear or radiological weapon of mass destruction.

LLNL is seeking industrial partners with a demonstrated ability to bring such inventions to the market.

All licensing activities are conducted under policies relating to the strict nondisclosure of company-proprietary information.

More info: Catherine Elizondo, 925-422-0801, elizondo1@llnl.gov

Protein Antibiotic

Due to the increase in drug resistance among bacteria, continued progress in the development of new antibiotic treatments is needed. Available for licensing and commercial development is the small protein SrgT, its analogs and related peptides. SrgT is a 43-amino acid protein that effectively inhibits bacterial growth. This protein likely exerts its antibiotic action by inhibiting the metabolism of glucose in these microorganisms. The current technology provides a novel approach to the treatment and prevention of bacterial infections.

More info: Cristina Thalhammer-Reyero, thalhamc@mail.nih.gov

NCI Isolation

Drs. Ira Pastan and Mitchell Ho of the National Cancer Institute have developed a new method of cell surface display of single-chain antibodies for affinity maturation in a mammalian system.

The system is compatible with other mammalian expression systems, and it is a rapid, simple and robust procedure.

Applications include a new method of displaying Fvs on human cells and a new method useful for isolating new high affinity antibodies for cancer, AIDS and other diseases.

More info: Betty Tong, Ph.D., 301-496-0477, tongb@mail.nih.gov

Pollution Control

Maintaining air quality is essential for human safety and environmental protection. Numerous industrial processes require airborne particulate monitoring, concentration and filtration.

Escalating fears of airborne toxic contaminants and biotoxins are driving the emergence of new monitoring and filtration requirements.

The Aerosonic acoustic concentrator technology, developed by scientists at Los Alamos National Laboratory (LANL), is a novel method of particle concentration that can be used in these critical areas.

Aerosonic devices are low-power, inexpensive, and have no moving parts. Employing a small piezoelectric tube to generate standing waves, the Aerosonic method uses sound pressure to locally concentrate many types of aerosols ranging from smog particulates to suspended microorganisms.

More info: Laura Barber, 505-667-9266, ljbb@lanl.gov; www.lanl.gov/partnerships/license/technologies

Thwarting Coccidiosis

Agricultural Research Service (ARS) researchers have developed a method for controlling avian coccidiosis, a major poultry disease caused by several species of the intestinal parasite Eimeria.

ARS's method is a pretreatment regimen that could be administered either orally to poultry or injected into embryonated eggs.

Coccidiosis is a leading disease that costs the poultry industry more than $3 billion worldwide in total annual economic losses from treatment expenses, bird losses, and low bird weight (critical for marketing broilers). Current disease control strategies include drug-treatment regimens; however, the parasite is developing resistance to these treatments. The industry needs a combination of preventative and control strategies to control poultry coccidiosis.

More info: Tara T. Weaver-Missick, 301-504-6965, twm@ars.usda.gov

PNNL RF Tags

Researchers at Pacific Northwest National Laboratory (PNNL) have developed miniature radio frequency (RF) tags that are ideal for rapid, remote inventory tracking and monitoring a wide variety of items. The PNNL technology provides long-range readings, simultaneous readings, the ability to monitor inputs and control outputs, and location tracking. RF tag systems offer an advantage over bar-coding inventory and monitoring systems because line-of-sight access to the tagged items is not necessary.

The PNNL RF tags exhibit superior performance in difficult environments.

More info:http://availabletechnologies.pnl.gov/securityelectronics/rftags.stm

LANL, CIVA Partnership, from page 1

The input variables for EpiCast can be as detailed as the actual data available. For instance, EpiCast has been run using U.S. census and transportation data at the individual level (population of 280 million). However, running detailed simulations of this type requires enormous supercomputing power.

CIVA said EpiCast would be made available, using a service–centric model, to all organizations, taking into account their ability to pay.

The cost to subsidize nonprofit organizations and agencies will come from nonprofit endowments, government grants, and nongovernmental organizations.

According to Dr. L. Robert Libutti, CIVA chairman, "We feel we have a responsibility to humanity to disseminate the modeling as widely and as fast as possible. We are making every effort possible to make EpiCast available to any and all organizations who could benefit from the insight the model affords."

LANL is a multidisciplinary research institution engaged in strategic science on behalf of U.S. national security.

The laboratory is operated by Los Alamos National Security, LLC (LANS), a team composed of Bechtel National, the University of California, BWX Technologies, and Washington Group International for the Department of Energy's National Nuclear Security Administration.

LANL enhances national security by ensuring the safety and reliability of the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction, and solving problems related to energy, environment, infrastructure, health, and global security concerns.

CIVA was founded to commercialize the great wealth of information visualization and data mining technologies developed at U.S. national laboratories, including LANL, Sandia National Laboratories, and Pacific Northwest National Laboratory.

CIVA is backed with private equity and led by Dr. Libutti.

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