FLC NEWSLINK

April/May 2006

T² FACT

In 1927, Philo Farnsworth of Beaver County, Utah, was the first inventor to transmit a television image comprised of 60 horizontal lines. The image was a dollar sign. Farnsworth developed the dissector tube, the basis of all current electronic televisions. He filed for his first television patent in 1927. *"There's nothing on it worthwhile, and we're not going to watch it in this household, and I don't want it in your intellectual diet."* - Philo Farnsworth's feelings about watching television.

- Mary Bellis, About.com

T² EVENTS

Photovoltaics Summit 2006
San Diego, Calif.
June 27-28, 2006

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AUTM Central Region Meeting
Minneapolis, Minn.
July 23-25, 2006

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FLC Mid-Continent/Far West Regional Meeting
Colorado Springs, Colo.
August 29-31, 2006

•

FLC Midwest/Southeast Regional Meeting
Nashville, TN
October 25-27, 2006

•

Optics East 2006
Boston, Mass.
October 1-4, 2006

FLC Mourns Loss of Former Vice-Chair

Larry M. Dickens, Member-at-Large on the FLC Executive Board and former Vice-Chair, died suddenly on May 8, 2006, at his home in Oak Ridge, Tenn., of an apparent heart attack. He was 55.

Larry served the FLC for many years at both national and regional levels, and was completing a term as Member-at-Large after a brief hiatus from the FLC because of a job change. In 2003 Larry was elected Vice-Chair, a post he held until 2005. During this time he also served as Chair of the Planning and Policy Committee. Previously, Larry served as Southeast Deputy Regional Coordinator from 2001 to 2003 and was elected to a two-year term as Member-

Larry Dickens, page 4

ARS Finds Smoke-Clearing Tech From Poultry House Tool

by Kim Kaplan, Agricultural Research Service

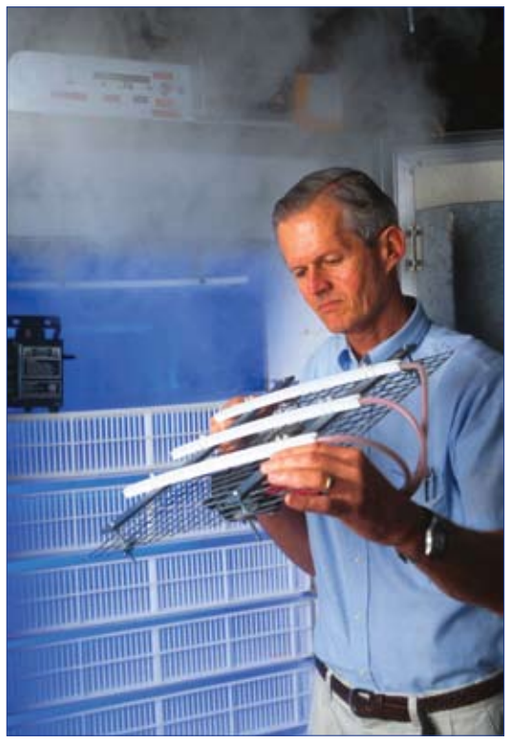
A device invented by the Agricultural Research Service (ARS) to clean dust and microorganisms from the air of poultry houses may also help people escape during fires and make it easier for firefighters to locate people in smoke-filled rooms.

The technology was originally developed by agricultural engineer Bailey Mitchell of ARS's Southeast Poultry Research Laboratory in Athens, Ga., to trap airborne particles like dust and microbes in poultry houses. Unlike previous technology, which was typically large, bulky, expensive, and cost from $1,000 to $25,000, Mitchell's machine is relatively small and could be portable and battery-operated.

ARS has already licensed the device, called the Electrostatic Space Charge System (ESCS), for agricultural applications to Baumgartner Environics, Inc., of Olivia, Minn.

ESCS generates a negative electrostatic charge on dust and other airborne particles, causing them to be attracted to grounded surfaces like walls or the floor. Unlike most air cleaners, it does not re-

See ARS Smoke Tech, page 4



Agricultural engineer Bailey Mitchell demonstrates an electrostatic air cleaning system. The hatching cabinet used here is a small version of ones used commercially for hatching chicks.

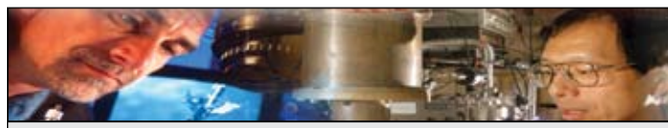
DC on T²: Globalization

by Gary Jones, FLC Washington, DC Representative

Greetings from DC. The globalization of science and technology (S&T) continues, characterized by the rapid emergence of Asian economies other than Japan becoming increasingly stronger players over the past decade and a half. Countries like South Korea, Taiwan, Singapore, Malaysia, Thailand and, of course, China have continued to strengthen their focus on S&T, becoming important players in high-tech markets and attracting S&T-related investment.

These developments are "recasting the S&T scene." While in an absolute sense global growth in funding and personnel employed in S&T is ubiquitous,

See DC on T², page 5



T² INSIDE

Fed Labs Flash | Technology Transfer Notes

Jefferson Lab Contract Awarded to Jefferson Science Associates

by Craig Stevens, DOE Public Affairs

The Department of Energy has selected Jefferson Science Associates, LLC, as the contractor for management and operation of the Thomas Jefferson National Accelerator Facility. The contract, which has a potential value of $2 billion, was effective April 17, 2006.

"We have selected the team that we believe is best equipped to lead this important Office of Science laboratory for the department, and we look forward to working with them as they manage Jefferson Lab in support of the scientific community," said Dr. Raymond Orbach, Director of the Office of Science.

The contract consists of a five-year base period with a value of $500 million. The contractor may earn up to an additional 15 years based on performance, bringing the total contract value to $2 billion over 20 years.

Jefferson Science Associates is a joint venture between Southeastern Universities Research Association, Inc., and CSC Applied Technologies, LLC, that brings the expertise of both companies to the management and operation of Jefferson Lab.

Southeastern Universities Research Association, headquartered in Washington, D.C., brings a wealth of scientific expertise in the areas of nuclear physics and accelerator technology.

CSC Applied Technologies of Fort Worth, Texas, brings a strong background in operations and business management systems. Dr. Christoph Leemann will serve as the laboratory director.

"Both companies bring skills that will allow us to continue to raise the prominence of this laboratory, and we welcome Jefferson Science Associates, LLC, to the Office of Science team," Dr. Orbach said.

Jefferson Lab is the Office of Science's primary laboratory devoted to the study of nuclear physics. Its main focus is to understand how quarks – the basic building blocks of the nucleus of every atom – build up the matter around us.

The research program consists of investigation of the fundamental structure of matter and is home to the U.S.'s expertise in superconducting accelerator technologies. User facilities include the Continuous Electron Beam Accelerator Facility and the Free Electron Laser. Over 2,000 researchers from around the world use these facilities every year.

Jefferson Lab was established in 1984 and is located on a 206-acre site in Newport News, Va. Approximately 700 people are employed at the facility, which has an annual budget of about $100 million.

For more information on current program activities, visit the website at <www.jlab.org>.

The Office of Science is the single largest supporter of basic research in the physical sciences in the United States, providing more than 40 percent of total funding for this vital area of national importance.

It oversees and is the principal federal funding agency of the nation's research programs in high-energy physics, nuclear physics, and fusion energy sciences.

Sandia Dedicates New Microfab Building

The setting sun reflects off the glass of the cylindrical training center attached to SNL's new Microlab. The building is the second of three to come online of the defense lab's $500 million MESA project.

A building dedication celebrating the formal opening — on time and on budget — of Sandia National Laboratories' (SNL) architecturally attractive Microfab and Microlab facilities was held Friday, April 21, at Kirtland Air Force Base.

The Microlab building — a key third of the half-billion-dollar MESA complex, SNL's largest project ever — is possibly the most scenic building SNL has yet built. A short tour of this building will be offered.

Ringed by closely spaced boulders to protect against vehicular security incidents and using, for the most part, only basic materials like cement, steel, and glass, the imaginative, eco-friendly design — with light coming in from external walls of glass and large skylights three stories above the building's central corridor — is expected to encourage interactions among formerly separated groups in SNL's workforce. The primary intent is to combine the expertise of three groups — electronics, photonics, and computer visualization — to more quickly imagine and design better microelectronic devices to support the needs of U.S. national security and the nuclear weapons complex of the future.

A second purpose is to create designs and methods that later might be useful for the consumer needs of U.S. industry, which would use commercial manufacturing plants to produce products in the large numbers needed to satisfy a mass market.

The Microfab replaces SNL's aging Compound Semiconductor Research Laboratory. The new three-story facility is one of the most modern and complex buildings at SNL and the first of three new facilities that make up the MESA complex.

FLC NewsLink

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Tech Watch | *Laboratory Techs Ready for Transfer*

Berkeley's Flexibone

Carolyn Bertozzi and colleagues at Lawrence Berkeley National Laboratory (LBNL) have developed a rapid and inexpensive method to incorporate high mineral content into a polymer scaffold to create lightweight composite materials with a wide range of applications.

The technique can be used to incorporate ceramics, metals, or semiconductors into hydrogels. These Flexibone composites will be useful in a variety of biological and nonbiological applications that require a flexible polymer as well as the ability to tune strength and electronic, magnetic, conducting, and insulating properties.

The LBNL technique can be used to prepare composites of various sizes and shapes in under ten minutes, without the need for advanced equipment.

The process involves mixing the polymer building blocks, the filling, and the initiators in the desired ratio, transferring the mixture to a mold, and allowing it to solidify at room temperature.

The properties of the material can easily be fine-tuned by varying parameters such as the nature of the hydrogel, the additives, solvents, and processing conditions.

In an application of LBNL's technique, Bertozzi and her colleagues prepared an artificial bone-like material by incorporating 37–70% hydroxyapatite mineral into pHEMA (polymer hydrogel). The hydrogel-mineral composite has sustained compressive strains up to 90% and over 600 Mpa stress without fracturing.

In addition, the LBNL composite exhibits excellent mineral-gel integration. The material retains enough elasticity to be cut easily into suitable shapes and tight-fitted as a bone implant without the need for further fixation procedures.

The LBNL invention will be of significant value for clinical applications involving repair of bone and dental defects, as well as a wide range of nonbiological applications.

Applications

- Bone implants
- Dental implants
- Bio-cements
- Flexible composites with magnetic and electrical properties

Advantages

- Inexpensive, rapid, and efficient
- Easily adapted to incorporate a wide range of materials
- Easily molded under ambient conditions
- Allows incorporation of 10–90% mineral content into hydrogels
- Enables fine-tuning of composite properties

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

NIH Clones T-cell Receptor

Renal cell carcinoma (RCC) is the most common renal tumor, with approximately 30,000 cases per year in the U.S.

The survival rate for this cancer is very low—only 10% of patients survive because this carcinoma is resistant to most chemotherapies.

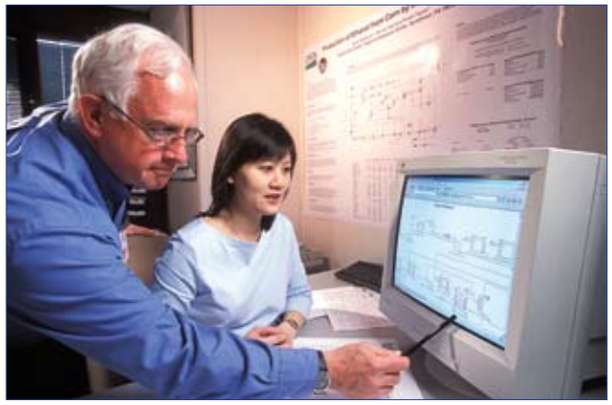
A T-cell receptor that was cloned from a human immune cell by researchers at the National Institutes of Health (NIH) has the ability to recognize a number of human kidney tumors. The cells were able to kill kidney cancer cells in patients and, when introduced into other human immune cells, these cells also acquired the ability to kill kidney cancer cells.

This invention also introduces novel methods using dendritic cells to generate both CD4+ and CD8+ RCC- reactive T-cells for use in antigen identification and therapeutic protocols.

This is the first and only cloned T-cell receptor that recognizes a majority of human kidney tumors.

More info: Michelle A. Booden, Ph.D., 301-451-7337, boodenm@mail.nih.gov

ARS Recovers Ethanol for Energy



Using a new computer model, cost engineer Andy McAloon and chemical engineer Winnie Yee discuss different ethanol production techniques and how they might affect costs of producing the fuel.

Agricultural Research Service (ARS) scientists have designed a device that can be used for recovering ethanol or other water-soluble organic products resulting from the fermentation process.

ARS's invention (a spiral-wound supported liquid membrane module) is a low-energy chemical separation device that combines the processes of extraction and pervaporation in a single piece of equipment, an advantage over existing separation devices.

Distillation is the standard technology for recovering ethanol from fermentation broths—an intensive process requiring energy equivalent to about 20 percent of ethanol's fuel value. This technology allows for continuous removal of ethanol from a fermentor, which can increase both fermentor productivity and product yield, thereby reducing production costs. The device incorporates a liquid membrane where the liquid (solvent) can be replenished without interrupting the device's operation.

The biofuel ethanol industry currently has a production capacity of 4 billion gallons/year.

The primary fuel used is natural gas, which has shown rapid increases in price. The energy cost for distillation and dehydration is a major operating cost for fuel ethanol plants. Using a low energy separation device instead of distillation could improve the energy balance for ethanol, as well as reduce the costs of operating biofuel plants.

Biofuel producers could use this technology for removing and purifying ethanol. Bio-based chemical producers could use the invention for recovering and purifying water-soluble organics.

Wastewater treatment companies could use the technology for removing volatile organic compounds from wastewater. Also, petrochemical companies could use the technology for separating hydrocarbons or gas mixtures; and natural gas producers could use it for separating gas mixtures.

More info: Richard D. Offeman, 510-559-6458, roffeman@pw.usda.gov

ARS Smoke Tech, from page 1

quire air to move through it for cleaning to occur.

Mitchell used a smoke generator to demonstrate ESCS's abilities, which gave rise to the idea that the device can clean the air of smoke just as easily as it does dust and microbes. What still needs to be tested is just how fast it can actually clear smoke to provide a reasonably clear field of vision, according to Mitchell.

By mounting the self-contained, waterproof device in areas such as stairwells or hallways, it may be able to give people a clearer path to exits in the event of a fire. In addition, since the device can also be portable, firefighters could carry one into smoke-filled buildings to make it easier to find people who have been overcome. The device is also lightweight and may be of use in clearing smoke from airplanes and trains as well.

The University of Pittsburgh's FirstLink program, which has a contract with the Department of Defense to seek out new technology for first responders, is planning a series of tests and demonstrations to document the device's ability to clear smoke from the air.

Larry Dickens, from page 1

Larry Dickens of Oak Ridge National Laboratory presents during the FLC's Advanced Technology Transfer Training program in Minneapolis, Minn., May 1, 2006.

at-Large in 2001. He also served as Oak Ridge National Laboratory's Representative to the FLC from 1999 to 2005.

The recipient of the 2004 national Representative of the Year Award, he was twice recognized as Southeast Region Representative of the Year.

Larry was totally committed to the FLC's success. In the words of Ann Rydalch, Chair from 2001 to 2003, "I shall always be grateful to Larry for the help he gave me when I became Chair of the FLC in 2001. He was so kind and helpful, and wanted the FLC to achieve its full potential."

Recently, Larry had focused his considerable energies on technology transfer training. Lynn Murray, Education and Training Committee Chair, recalled that in Orlando last year during the first day of training, one of the key speakers for the advanced training session was not going to arrive on time. Larry, who had developed and prepared a presentation for the fundamentals training session, offered to fill in and, "with no time to worry and absolutely no time to practice, delivered an advanced licensing and negotiations course. He was a huge hit." For this year's national meeting, Larry put in an extraordinary amount of effort to develop and perfect the two presentations. "Again," said Murray, "he was an unqualified success and got rave reviews from the advanced training participants. He was funny, informative, and stimulated a lot of good discussion. As a teacher, he was gifted."

In his professional capacity, Larry was the Commercialization Manager for BWXT, the management and operating contractor for the Y-12 National Security Complex located in Oak Ridge, Tenn. Prior to the contract changeover in 2000, he was the director of Technology Licensing and CRADAs for Lockheed Martin Energy Research Corporation at ORNL.

Larry joined the ORNL Office of Technology Transfer in 1989 as a Licensing Executive and served in this capacity until May 1998. He personally negotiated more than 100 royalty-bearing licenses and CRADAs.

Larry also was elected to positions in local government. A member of the Oak Ridge City Council, he served as vice mayor from 1983 to 1987. He sat on the city's Health and Educational Facilities Board for six years and for five years as a board member for United Way of Anderson County. Elected to the Anderson County Commission in August 1998, he was in his second four-year term. In his honor, the flag at the Anderson County Courthouse was flown at half-staff the week of May 8.

A native of Oak Ridge, Larry attended North Carolina State University, where he graduated in 1973 with a B.S. in engineering operations. He also received an M.S. in business administration from Boston University in 1979. An Army veteran and Senior Army Aviator, he retired in 2001 from the Army Reserves as a Lieutenant Colonel.

Larry is survived by his wife, Dianne, and their two sons, Jody and John, both graduates of the U.S. Air Force Academy.

Friends may make memorial donations to the charity of their choice.

T² Community Storms Minneapolis

Gene Slowinski of Rutgers University passionately describes his thoughts on technology commercialization at FLC/TPWG 2006.

The rain and wind didn't stop the nearly 400 technology transfer (T²) professionals from converging on Minneapolis, Minn., May 1-4, 2006.

With three levels of training, numerous sessions covering a wide range of T² issues, and abundant networking activities, the 2006 FLC/TPWG national meeting, *From Innovation to Enterprise*, became a week-long headquarters for those in the technology commercialization business.

Kicking off the week were the FLC's Fundamental, Intermediate, and Advanced training sessions designed by Lynn Murray, Chair of the Education and Training Committee.

Ideal for newcomers to T², the fundamentals course provided a basic foundation in the background, concepts, and practical knowledge required to transfer federally funded technologies to the marketplace. Intermediate training featured and examined technology transfer partnerships, while the advanced session focused on the details of negotiating, patenting, and licensing.

Tuesday was highlighted by a dynamic presentaion on the state of T² in the world today given by Gene Slowinski, director of Rutgers University's Strategic Alliance Research at the Graduate School of Management. Other notable sessions included "Court Treatment of T² and Licensing Issues" by Richard Gilly of Fish and Richardson P.C.; "Technology Maturation," moderated by Brent Burdick of Sandia National Laboratories; and

See FLC National Meeting, page 8

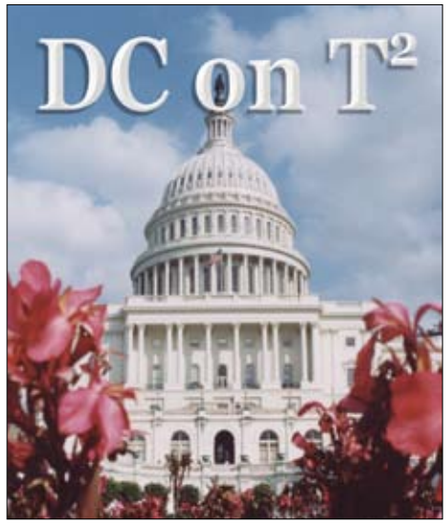
DC on T², from page 1

in a relative sense, the landscape is shifting. European nations, the EU region generally, and Japan are all losing ground as the U.S. holds its position across various measures. China, and to a lesser degree other Asian nations, is the winner in this global shift of relative S&T strength. Eastern Europe, central Asia, the Middle East, Latin America and Africa are also "slowly and selectively entering the international S&T scene," but are not yet major players.

So says the National Science Foundation's recently issued biennial report, "Science and Engineering Indicators - 2006." This report includes data on multiple indicators associated with S&T efforts in the U.S. and across the globe and consistently delivers one of the most comprehensive assessments of the "state of the U.S. R&D enterprise" available. It is a useful tool for researchers and policy makers alike. While too many to note in this column, a few of the more salient U.S. characteristics are highlighted below. I strongly encourage you to read the full report.

Total U.S. R&D expenditures more than doubled between 1990 and 2004 (to over $300 billion), reflecting an approximately 55 percent increase. Industry's share of total R&D support, however, has declined slightly (from 70 percent in 2000 to 64 percent in 2004) as federal R&D investment increased, particularly in the security area. Academic R&D expenditures in the U.S. reached $40 billion in 2003 (latest data), with the federal government supporting 62 percent of those activities, up from 59 percent in 1990.

The U.S. R&D labor force has also realized significant changes over the last decade and a half. Over 4.6 million people worked in science and engineering (S&E) positions in the U.S. in 2003, up from 3.3 million only a decade earlier. The number of foreign-born workers holding U.S. S&E positions rose to 22 percent by 2000. By 2003, foreign students earned one-third of U.S. S&E doctorates and over half of engineering doctorates. Many of these students choose to remain in the U.S. to pursue employment. "However, increasing international competition for foreign students raises questions about the continued viability of these high rates."



The report identifies three factors affecting the "size of the U.S. S&E labor force that is available to compete for and create high-quality jobs in the worldwide knowledge economy: (1) retirements, because the number of individuals with S&E degrees who are reaching traditional retirement ages is expected to triple; (2) S&E degree production, because current trends will sustain growth but at a lower rate than before; and (3) potentially diminished U.S. success in the increasing international competition for foreign scientists and engineers, because many countries are actively reducing barriers to high-skilled immigrants while entry into the United States has become somewhat more difficult."

Globally, the U.S. still compares favorably in many categories but, as noted, the landscape is changing. Global R&D spending is (likely under) estimated by the Organization for Economic Cooperation and Development (OECD) to have risen from about $377 billion in 1990 to over $810 billion by 2003 – the more telling statistic being that the OECD's share dropped from 93 percent to 84 percent (reflecting a move from the developed to the developing world). The U.S. still holds a lead in absolute R&D spending, but at just under 40 percent of the total, this relative percentage has declined over the past decade.

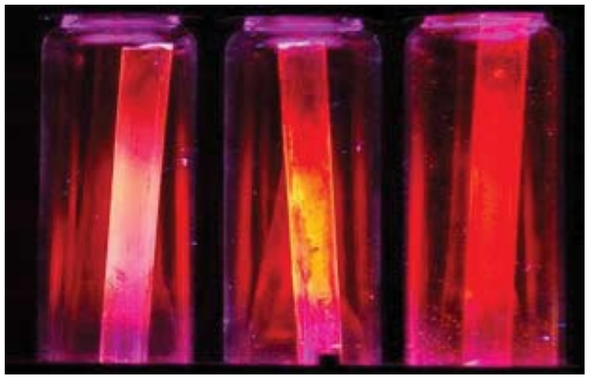
A companion piece devoted to S&T education alone, "America's Pressing Challenge – Building a Stronger Foundation," highlights specific educational challenges the U.S. faces in maintaining its technological leadership. According to one study, "[Among OECD] nations participating in a recent assessment of how well 15-year-old students can use mathematics and science knowledge, U.S. students were at or near the bottom of the 29 OECD members participating." Other highlighted studies bear similar results.

The data presented in this latest report provide a quantitative basis for current discussions on general U.S. S&T investment, and comparative strength and potential policy implications. This is a must-read for those involved in that debate.

The "Science and Engineering Indicators 2006" report can be found at <www.nsf.gov/statistics/seind06>, and the companion piece, "America's Pressing Challenge – Building a Stronger Foundation," can be found at <www.nsf.gov/statistics/nsb0602>.

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

SSC San Diego Sheds Light on Energy Savings



Silicon nanocrystals in solution ink

Well over 80% of today's lighting fixtures utilize fluorescent light tubes and incandescent technologies (standard light bulbs) that have energy efficiencies of approximately 20% and 5%, respectively.

With these inefficiencies, the United States spends approximately $40 billion per year on lighting, about 25% of the nation's total electricity consumption.

Dr. Stephen Russell and colleagues at Space and Naval Warfare Center San Diego (SSC San Diego) and the University of California at San Diego patented a novel method for fabricating light-emitting silicon nanostructures on an insulating transparent substrate that may prove the enabling technology for an alternative light source for general illumination. In its bulk form, silicon does not emit light; however, it does emit visible light very efficiently when formed into nanocrystals that are on the order of nanometers in size (one nanometer = one billionth of a meter).

The Department of the Navy signed an exclusive license with Innovalight, Inc. of St. Paul, Minn., a venture-funded technology startup focused on silicon nanostructures.

The company is currently developing products for billion-dollar market applications harnessing the powerful capabilities of silicon nanotechnology.

One strategy being pursued by Innovalight is the manufacture and sale of scalable flat lighting panels that can be integrated into multiple applications ranging from cell phones, computer displays, and flat-panel TVs, and also for general illumination in residential and commercial locations.

Ultimately, Innovalight plans to market and sell a complete lighting tile, which can be incorporated into a ceiling much like regular ceiling tiles installed today.

In addition, it has developed early material samples that have been tested and verified independently, and show the promise of commercialization.

The promise of a light source based on Navy patented technology currently being commercialized by Innovalight, if adopted worldwide, would cut global electricity consumption by 13%, along with a 2% drop in the carbon emissions generated by making it.

Lab Classifieds | *Available Technologies, Facilities, and Partners*

SRL's RadRope™

Researchers at Savannah River National Laboratory (SRL) have developed a lightweight, portable system that rapidly detects the presence of nuclear materials in sealed containers without using harmful x-rays.

The RadRope system can be used in a straight line, a curved line, or at an angle, and the length of the system can be easily customized for a variety of different uses.

More info: Dale K. Haas, Savannah River National Laboratory, Westinghouse Savannah River Company, 803-725-4185, dale.haas@srnl.doe.gov

Livermore Seeks Partner for Communication

Lawrence Livermore National Laboratory (LLNL), operated by the University of California under contract with the Department of Energy (DOE), is seeking one or more industrial partners to help further develop LLNL's ultra wide band (UWB) radar communication systems for military and government applications.

This UWB transceiver provides through-the-wall communications capability in heavy metallic and heavy concrete indoor channels.

LLNL researchers have invented and developed a state-of-the-art UWB communications system based on the transmitted reference technique.

LLNL is seeking industrial partners with a demonstrated ability to develop and mature early-stage technology for military and government use.

More info: http://www-eng.llnl.gov/uwb_comm/uwb_comm.html

LBNL's Ergonomic Arm

The Berkeley Ergonomic Arm of Lawrence Berkeley National Laboratory (LBNL) is a practical ergonomic intervention and support system to improve productivity and reduce workplace ergonomic-related injuries.

The Berkeley Ergonomic Arm dynamically enhances musculoskeletal support and comfort during sitting tasks at the computer or standing at a benchtop or manufacturing station. The aim is to reduce the likelihood of cumulative trauma injuries to the upper extremities.

This is a ground-floor opportunity with enormous upside market growth potential. LBNL is seeking a qualified partner(s) to work in a Phase III collaborative effort to refine and commercialize the new Berkeley Ergonomic Arm.

More info: Chris Kniel, Technology Transfer Department, crkniel@lbl.gov, 510-486-5566

ORNL for Oil

The oil drilling industry has the need for a simple, reliable means of initiating the set of set-retarded annular concrete surrounding the well casing.

Researchers from Oak Ridge National Laboratory (ORNL) have developed a method for fulfilling this need. To accomplish this, oil field set retarders are mixed with another organic containing a specially chosen, thermally stable peroxide and a chelated transition metal such as iron.

ORNL seeks licensees of this technology to exploit commercial applications and opportunities.

More info: 865-574-2577

NREL Cooks Up Tech

Inventors Steven D. Burch, David K. Benson, and Thomas F. Potter of the National Renewable Energy Laboratory (NREL) have developed a cooking utensil with improved heat retention that includes an inner pot received within an outer pot and separated in a closely spaced-apart relationship to form a volume or chamber between.

The chamber is evacuated and sealed with foil leaves at the upper edges of the inner and outer pots.

The vacuum created between the inner and outer pots, along with the minimum of thermal contact between the inner and outer pots, and the reduced radiative heat transfer due to low emissivity coatings on the inner and outer pots, provide for a highly insulated cooking utensil.

Interested organizations may consider developing and/or commercializing this technology through a license agreement, CRADA, or Work for Others agreement.

More info: Richard Bolin, 303-275-3028

PNNL's Starlight

In today's fast-paced, information overload world, you have access to literally thousands of reams of paper, electronic and digital data, maps, video, even satellite imagery. Just how do you make sense of it all?

Starlight™, a software tool developed at Pacific Northwest National Laboratory (PNNL), allows you to sift through the blizzard of information to discover hidden trends and relationships.

Starlight™ is an interactive, investigative tool that you can use to characterize data, find and retrieve subsets of interest, and understand complex relationships.

More info: http://availabletechnologies.pnl.gov

ARS Genomics

Agricultural Research Service researchers have developed a computer tool to help research scientists visualize relationships between and among data. The technology uses existing relational databases and provides a means to selectively visualize data clusters to reveal degrees of relatedness between the clusters based on their assigned attributes. Rather than develop singular questions to query a relational database, the display produces a global view of data sets.

This tool will help biotechnology companies view data relating to gene expression in a different way, and may provide another approach toward gene mining.

More info: Gerard R. Lazo, 510-559-5640, lazo@pw.usda.gov

LANL Coating

Researchers from Los Alamos National Laboratory (LANL) have developed a method for coating magnetic nanoparticles with a very thin layer of gold. Because many biological markers and linkers have been adapted to attach to gold surfaces, a functional coating of gold allows nanoparticles of other materials to be used with the established markers and linkers. Magnetic nanoparticles are of particular interest for in vivo imaging and treatment operations.

Applications include image enhancement in magnetic-based diagnostics and cancer imaging and treatment

The advantages of this method include avoiding direct contact between biological tissue and the core nanoparticle material; permitting of a wide range of magnetic materials to be used in biological tissue; and being a simple, rapid, and relatively inexpensive chemical process

More info: John Mott, 505-665-0883, jmott@lanl.gov

FLC National Meeting, from page 5

"How to Read and Write a Business Plan" by Scott Lush of Defense Commercialization Inc.

On Wednesday, the event's keynote session was presented by Dean Kamen of DEKA Research & Development Corporation. An inventor, entrepreneur and tireless advocate for science and technology, Dean captured the audience while describing his process for developing internally generated inventions, as well as providing R&D functions for major corporate clients. He holds more than 200 U.S. and foreign patents for innovative devices that have expanded the frontiers of health care worldwide; and some of his notable inventions include the first wearable insulin pump for diabetics, the HomeChoice™ portable peritoneal dialysis machine, the IBOT™ Mobility System, and the Segway® Human Transporter.

Attendees at the awards poster session enjoy a laugh during a visit to the USDA exhibit.

Mr. Kamen also explained with great passion his "FIRST" program for instilling the joy of invention in the hearts of the world's youth. He stressed that "we must teach our children the power of invention" so that they understand that it is just as fulfilling as becoming a sports or rock star and more likely to occur with hard work and passion.

On Wednesday evening, meeting attendees climbed to 30th floor of a Minneapolis skyrise to enjoy the view from Windows on Minnesota while they honored the winners of the 2006 FLC Awards for Excellence in Technology Transfer. Hosted by Vic Chavez of Sandia National Laboratories and local radio and television personality Michele Jansen, 33 awards were given for long-time service, commercialization excellence, and industry dedication to the field of technology transfer.

Wrapping up the week was the "War on Terrorism Needs Forum" moderated by Clark McCauley of the National Consortium for the Study of Terrorism and Response to Terrorism; and "Marketing Laboratory Intellectual Property," moderated by Bonnie Harbinger of the National Institutes of Health.

Another notable event included the inaugural Tech Fair, which was combined with the awards poster session to provide an excellent opportunity for attendees to see all that the federal laboratory system has to offer.

Planning for the 2007 FLC national meeting has already begun. Visit the FLC website at <www.federallabs.org> for meeting updates.

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