Los Alamos NATIONAL LABORATORY EST. 1943

NewsLetter

Week of Feb. 27, 2006

Vol. 7, No. 5

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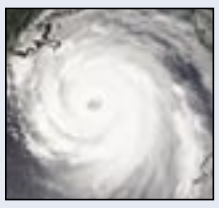

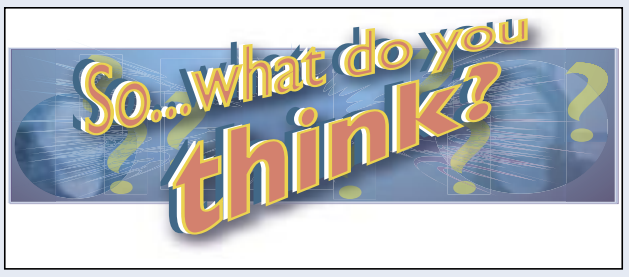

Do you ever attend talks or colloquia at the Lab? If yes, what kind and why? If no, why not? Learn what your co-workers had to say on Page 6.

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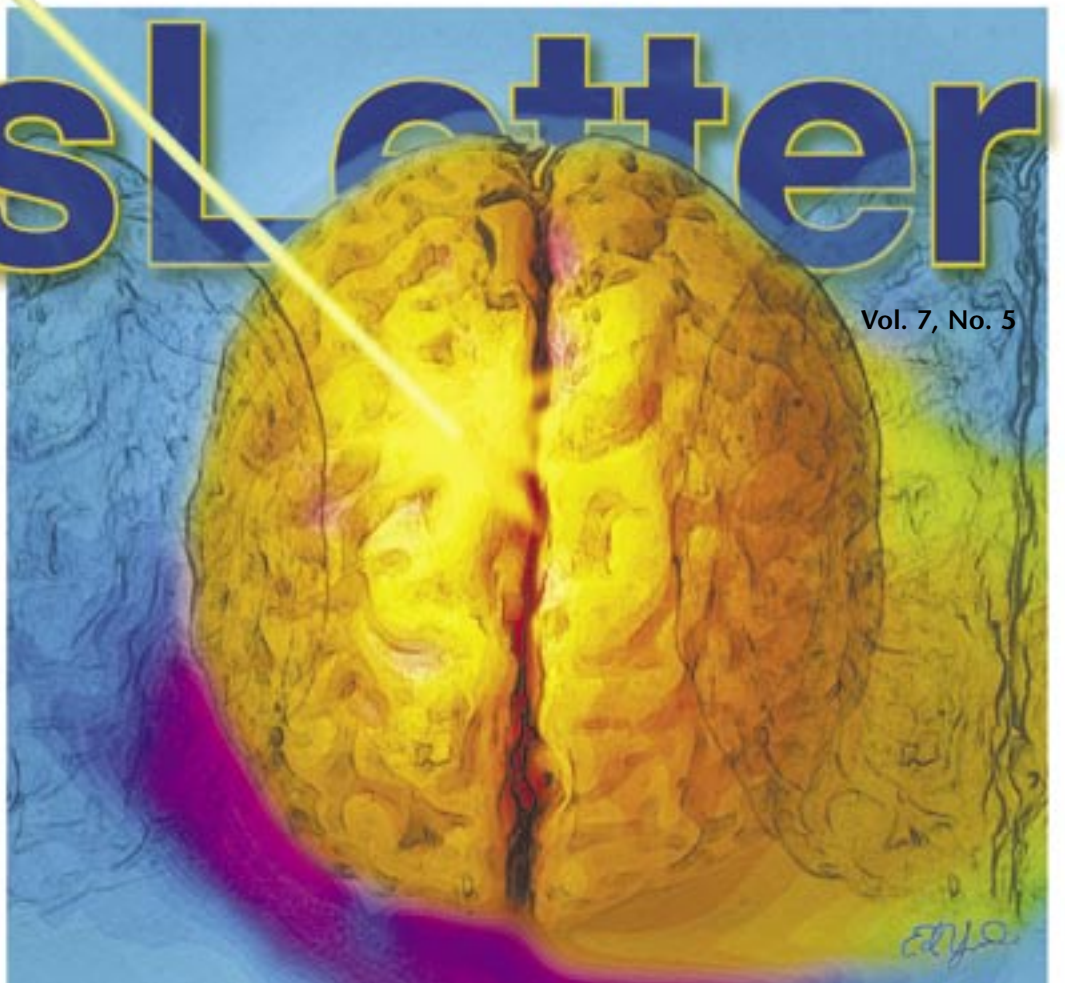
LALP-06-001



The little beam that could:

Laser-driven ion beams offer multiple uses

by Todd Hanson

Scientists at the Laboratory, in collaboration with researchers from the University of Nevada, Reno; Ludwig-Maximilian-University in Germany; and the Max-Planck-Institute for Quantum Optics in Germany, have developed a new method for using a laser beam to accelerate ions. The novel method may enable important advances in compact ion accelerators, medical physics and inertial confinement fusion.

In a paper published in a recent issue of the scientific journal Nature, a team led by Manuel Hegelich of Plasma Physics (P-24) describe their method for the laser acceleration of a monoenergetic ion beam. The carbon ion beam researchers created using the Trident laser facility at Los Alamos had an energy level of 3 megaelectron-volt (MeV) per nucleon, or 36 MeV.

Scientists have known about laser-driven ion beams with energies in the MeV range for several years, but the Los Alamos team's experiment was the first to establish the basis for laser-driven acceleration of monoenergetic ion beams using specifically designed and treated targets. While the energy spread of laser-driven ion beams is still substantially larger than in conventional accelerators, in several respects they surpass conventional beams.

According to Hegelich, "Typically you need a very large accelerator, the kind that only fits in a research hall and that accelerates particles over distances of around a hundred meters, to accelerate an ion beam to the energies reported in our paper. Even then, the resulting ion pulses are longer and have weaker currents (milli- or even microamps versus kiloamps). Because conventional accelerators currently are pushing the limits in size and cost, laser acceleration is a potential solution to these challenges. The laser-driven ion accelerator we've developed fits in a typical-sized laboratory and accelerates ions over a distance of roughly 10 microns."

Because of its compact device size and unique beam characteristics, laser-accelerated ions have potential in the treatment of certain types of brain tumors, in lieu of conventional X-rays or protons. German medical researchers already have developed methods for using carbon ions to place almost all of the beam's energy in a tumor. Conventional tumor treatment methods typically deposit large amounts of radiation in the tumor as well as in surrounding healthy tissue. Producing the ion beams, however, has required large accelerator devices in the several hundred million-dollar range. The laser acceleration method has the potential to shrink both the size and cost of the required accelerator devices.

Laser acceleration also shows potential for use as a "sparkplug" in inertial confinement fusion. In conventional ICF, a fusion fuel is simultaneously compressed and heated by a laser driver until it reaches in its core the conditions needed for ignition. In an ICF concept called "fast ignition," the compression and ignition parts are separate and the long-pulse laser is first used to compress the fuel. Then, at the moment of maximum compression, the laser-driven ion beam is used as a "sparkplug" to ignite fusion. With very short pulse durations, laser-produced ions might possess the energy needed to ignite fusion at maximum compression.

For Your Safety

Put stress in its place

Stress doesn't have to be a bad thing. A certain amount of stress is necessary to motivate us to do things for ourselves, our families and our jobs.

We all handle stress differently. One person may thrive on pressure that another person would find too much. Each needs to find the optimum level of stress for himself and try to maintain that balance.

The physical symptoms of stress are actually body changes to help you deal with immediate physical danger by fighting or running away. These include

- Increased heart rate, which increases blood flow to the brain and major muscles.
- Eyesight improves as the pupils of the eye become dilated and hearing also becomes more acute.
- The liver releases sugar for energy.
- Perspiration increases to cool the body.

When the danger is over, the body quickly returns to normal. In modern life, however, stress is usually related to long-term situations. The continuing tension from a chronic sense of danger leads to health problems, including headaches, upset stomach, insomnia, ulcers, high blood pressure, heart disease and stroke.

Just as uncomfortable as the physical results of stress are the mental and emotional effects: anxiety, depression and an inability to think clearly or even to enjoy life.

The first step in stress management is to take better care of yourself. Do not underestimate the value of a balanced, nutritious diet. Junk food might give you a quick lift, but will make you feel worse in the long run. The same goes for excessive use of alcohol, tobacco and caffeine.

People with busy lives are usually operating on too little sleep. Getting seven to nine hours of sleep most nights will help you cope.

Regular exercise is one of the best tools for fighting stress. It gives an outlet for the body's "fight or flight" stress reactions.

Say no to unnecessary and unwanted commitments. Save energy for the things that really matter in life. As the saying goes, too much yes can lead to stress.

While many stressful situations can't be avoided, they can be dealt with calmly. Practice on the little stressors and you will be ready to handle the big ones.

Los Alamos NewsLetter

The *Los Alamos NewsLetter*, the Laboratory bi-weekly publication for employees and retirees, is published by the Public Affairs Office in the Communications and External Relations (CER) Division. The staff is located at 135 B Central Park Square and can be reached by e-mail at *newsbulletin@lanl.gov*, by fax at 5-5552, by regular Lab mail at Mail Stop C177 or by calling the individual telephone numbers listed below. For change of address, call 7-3565. To adjust the number of copies received, call the mailroom at 7-4166.

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Los Alamos National Laboratory is operated by the University of California for the National Nuclear Security Administration (NNSA) of the U.S. Department of Energy and works in partnership with NNSA's Sandia and Lawrence Livermore national laboratories to support NNSA in its mission.

Los Alamos enhances global security by ensuring safety and confidence in the U.S. nuclear stockpile, developing technologies to reduce threats from weapons of mass destruction and improving the environmental and nuclear materials legacy of the Cold War. Los Alamos' capabilities assist the nation in addressing energy, environment, infrastructure and biological security problems.

NNSA National Nuclear Security Administration

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Los Alamos National Security, LLC President and Laboratory director-designate Michael Anastasio visits with Laboratory Fellow Stirling Colgate, right, of Theoretical Astrophysics (T-6) as Laboratory Director Bob Kuckuck, left, reviews his notes before an all-employee meeting in the Administration Building Auditorium at Technical Area 3.

Anastasio presents first in a series of talks

Los Alamos National Security, LLC President and Laboratory director-designate Michael Anastasio discussed his vision of science and technology for the Laboratory at an all-employee talk in the Administration Building Auditorium. He told employees that "science and technology must thrive and will thrive at the Lab in the future." He also said employees are the Lab's most important asset and that safety is the personal responsibility for all workers.

The talk is one of several transition-related all-employee meetings Anastasio plans to hold with the work force. He also has scheduled all-employee meetings March 9 to talk about his vision for the Lab's organizational structure, March 30 to discuss operations and business issues and April 13 to talk about weapons integration, work for others and new initiatives.

Anastasio also will hold additional all-hands meetings in May and early June, sharing additional details and framing what he sees as a "great future for the Laboratory."

For more information about LANS, go to the LANS Web site at *http://www.lansllc.com/*. Employees also can ask questions via the LANS online suggestion box at *http://www.lansllc.com/suggestions.html* online or send them directly to *info@lansllc.com* by e-mail.

For more information on the Laboratory transition, go to the Transition Web site at *http://transition.lanl.gov* online.

Employees learn about proposed total compensation package

Tyler Przyblek, center, of the National Nuclear Security Administration talks with Ben Glover of Bechtel National, and Roberto Archuleta, right of the Department of Energy's Albuquerque Service Center before a Feb. 16 meeting in the Administration Building Auditorium, where the Los Alamos National Security, LLC proposed total compensation package was presented. The National Nuclear Security Administration hosted four poster board meetings for active employees and retirees to provide input. Active employees as well as retirees are urged to check the Laboratory's Transition Web page frequently for information related to the transition. To access the Web site from inside the Lab, go to http://transition-int.lanl.gov/***; external access is available at*** http://transition.lanl.gov/ ***online.***

Photo by James E. Rickman

Integrated work management

by Tom Bowles, chief science officer

The Laboratory has adopted Integrated Work Management as the means for ensuring safe operations at the Laboratory. The goal of IWM — to ensure that none of our employees are injured — is certainly correct. And I believe the primary principle of IWM is correct, namely to take a wide view of the safety envelope in how we do work. In my own research with ultra-cold neutrons, we tested a superthermal UCN source that uses 2 liters of solid deuterium at 5 degrees Kelvin in a room next to a welding shop. IWM requires that you look at how your work integrates into the wider environment around you. Under this principle, we worked to coordinate our activities with the welding shop's to ensure [the safety of] both parties, thus avoiding the possibility of welding if we were venting deuterium.

In principle, while this is fine, what I have described is the spherical cow approximation to the real situation. The issue with IWM is not the principles; it is how we implement it. In order to make IWM effective, it is critical that staff engage in the process. While we are moving from an expert-based to a procedure-based approach to safety, no system can succeed without people thinking about what they are doing. That includes designing the process and documentation that goes along with the work.

As far as I can tell, implementation of IWM is not uniform across the Lab. I hear that IWM is working okay, and I also hear that it is significantly impacting getting work done without improving safety. Since LANS [Los Alamos National Security, LLC] certainly will be working to make safety more effective, this is a good time to gather input on your perspective of IWM. I would like to ask you to send me your comments on IWM — what works, what doesn't and how it could be improved. I will summarize the input and let you and LANS know what I receive. This is your chance to provide input on IWM. If you want to see it improved, send your comments to *cso@lanl.gov*.

Cartoon by Josh Smith of the Chemistry (C) Division

Strategy meeting focuses on issues facing nations weapon labs

by Paul C. White, acting director, Office of National Security Planning and Analysis

Laboratory Director Bob Kuckuck and other Laboratory managers met in Washington earlier this month with Linton Brooks, National Nuclear Security Administration chief and leaders from the University of California, Lawrence Livermore National Laboratory and Sandia National Laboratories. The objective of the meeting was to agree on a common understanding of the issues facing the nation's three weapons laboratories, to discuss strategy and plans for this fiscal year, and to identify follow-up actions.

Representatives from NNSA site offices (Los Alamos, Sandia, Livermore) also took part in this meeting.

In the past, a strategic planning meeting was held as part of the Appendix F process as it related to the joint measures owned by Los Alamos and Lawrence Livermore labs. At Linton Brooks' suggestion, the strategy meeting this year included all three weapons laboratories.

The future configuration of the weapons complex for the 21st century was a focus of much of the discussion, including its relationship to stockpile stewardship, greater integration among labs/plants, and the Reliable Replacement Warhead, which is intended in part to facilitate the transition to a more responsive infrastructure.

It was agreed that the unique nature of the weapons laboratories provides a synergy with non-weapons work done for the Department of Energy and Work for Others that is very important to recognize and promote. Department of Homeland Security long-term investment at the labs also needs to be encouraged.

The reduced weapons budget for this year and the funding projections for the out years were highlighted as a significant concern. Impacts of the budget reductions on the laboratories and their deliverables will be communicated by NNSA to Congress. Funding requirements need to be made clear as NNSA transforms the nuclear weapons complex into a more responsive element of the nation's defense infrastructure.

It was agreed by all parties that the meeting was important in focusing the efforts of the three weapons labs, their site offices, and NNSA headquarters and should be repeated early in the next fiscal year. This meeting will be followed up this year with lab-specific meetings focusing on performance.

Museum takes science to the community

Above: Gordon McDonough of the Bradbury Science Museum, center, demonstrates the effects of gravity and inertia on an object for Aspen Elementary School fifth-grade students at a science-outreach program at the University of New Mexico Los Alamos campus. McDonough was joined by Liz Martineau of the museum and Dave Schwellenbach of Bechtel Corp. Approximately 50 students attended the program, which also included demonstrations on light, building a balloon fuse, building circuits and static electricity. Science outreach is a regular program of the museum and includes the Science on Wheels program.

Left: Aspen Elementary School students Marie Louise Schmidt, left, and Samantha Tedder try out a science experiment demonstrating the effects of gravity and inertia on an object using a toy dump truck and steel nuts to test how much weight is needed to pull the toy truck off the end of a lab bench. *Photos by Ed Vigil*

Los Alamos Transition Project information

Editor's Note: Rich Marquez, leader of the Transition Team, writes a weekly column on the transition project that is posted to the Transition Web site at transition.lanl.gov. Following are his last two messages.

Picking up the pace

Feb. 15 — The pace of the transition process is picking up as Los Alamos National Security, LLC interfaces with more people at the Laboratory. That means the volume and sources of communication are increasing as well. Communication is essential, but experience from other contract transitions indicates that the inevitable uneven distribution of information can create more questions than answers.

Notional schedule

In our ongoing efforts to provide information that will help you understand the transition process, where we are in the process and what is coming up, we are adding to the Web page a notional schedule of the major activities the Laboratory Transition Team is undertaking to support LANS as it gears up to assume leadership in June. We're using our Zipper Plan, which is integrated with the LANS Responsibility Assignment Matrix, to facilitate a consistent communication approach. (See the black arrow at the top of the notional schedule.) The schedule complements the timeline that was added last week and reflected the three phases of the LANS transition: people, places and processes.

This notional schedule captures the Laboratory activities that support key milestones in the LANS transition plan. If you click on the link to the graphic, you'll notice that milestones are represented by green diamonds and Laboratory supporting activities are shown in the square balloons to the left of the diamonds.

People

Looking at the schedule, you can see that LANS is in the middle of mapping University of California/Laboratory employees into the new organization so that they can send out offer letters by March 15. In addition, a series of "sign-up" sessions will be held for employees with questions about their LANS offers.

The biggest focus this week will be the National Nuclear Security Administration's meetings regarding the proposed LANS total compensation package. We are providing logistical and communications support to these meetings, where employees and retirees will be briefed on the TCP proposed by LANS. NNSA will accept comments on the "substantial equivalence" of the proposed package via index cards or e-mail to *inputonlansbenefits@doeal.gov*. The proposed benefits package has been posted on the NNSA Los Alamos Site Office Web site online.

Places

Many [Laboratory] organizations will support the facility walk-downs that will occur the last week of March and the first part of April. We will be working with LANS to assure that the walk-downs will not interfere with our major mission and operational commitments.

In succeeding weeks, we'll be talking more about this part of the schedule. It is important to reiterate that employees can and should stop work or notify their supervisors if they feel that any activity — whether directly related to the transition or related to regular operations — is unsafe or being conducted in an unsafe manner. Maintaining the safety of the work force throughout the transition period is paramount and has precedence over any transition activity.

Processes

While the "Processes" phase of transition comes later, we are focusing on systems that will enable a seamless transition come June 1. The bottom part of the notional schedule captures one of the most critical elements of transition that is often forgotten: the transition of our information systems, including payroll and human resources. Many of our information management and computer systems staff are hard at work, planning ahead and anticipating potential glitches that could occur so that the processes on which we depend upon for items such as payroll will continue to function smoothly.

As always, your feedback and questions are welcomed so that we can continue to improve this web page. Your concerns and suggestions are helping all of us navigate this transition safely and without undue stress.

Only 99 transition days left

Feb. 22 — The first significant milestone associated with [the Laboratory's] contract transition is here. That is the proposal of a benefits plan that is substantially equivalent to the extant University of California Retirement Plan benefits package.

Benefits meetings, schedule

The National Nuclear Security Administration [hosted] a series of employee and retiree meetings to solicit comments on whether the benefits plan submitted by Los Alamos National Security, LLC, is, in fact, substantially equivalent. The benefits schedule (available at *http://transition.lanl.gov/docs/BenefitsTimeline.pdf* online) contemplates a formal Department of Energy/NNSA position and Contracting Officer decision to be delivered to LANS by March 7. [Employees had until Feb. 24 to send comments on the total compensation benefits package proposal to NNSA.]

LANS meetings

Let me address one of the more prevalent concerns I have heard expressed other than on the topic of the benefits plan. This concern has to do with the perceived uneven distribution of information regarding mapping and the LANS organization. Let me remind you that LANS-designated Director Mike Anastasio will hold an all-employee meeting on the subject of organization on March 9. By then, he and his management team will have reached pretty-close-to-final agreement on how to crosswalk the current work force and the current organization to the new paradigm.

Until then, nothing is a final determination. Not everyone or every organizational box corresponds one-for-one to the new structure, so in these circumstances, more conversations are occurring and most likely may be generating the greatest anxiety. However, we are working diligently with LANS to make sure no one and no organizational element "slips through the cracks."

In the near future, Tom Gioconda, LANS transition manager, will join me for several briefings on the topic of condition assessment and facility walk-downs, which is at the core of the Places Phase of [the] LANS transition. We will be doing cascading briefs to the Executive Board, the Responsible Division Leader Council and the All Managers Meeting. This is a very critical phase and represents a significant percentage of the overall LANS transition project activities.

I have received many good suggestions or comments via e-mail and I thank those of you who have made positive and constructive suggestions. Only 99 transition days left!

On-line resources for information about the Laboratory's contract transition

TRANSITION — *transition.lanl.gov*

LOS ALAMOS National Security LLC — *lansllc.com/index.html*

LOS ALAMOS SITE OFFICE — *www.doeal.gov/LASO*

Patent awards

Editor's note: Some of the individuals listed below are no longer employed at the Laboratory but were at the time they applied for the patent.

Recently issued patent awards

Superconducting structure
Patent No. 6,943,136, issued Sept. 13
Chuhee Kwon, **Quanxi Jia** and **Stephen Foltyn** of the Superconductivity Technology Center (MST-STC)

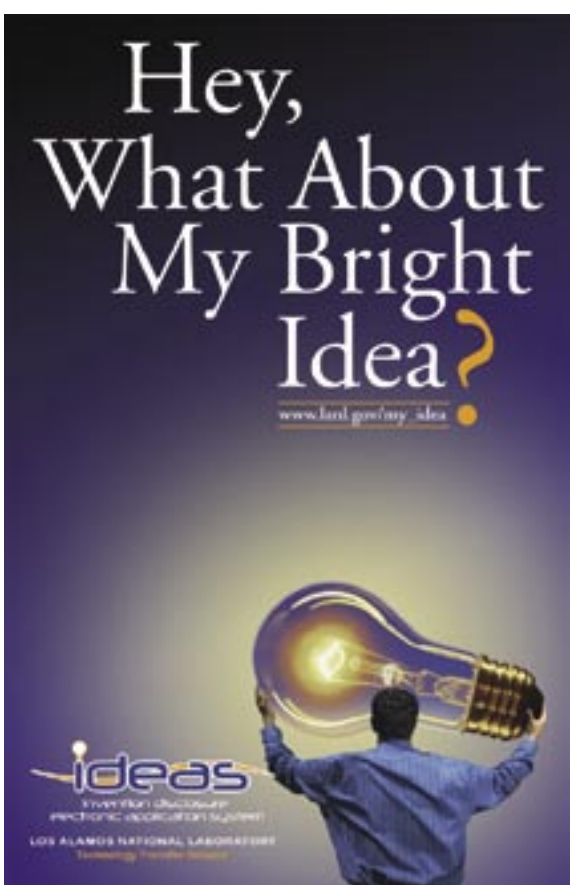
Cross-linked polybenzimidazole membrane for gas separation
Patent No. 6,946,015, issued Sept. 20
Betty Jorgensen, **Jennifer Young** and **Brent Espinoza** of Polymers and Coatings (MST-7)

Meniscus membranes for separation
Patent 6,946,019, issued Sept. 20
Robert Dye, **Betty Jorgensen** and **David Pesiri** of Polymers and Coatings (MST-7)

Apparatus and method for handheld sampling
Patent 6,947,866, issued Sept. 20
Torsten Staab of Applied Engineering Technologies (ESA-AET)

Microporous crystals and synthesis schemes
Patent 6,949,238, issued Sept. 27
William Tumas, **Kevin Ott** and **Thomas McCleskey** of Actinide, Catalysis and Separations Chemistry (C-SIC); and **Eva Birnbaum** of Isotope and Nuclear Chemistry (C-INC)

Sample desorption/ionization from mesoporous silica
Patent 6,958,480, issued Oct. 25
Srinivas Iyer of Cell Biology, Structural Biology and Flow Cytometry (B-2) and **Andrew Dattelbaum** of the Center for Integrated Nanotechnologies (MST-CINT)



New gallium nitride film method beats the heat

by Todd Hanson

A team of Laboratory scientists have developed a method for growing crystalline gallium nitride films at lower temperatures than industry standards. By eliminating the higher temperatures and harsh, reactive environments that currently limit the types of materials used as substrates, the discovery could greatly increase the use of crystalline gallium nitride films in optical-electronic devices, like blue LEDs and laser diodes, high-density optical data storage devices, flat panel displays and solid state lighting.

In research published recently in Applied Physics Letters, the team describes their use of energetic neutral atom-beam lithography/epitaxy to grow crystalline and polycrystalline gallium nitride films on bare c-axis-oriented sapphire at temperatures between 100 and 500 degrees Celsius using low kinetic energy nitrogen atoms and a simultaneous flux of gallium metal.

Energetic neutral atom-beam lithography/epitaxy, or ENABLE, is a Los Alamos system that produces a beam of neutral atoms with low kinetic energies that can be used for various kinds of specialized surface chemistry at near room temperatures, often producing results that are unattainable using other techniques. Epitaxy is the process of growing one crystal layer of a material of another crystalline substance.

According to Mark Hoffbauer of Advanced Chemical Diagnostics and Instrumentation (C-ADI), principal investigator for the GaN ENABLE project, "The beauty of using ENABLE for growing crystalline gallium nitride films is that normally the process requires substrate temperatures of 900 to 1,100 degrees Celsius and extremely harsh, reactive environments. Those conditions eliminate a lot of useful materials as substrates because they would melt or be degraded at the higher temperatures. Our lower temperature technique has the potential to allow gallium nitride films to be grown on many more types of inexpensive substrate materials, including glass and certain polymers."

Another researcher on the team, Alex Mueller of C-ADI adds, "The low temperatures employed by ENABLE allow for the incorporation of electronic and magnetic dopants into the films while simultaneously avoiding phase segregation and clustering problems that are limiting the widespread use of these materials in other applications. The fact that there are no impurities inherent in the ENABLE process make defect and impurity-free films possible, thereby simplifying device fabrication."

The research is supported by Laboratory-Directed Research and Development funding.

Editor's note: The following is from a University of California news release. To read the entire release, go to http://ucnewswire.org/news_viewer.cfm?story_PK=5585&CFID=3571&CFTOKEN=1412FAD5-D57A-D1C9-D7E28370BDF6A424 online.

UC Television available on Google Video

More than 1,000 hours of University of California Television programming is now available to be downloaded and viewed for free on the Google Video service.

UCTV brings to Google Video its largest collection of educational video content, with UCTV programs from the 10-campus University of California system in subjects such as public affairs, science, health and medicine, humanities and the arts.

The UCTV video collection is unique in its scope, featuring interviews, lectures, documentaries, musical performances, and more, with guests that range from scientists and CEOs to poets and artists.

UCTV is available nationwide on Dish Network satellite, cable and online, and its presence on the Google Video search engine will greatly expand UCTV's reach to millions more Web users worldwide.

"We are so pleased to have forged this partnership with Google Video and look forward to making our programming accessible to its many users," said UCTV's director Lynn Burnstan. "Finding reliable, accurate content on the Internet is so important today, and we know UCTV's content will meet this need for Google Video's users."

Google Video (*http://video.google.com*) is the world's first open online video marketplace, where users can search for, watch and even buy an ever-growing collection of TV shows, movies, music videos, documentaries, personal productions and more.

UCTV is a 24-hour satellite channel that broadcasts the best in educational and enrichment programming from the University of California's 10 campuses, three national laboratories UC manages for the federal government, and affiliated institutions of the university.

UCTV is available to more than 16 million households nationwide via:

- Direct Broadcast Satellite: Nationwide 24 hours a day, Dish Network channel 9412
- Internet: Live Webcast, "video-on-demand" archives, audio and video podcasts at *www.uctv.tv* online.
- Cable TV: Community cable channels in California and across the country (go to *www.uctv.tv/cable* online for details).

Q: Do you ever attend talks or colloquia at the Lab? If yes, what kind and why? If no, why not?

Jeremy Vonharders of HR Service Center (HR-SC)

I've never been to any, but most of them seem very interesting. I don't have a security clearance, so I can't go behind the fence. But those that I can watch I do watch on LABNET.

Kermit Short of Departmental Computing (CCN-1)

I have seen several colloquia that looked fascinating, but time constraints don't always allow me the time to attend. I have gone to a few related to my work at the Lab, and I have found them to be very helpful.

Leonid Gurvits of Modeling, Algorithms and Informatics (CCS-3)

I do attend. The first reason is the fame of the presenter. Second, I read the abstract, and I might see some interesting points. And third, I know their work, and [if] I know it is wrong, I want to express my opinion. If the talk is interesting I usually attend.

Hilary Abhold of Scientific Software Engineering (CCN-12)

No, because I tend to take [professional development] classes instead of going to talks.

Alex Zubelewicz of Protocol (CER-1)

I usually set up the meetings, but I don't attend them. I also setup LABNET in the Study Center where I am able to watch along with other Lab employees those talks that are broadcast.

Suzanne Moss of the HR Service Center (HR-SC)

I don't. I wish I could, but I just don't have the time. However, our office does watch the director's talks on LABNET.

For Laboratory closures, delays or early dismissal information, call UPDATE at 667-6622 or 1-877-723-4101 (toll free).

PEOPLE

Laboratory employees win 32 Society for Technical Communication awards

Laboratory publications from Communication Arts and Services (IM-1) and the Los Alamos Neutron Science Center (LANSCE) received 32 awards in the 2005-2006 Society for Technical Communication's Southwest Regional Publications, Art and Online competitions, including Best of Show in the publications competition.

The Physics (P) Division Activity Report 2004 won the Best of Show and Distinguished Technical Communication awards at the competition, which was sponsored by Southern Arizona chapter of the STC. Ninety-five entries from Arizona, New Mexico, California, Colorado and Oklahoma were submitted.

The STC competition rewards effective technical publications, technical art and online communication tools. Three different levels of STC awards are given: Distinguished Technical Communication, Excellence and Merit.

Staff from IM-1 and other Laboratory employees received three Distinguished Technical Communication, 14 Excellence and 14 Merit awards, more than one third of all awards given by the southwest chapter.

"The competition is judged by members of the STC, so when you win one of these awards, it really is about your peers recognizing that you did an excellent job," said Judy Prono of IM-1.

Lab publications and art that won DTC awards will be submitted to the international STC competition and winners will be announced in May.

Distinguished Technical Communication-awarded projects from the Lab that will be entered into the international competition include the LANSCE User Group Meeting poster by Gail Flower of IM-1 and the Physics Division Activity Report 2004 by Jean Butterworth of P Division and Todd Heinrichs and Vicente Garcia, both of IM-1.

New Mexico dominated the Southwestern Region by taking home more than half of the awards, which were given at a luncheon in January sponsored by STC's New Mexico Kachina chapter.

The STC is the largest professional organization of technical communicators with a membership of more than 18,000 worldwide.

For a list of entries and winners for the Lab, go to *http://im-1.lanl.gov/stc.shtml* online.

In Memoriam

Patricia O'Rourke

Laboratory retiree Patricia O'Rourke died Nov. 25, 2005, after a brief illness.

O'Rourke began working at the Laboratory in 1972. While at Los Alamos, she worked in the former Field Testing (J), Basic and Applied Geosciences (G) and Earth and Space Sciences (ESS) — currently Earth and Environmental Sciences (EES) — divisions.

O'Rourke pioneered the first word processing activities in the Laboratory, later supervising a word processing center for G Division. Her last position was in the Geochemistry Group of EES Division, where she retired as assistant group leader for administration in 1991.

O'Rourke is survived by her children Carol Burns of Isotope and Nuclear Chemistry (C-INC), Cathleen McGarity, Patricia Broxton, Mary Beck, Peter and Kenneth; 12 grandchildren and numerous other relatives.

Charles Oliver

Charles A. Oliver died Dec. 12 in California. He was born in August 1916 in Muncie, Ind.

In 1945, Oliver was assigned to the Manhattan Project in Los Alamos while serving in the Army. He was hired by the Laboratory in 1946 and worked at DP site (Technical Area 21) for more than 30 years, retiring in 1978.

He is survived by his wife, Petrita; and his children Jack, Jan, Jacque and Stephanie and their children and grandchildren.

Debby Enenbach

Deborah "Debby" Enenbach died Dec. 29, 2005, after a two-year battle with mesothelioma, a rare form of lung cancer caused by asbestos exposure. She was 57.

Enenbach came to the Laboratory in 1985 as an administrative specialist in the former Personnel Administration (PA) Division. She was deputy group leader, group leader and deputy division in the Human Resources (HR) Division.

Enenbach left the Laboratory in 1994 but returned in 1999. She retired in 2004 as a senior executive staff advisor from HR.

Enenbach earned bachelor's and master's degrees in physical education from the University of Northern Colorado.

Enenbach is survived by her partner Trisha Brinkman; her mother Elizabeth Enenbach; sister Christine Browder; brothers Bill Enenbach and Joe Enenbach; and six nieces.

John Orndoff

Laboratory retiree John Orndoff died Dec. 15. He was 90.

Orndoff came to the Laboratory in 1945 as a staff member in the former Experimental and Pit Division (M-2). He was an alternate group leader in the former Nuclear Rocket Propulsion Division (N-2) from 1951 through 1973 and then worked on a change-of-station assignment with the Nuclear Regulatory Commission in Bethesda, Md. Orndoff returned to the Laboratory and retired from the former Energy Division in 1977.

Orndoff was a graduate of Waynesburg College and also earned master's and doctoral degrees in physics from Colorado University and Purdue University respectively.

Orndoff is survived by his wife, Elizabeth; daughter Barbara; and sons David and Richard.

February service anniversaries

35 years
J. David Bowman, N-3
John Middleditch, P-23
Brook Sandford II, CCS-3

30 years
Allan Anderson, DX-DO
Freddy Garcia, SUP-3
Lois Mcfarland, HR-ADA-TS
John Sandoval, ENV-DO
Douglas Stavert, ESA-WR
Rollin Whitman, PADNWP

25 years
Leonard Beebe, N-2
Judy Buckingham, S-9
Clara Trujillo Demaria, EES-11
Deward Efurd, X-DO
Eugene Garcia, FM-DX-ESA
Eugene Garcia, HSR-12
Fermin Gonzales, SUP-5
M. William Johnson, HSR-1
Virginia Rey, LANSCE-IC
Jacqueline Valdez, IM-9
Lucille Westerhold, FM-DX-ESA
James Whittington II, C-INC
Kenneth Wohletz, B-1

20 years
Michael Borden, LANSCE-MDE
Kwok-Chi Chan, FM-LANSCE
Thomas Cote, DX-2
Vivian Gonzales, HR-ADA-TS
Richard Hammer, CFO-1
Claudia Hernandez, NMT-4
Alan Hoff, LANSCE-ABS
Kenneth Johnson, NMT-3
John Kramer, S-4
Michael Madrid, IM-3
Duane Nizio, CCN-4
Anna Parks, ISR-6
Bernardino Romero Jr., N-2
Elizabeth Ronquillo, LANSCE-MDE
Joseph Zowin, LANSCE-IC

15 years
Cheryl Ammann, ESA-WR
Gary Baca, CCN-5
David Ceman, MST-DO
Richard Gustavsen, C-PCS
Michael Houts, DX-9
Denise Liechty, D-5
Kay Matsumoto, DX-1
Thomas Robison, ISR-2
Christine Roybal, NWIS-DO
James Theiler, C-CSE

10 years
Valerie Anders, IM-8
Steven Batha, ESA-WSE
Joseph Bradley III, P-24
Myra Branch, PM-DS
Stephen Ellis, CFO-3
Gina Fisk, ESA-AET
Gilbert Garduno, CCS-DO
Anne Menefee, FM-NMT
Milan Njegomir, LANSCE-RFE
Michael Reidys, NMT-3
Andrea Salazar, ESA-EDE
Stephanie Salazar, ADTR
James Stewart, P-DO
John Tapia, LANSCE-RFE
Marsha Wenzel, CCS-5

5 years
Marian Anghel, P-25
Genevieve Fernandez, HSR-2
Robert Fields III, MST-STC
Stefanie Herrera, STB-RL
Bryan Howard, T-13
Alan Hurd, N-3
Qinjun Kang, DIR
Zbigniew Karkuszewski, NWIS-TA54W
Darren Kerbyson, N-2
Robert Krabill, PM-IP
Larry Lynn, LANSCE-LC
Angela Martinez, CCN-7
Yvonne Martinez, ISR-3
Vladimir Matias, CCS-3
Kirsten Mccabe, DX-6
Barbara Mcintosh, P-21
Joshua Miller, CCS-3
Catherine Porto, B-1
Lindsey Quam, N-3
Jessica Salazar, EES-6
Manolito Sanchez, EES-12
Patrick Shriver, CFO-3
Robert Singleton, ESA-WSE
Rolando Somma, B-1
Maria Valero-Aracama, X-7
Richard Van De Water, HSR-5

Environmental Management System

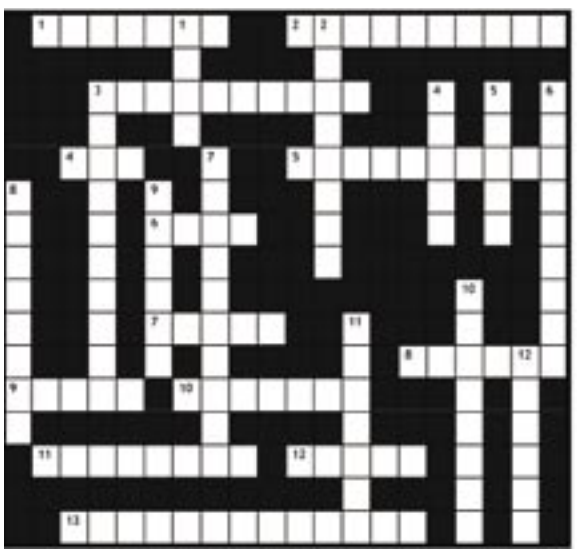
Editor's note: The following puzzle was provided by the Environmental Stewardship (ENV) Division to help familiarize employees with the Lab's Environmental Management System.

ACROSS

1. Data storage devices, such as _____ disks, cannot be recycled at this time, but must be disposed of in accordance with security requirements.
2. Division Environmental Action Plans, which can be found at ems.lanl.gov online, include _____ to continually improve environmental performance.
3. ISO 14001 includes a requirement to monitor implementation and take _____ and preventive measures if failures occur.
4. _____ makes good business sense.
5. Pollution _____ is a key commitment of the Laboratory's Environmental Governing Policy.
6. The EMS Web site at *ems.lanl.gov* is a one stop _____ for information on the EMS.
7. DOE Order 450.1 "Environmental Protection Program" defines an EMS as a continuing _____ of planning, implementing, evaluating and improving processes and actions undertaken to achieve environmental goals.
8. The Laboratory EMS includes an _____ process for updating division Environmental Action Plans Computers that have been used to process classified, sensitive unclassified, or unclassified information can be reused or disposed of in accordance with S Division and _____ security requirements.
9. EMS provides an important system for minimizing disruption to_____ critical work at Los Alamos.
10. _____ batteries that have no radioactive or chemical contamination can be placed directly in the trash.
11. Pollution awareness and prevention includes the three (3) R's: reduce, _____ and recycle.
12. The EMS Slogan states: Safety for You, Security for the Nation, _____ for our Future.

DOWN

1. The EMS ____ Team is made up of representatives from all divisions and the active involvement of members has been the key to the success of the EMS.
2. Plastic _____ bottles, aluminum cans and clean foil can be recycled at gray plastic and aluminum collection carts.
3. Environmental _____ is a commitment of the Laboratory Environmental Governing Policy.
4. Other benefits of EMS include improving incident management, increasing pollution prevention activities, decreasing work disruptions, and reducing _____ and penalties.
5. Each division has an EMS _____of Contact who can answer questions about your Division's EMS activities.
6. The Laboratory Governing Environmental Policy includes a commitment to _____ improvement.
7. Environmental _____ is everyone's job.
8. The new LANS _____ includes EMS as a requirement.
9. An Environmental _____ is an element of the activities, products and services of our operations that have the potential to interact with the environment.
10. _____ can use the EMS Audit Guidance Cards, which can be downloaded from *ems.lanl.gov* online, to check that implementation is on track.
11. Information on how to _____ a Pollution Prevention Opportunity Assessment can be found at *p2.lanl.gov* online.
12. ISO 14001 requires regular independent _____ to obtain and maintain certification.



Hint: The EMS Web site at ems.lanl.gov online is a great place to look for clues.

Answers to the crossword puzzle can be found on Page 8.

This month in history ...

February

1564 — Physicist and astronomer Galileo Galilei born.

1752 — Pennsylvania Hospital, the first hospital in the United States, opens.

1827 — The first Mardi Gras is celebrated in New Orleans, La.

1848 — The war between the United States and Mexico ends with the signing of the Treaty of Guadalupe Hidalgo.

1878 — The Lincoln County War begins in Lincoln County, N.M., and continues until 1881.

1913 — Prizes are included in Cracker Jack candy boxes for the first time.

1923 — A fire in Mine No. 1 of the Stage Canyon Mine near Raton kills 125 miners.

1924 — IBM corporation is founded.

1935 — Robert Watson-Watt gives the first public demonstration of RADAR.

1942 — The first attack on the U.S. mainland occurs as a Japanese submarine shells an oil refinery near Santa Barbara, Calif., causing minor damage.

1943 — The staff of the Ranch School leaves Los Alamos.

1943 — Groundbreaking is held for the first unit of the Y-12 plant at Oak Ridge.

1944 — U.S. Marines raise the flag at Iwo Jima.

1948 — Lt. Gen. Leslie R. Groves, wartime boss of the army's atom bomb project, retires.

1953 — The structure of the DNA molecule is discovered.

1956 — Critical experiments begin on LAPRE I (Los Alamos Power Reactor Experiment), a new concept in nuclear reactor design.

1957 — The security guards at the entrances to town are officially withdrawn, and Los Alamos becomes an "open city."

1958 — A hydrogen bomb known as the Tybee Bomb is lost by the U.S. Air Force off the coast of Savannah, Ga., never to be recovered.

1960 — France tests its first atomic bomb.

1965 — Laboratory employee George Cowan receives the Ernest O. Lawrence Memorial Award. Former Laboratory staff member Theodore Taylor is another recipient.

1972 — President Richard Nixon arrives in China for historic meetings with Chairman Mao Tse-tung and Premier Chou En-lai.

1980 — The United States ice hockey team defeats the Soviet Union team at the 1980 Winter Olympic Games, in an upset dubbed the "Miracle on Ice."

1984 — The Laboratory's Wellness Center holds its grand opening.

1992 — The Connection Machine 5, a massively parallel computer, is delivered to the Laboratory.

1997 — In Roslin, Scotland, scientists announce that an adult sheep named Dolly has been successfully cloned.

2001 — Near Earth Asteroid Rendezvous (NEAR) Shoemaker spacecraft touches down in the "saddle" region of 433 Eros becoming the first spacecraft to land on an asteroid.

And this from the February 1968 ATOM: Spiraling medical costs and unusually high utilization of medical facilities by [Los Alamos Scientific Laboratory] employees have made it necessary to increase premiums on all group health insurance plans. ... up to $7.50 per month.

The information in this column comes from several sources including the online History Channel, the Newsbulletin and its predecessors, the atomic archive.com, Echo Vitural Center, Science & Technology, Real History Archives, and Carey Sublette, "Chronology for the Origin of Atomic Weapons" from www.childrenofthemanhattanproject.org/ MP_Misc/ atomic_timeline_1.htm.

Submissions are welcome. Please be sure to include your source.

Into the eye of the storm

by Kaiti Ferguson

When Hurricane Katrina hit, an incredible amount of devastation and confusion came as well. Following this event was a tremendous outpouring of generosity.

One of the greatest contributions made to the relief effort was the human element. Antonya Jandacek of the Science and Technology Base Program office (STB-LDRD) was one of those individuals who dedicated their time to the cause in Arkansas.

When Jandacek read an e-mail that announced the Federal Emergency Management Agency and the Peace Corps would work together to provide aid for the evacuees of Hurricane Katrina, she knew she wanted to help. As a Returned Peace Corps Volunteer, Jandacek recognized the importance of this relationship. "This [was] somewhat monumental as it [was] the first time in the Peace Corps' 45-year-history that they respond[ed] to a domestic need," said Jandacek.

Jandacek has a longstanding commitment to public service. When she graduated from Los Alamos High School, she took a year off to perform volunteer work in England. It wasn't until a trip to Bosnia that Jandecek realized public service was her passion. After graduating from New Mexico State University with a bachelor's degree in special education, Jandacek continued her commitment to public service. She joined the Peace Corps and taught English to junior high students on the small island republic of Kiribati. "I loved it and actually extended my stay for three years," she said.

This desire to offer her knowledge and support was greatly needed in Arkansas where more than 30,000 hurricane survivors were located. Although Jandacek immediately signed up to work with the relief effort, it wasn't until more than a month later that she received any word. "I didn't think I'd be doing it, and then they phoned on a Monday and asked me if I could go the next week," she said.

For the month of November, Jandacek traveled around the southeast corner of Arkansas. Fortunately, her employers already had approved her potential leave and were extremely supportive. She was one of a few people in her group of volunteers who had a job to return to.

While in Arkansas, Jandacek's main duties consisted of working with the evacuees to help them get FEMA benefits and move them from hotels to apartments or trailers. Although there were three days of FEMA training to acquaint the volunteers with the FEMA system and database, no amount of training would prepare Jandacek for what she would encounter. "People were frustrated because they didn't understand how the government worked and what they needed to do to get through the process. Everybody I had met had been in the Superdome, Convention Center or had been rescued," said Jandacek.

However, it was the different coping mechanisms the evacuees had that made an impact on Jandacek. "What impressed me the most were the different attitudes people had. A number of people still were grieving and in pain, while other people saw it as a chance to start over. It was stunning to see the contrast," she noted.

When asked what made the difference between the two attitudes, Jandacek paused for a moment and said, "Having a family and friend network made the difference."

After living in Arkansas for a month, Jandacek feels she has learned much from this experience. "I didn't change anyone's life for the better, but I think I was one person in a line of many to help them get back on their feet again."

Antonya Jandacek

Antonya Jandacek, left, of the Science and Technology Base Program office (STB-LDRD) works with members of the Federal Emergency Management Agency in Arkansas on the FEMA database following Hurricane Katrina. Last November, Jandacek traveled around the southeast corner of Arkansas, where more than 30,000 hurricane survivors were located.

At left, a FEMA trailer heads down the highway toward Louisiana. The trailers were brought in to help house hurricane evacuees. *Photos courtesy of Jandacek*

Answers to Emergency Management System crossword puzzle on Page 7

Across: 1) Compact 2) Objectives 3) Corrective 4) EMS 5) Prevention 6) Shop 7) Cycle 8) Annual, Cyber 9) Mission 10) Alkaline 11) Reuse 12) Environmental

Down: 1) Core 2) Beverage 3) Compliance 4) Fines 5) Point 6) Continual 7) Protection 8) Contract 9) Aspect 10) Managers 11) Conduct 12) Audits