

HOTLINE

The Princeton Plasma Physics Laboratory is a United States Department of Energy Facility

PPPL Honors Inventors



The inventors at the Patent Dinner are, from left, Charles Gentile, Philip Efthimion, Andrew Carpe, David Staack, Yevgeny Raitses, Charles Skinner, John Desandro, Eliot Feibush, Stephen Jardin, Scott Klasky, Erik Perry, George Ascione, John Schmidt, Kenneth Hill, Geoff Gettelfinger, Keith Rule, Robert Parsells, Irving Zatz, and Robert Woolley. The complete list of honorees is at the end of the article.

The Laboratory honored its inventors in June at the twenty-first annual Patent Awareness Program Recognition Dinner at Princeton University's Prospect House. The event honored 33 inventors who received patents and disclosed inventions during Fiscal Year 2002. The honorees are from the Research, Engineering, and Technical staff of PPPL, as well as from other institutions that work in collaboration with the Lab.

"There are so many interesting and exciting inventions this year. Tonight is an opportunity to recognize our colleagues for the hard work they've done," said PPPL Deputy Director Rich Hawryluk. Hawryluk, joined by PPPL Committee on Inventions Chair Lewis Meixler, presented the inventors with certificates and checks.

Meixler said, "This year, for the first time since 1992, we have a technology that has been licensed to industry — the Diamond Wire Cutting System — which has been licensed to a small industrial business. And

we also have a second invention, Applying Energetic Ions for Sterilization, on which a company has taken an option on a license. So we are pleased to see that some of our inventions are of interest to the commercial area, which is really what Congress had in mind when it established Technology Transfer as a mission for the nation's laboratories."

The inventors recognized for 2002 include George Ascione, Jun Gyo Bak, Manfred L. Bitter, Andrew Carpe, Lloyd Ciebiera, John D. Desandro, Ilya Y. Dodin, Philip Efthimion, Eliot Feibush, Nathaniel J. Fisch, Charles A. Gentile, Geoff Gettelfinger, Kenneth W. Hill, Stephen C. Jardin, Scott Klasky, Stephen Langish, Sang Gon Lee, Dennis Mansfield, Michael Miller, Hideo Okuda, John Parker, Robert F. Parsells, Erik Perry, Steve Raftopoulos, Yevgeny Raitses, Keith Rule, Gennady Shvets, John Schmidt, Charles H. Skinner, David Staack, Brentley Stratton, Robert Woolley, and Irving Zatz. ●

Patents Issued in Fiscal Year 2002

Method and Apparatus to Produce and Maintain a Thick, Flowing, Liquid Lithium First Wall for Toroidal Magnetic Confinement DT Fusion Reactors

Robert D. Woolley

System and Method of Applying Energetic Ions for Sterilization

John A. Schmidt

Inventions Disclosed in Fiscal Year 2002

MP-VAC-061 Pump/Purge Fixture

*John D. Desandro, Steve Raftopoulos,
and Lloyd Ciebiera*

Method to Decontaminate Hard-to-Access Areas in Fusion Reactors

Charles H. Skinner

Method of Storing, Retrieving,
and Processing Optical Information

Nathaniel J. Fisch and Ilya Y. Dodin

A Hybrid Magnet Configuration for a Compact Next Step Burning Plasma Experiment

Stephen C. Jardin

Electromagnetically-induced Transparency of Magnetized Plasma at Cyclotron Frequency, and Devices Based on It

Gennady Shvets

A New Method for a Simultaneous Measurement of the Integrated X-ray Reflectivity of a Crystal for Different Orders of Reflection

*Manfred L. Bitter, Sang Gon Lee, Jun Gyo Bak,
and Kenneth W. Hill*

Electrostatic Dust Detector

Charles H. Skinner

Fiber Optically Coupled Laser System for Tritium Removal and Wall Conditioning

Charles H. Skinner and Charles A. Gentile

Miniature Integrated Nuclear Detection System (MINDS)

*Charles A. Gentile, George Ascione, Andrew Carpe,
Stephen Langish, and John Parker*

Thermoelectrically Cooled Energy Transmission Window

Robert Parsells and Charles A. Gentile

A High Precision Computer Controlled Six Degree of Freedom Positioning System

*Irving Zatz, Scott Klasky, Michael Miller,
and Eliot Feibush*

Probe Insulator with Segmented Conductive Shield

David Staack, Yevgeny Raitses, and Nathaniel J. Fisch

New Processes for Diamond Wire Saw Cutting of Complex Metal Structures

*Robert F. Parsells, Geoff Gettelfinger,
Erik Perry, and Keith Rule*

Laser Backscatter Measurement of Optical Indices

*Brentley Stratton, Hideo Okuda,
Dennis Mansfield, and Phil Efthimion*

Committee on Inventions

C.Z. Cheng, David Cylinder, Philip Efthimion, Terry Greenberg, Richard Hawryluk (ex officio), Stephen Jardin, Henry Kugel, Lewis Meixler (Chair), Carol Phillips, John Schmidt, Hironori Takahashi, Michael Williams, and Ed Winkler.

PPPL Receives Accolades from Energy Department for TFTR Decommissioning

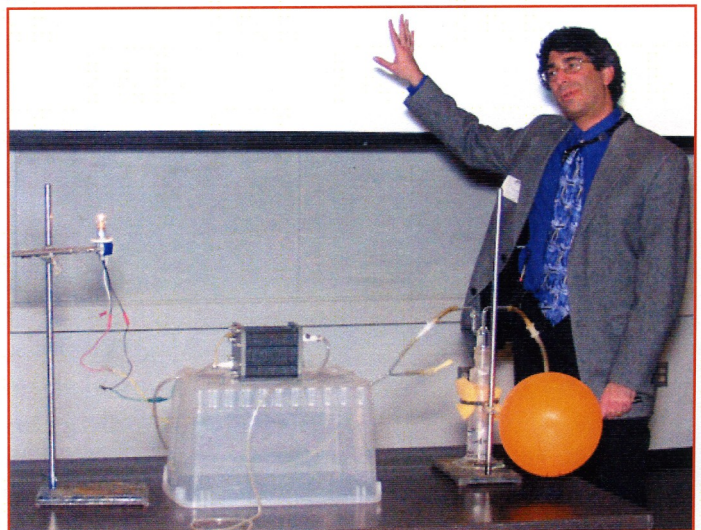


In May, Department of Energy (DOE) officials recognized PPPL and the DOE-Princeton Group (PG) for the project management of the TFTR Decontamination and Decommissioning (D&D). The Lab received an Honorable Mention citation for "excellence in project management" during the DOE Office of Engineering and Construction Management ceremony at DOE Headquarters in Washington, D.C. From left are DOE's Jeff Makiel, DOE's Gene Nardella, DOE Associate SC Director for Fusion Energy Sciences N. Anne Davies, PPPL's Erik Perry, and DOE's George Cava. Perry, who managed the TFTR D&D Project, attended the ceremony and accepted the certificates for TFTR D&D staff. The awards were for "significant contributions to the Tokamak Fusion Test Reactor Project." Makiel and Cava are from the DOE-PG and Nardella is from the DOE's Office of Fusion Energy Sciences.

Fuel Cell Demo Highlights Earth Day Event

Princeton University Professor Andrew Bocarsly (at right) gave a presentation, "Fuel Cells: Bringing Hydrogen to the Marketplace," on May 1 at PPPL's Seventh Annual Earth Day Event. The talk, which included a fuel cell demonstration, took place in the MBG Auditorium.

The day also included pollution prevention and environmental displays in PPPL's Lobby. The event was free and open to the public. Exhibitors were Eurest Dining Services, the Princeton Environmental Institute, Princeton University Water Watch, and Executive Business Products, as well as PPPL's Science Education, Maintenance & Operations, and Environmental Restoration/Waste Management groups. ●



New Temperature Sensors Lead to Better Energy Efficiency at PPPL



Some members of the team involved in the temperature sensor project at the New Engineering Wing are, from left, Sharon Warkala, Mark Kijek, Gabby Dibaczy (Powers Electric), Tom McGeachen, Carl Potensky, and Rich Borusovic.

To save energy and add comfort, fourteen new high-tech temperature sensors were installed at the New Engineering Wing recently. The sensors provide better temperature control. Eighty similar systems will be added to areas of the Lyman Spitzer Building during the next six to nine months.

“Staff who have the sensors in their areas are more comfortable, and the installation will save the Lab energy and expenses because these sensors, which are computerized and digital, allow for more precise control. They also don’t require calibration every year,” said PPPL’s Tom McGeachen. He and PPPL’s Mark Kijek headed the project, which was completed last fall in the New Engineering Wing.

The work involved the installation of direct digital controls on 14 variable air volume boxes and the installation of variable frequency drives on both the supply and relief fans. The direct digital control and variable air volume boxes give precise zone temperature and airflow control, resulting in cooling, heating, and fan energy savings. The variable frequency drives control the volume of air delivered by the Heating Ventilation & Air Conditioning (HVAC) system. The drives replace inlet guide

vanes on the fans. By reducing the volume of supplied air by only 20 percent, the electrical energy or operating cost required by the fan is reduced by 50 percent.

The total project cost for the New Engineering Wing was \$55,000 and the total estimated annual savings is \$22,410. The Lab received funding for the project from the Federal Energy Management Program (FEMP). Powers Electric and Siemens, as well as PPPL electricians, HVAC technicians, AC power, and electrical safety staff did the work. PPPL also received a \$4,000 rebate from the electrical power utility for the installation of the variable frequency drives.

McGeachen said there is an additional benefit to the energy and cost savings. “Any time you reduce energy consumption, you reduce pollution,” he said.

Those involved in the project include PPPL’s J.W. Anderson, Joanne Bianco, Richard Borusovic, Mark Kijek, Larry Rich, Ronnie Koon, T.J. McGeachen, Carl A. Potensky, Robert Sheneman, Dick Shoe, Larry Sutton, Sharon Warkala, and Art Wise; DOE-Princeton Group’s George Cava and Jeff Makiel; Powers Electric’s Gabby Dibaczy and staff; and Siemens’ Marcos Gonzalez, Rich Brusca, and Tim Claffey. ●

Out with the Old, In with the New

The PBX-M and PLT Control Rooms are Cleared for NCSX; the NSTX Control Room Gets a New Floor



The former Princeton Beta Experiment-Modification (PBX-M) and Princeton Large Torus (PLT) Control Rooms (above) have been emptied to make way for the new National Compact Stellarator Experiment (NCSX) Control Room. The project took place during the past four months and was done by crews from PPPL's Tech Shop and Neutral Beam Team, as well as Powers Electric. Since NCSX is scheduled to begin operations in 2007, construction on the new Control Room is anticipated to begin the year before that. Above is the cleared space and inset is the space during demolition.

Below is the Control Room for the National Spherical Torus Experiment (NSTX) before (left) and after (right) its flooring was replaced. The Lab's Neutral Beam Team, along with the help of the Computer Division, recently completed the project. The work included removing the old flooring and installing the new flooring, as well as disconnecting and reconnecting the data links and operations computers before removal and following installation. The project entailed removing legacy cable and wiring from under the floor to get rid of unused wiring from the Tokamak Fusion Test Reactor, removing racks to make more space for the physics operator station, and delicate handling of computer racks that could not be dismantled. ●



The Show Goes On

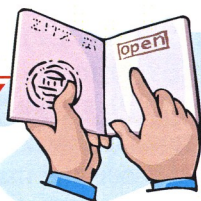


PPPL's James Morgan did hands-on science demonstrations in May for a group of 60 youngsters at Happy World, a child day-care center in East Windsor Township. Morgan (left) shows 5-year-old Alex Siminoff the plasma light saber. Alex is the son of PPPL's Jerry Siminoff.

Post-Zwicker Lauded



On May 28, PPPL's Andrew Post-Zwicker was among nine scientists, teachers, and administrators receiving Certificates of Recognition from the Princeton chapter of Sigma Xi, the Scientific Research Society. The recipients were honored for their contributions to science education. They received the certificates at a Sigma Xi meeting at Princeton University. Post-Zwicker (far left) is with the other honorees.



Visa Procedures

If you are anticipating a visit or an assignment from a foreign national — a person who is not a U.S. citizen or permanent resident — please contact Barbara Sobel in the PPPL Deputy Director's Office. She is the Visa Coordinator for the Laboratory and she handles all visa requests. Sobel can help determine what type of visa a visitor requires, if any, and will work with the PPPL host for the visitor in filling out the required paperwork.

Since September 11th and the formation of the U.S. Department of Homeland Security, procedures involving visa applications are time-consuming and complicated. Visa approval from the Immigration and Nationalization Service can take 12-16 weeks. Hosts should anticipate this delay and request a visit or collaboration as soon as possible. In addition, the U.S. Department of Energy has instituted procedures and Unclassified Foreign Visits and Assignments guidelines that PPPL is required to follow. For more information about the visa application process, contact Sobel at Ext. 2602 or via e-mail at bsobel@pppl.gov.

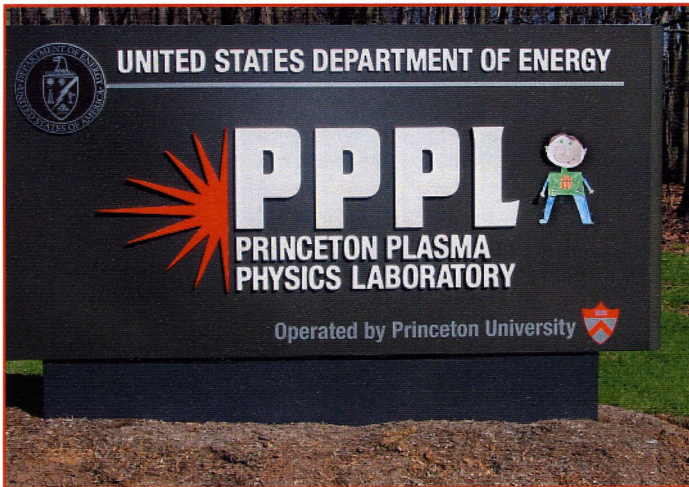
Hotline

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Flat Stanley's Great Adventure...at PPPL



Flat Stanley at the entrance to the Lab.



PPPL Emergency Services Captain Wes Foraker, the host for Flat Stanley, gives the paper character a lift.

International traveler Flat Stanley found his way to PPPL recently. Flat Stanley, an educational creation used in grade schools, rode a PPPL firetruck and hung out with the Emergency Services crew at the Lab. Emergency Services Captain Wes Foraker received Stanley from a youngster in Wisconsin via the youngster's uncle, who is Wes's friend.

Flat Stanley is a paper doll who travels across the world. His hosts record his adventures in a journal, returning the paper doll and journal to the student who initiated his journey. The Flat Stanley Project was created in 1995 by a third-grade teacher named Dale Hubert, who wanted to use the flattened paper boy as a literacy and communications tool. Flat Stanley quickly became a geography, math, and technology tool, as well. Hubert based the center of his project on a storybook character — created by Jeff Brown — who wakes up to discover he's been flattened by a bulletin board mounted over his bed. The two-dimensional boy decides that he can still go on adventures, and travels to California in an envelope. Hubert established a web site and asked school children to make a Flat Stanley out of paper and mail it, along with a journal, to others. The hosts of the visits return the paper character and his journal. Over the years, Flat Stanley has been on many television programs, across Canada and the U.S., and to Mount Everest and the Taj Mahal. He's even been to see troops in Afghanistan and to Colin Powell's office. Said Foraker, "My friend wanted Flat Stanley to go on a firetruck. After his visit to PPPL, Stanley is now safely and happily back in Wisconsin."

For more information about the Flat Stanley Project, visit the web site at <http://www.flatstanleyproject.com>. ●



The PPPL Picnic, "Lunch on the Lawn," is scheduled for Thursday, July 17, from 11:30 a.m. to 2 p.m. on the front lawn outside the Lyman Spitzer Building. The rain date is Friday, July 18. There will be a picnic lunch and games. All PPPL'ers are invited. Tickets are required so that enough food can be ordered and for "door" prizes. Tickets are available through Sonja Patterson in Human Resources.

The PPPL Artists' Colony



Welcome to the newly created "PPPL Artists Colony," a space in Hotline devoted to displaying the artistic endeavors of and playful takes on art by those at PPPL. Above is PPPL photographer Elle Starkman's Warholesque portrait of PPPL physicist Bob Kaita. The four images of one photo are enhanced, using Photoshop tools, and evoke the silkscreen method of transferring photos to canvas devised by Pop artist Andy Warhol. If you would like to contribute a creation to be considered for the Artists' Colony, please send it electronically to pwieser@pppl.gov or via mail to MS-38.