

PHYSICS COMMUNITY

Germany Assembles Nanotechnology Networks

Six nanotechnology centers are starting up in Germany this fall, as part of a DM 150 million (\$90 million) push to keep the country internationally competitive in this burgeoning field.

The main R&D areas of the centers, which were chosen from among 14 bids, are ultrathin functional layers (based in Dresden); applications of nanostructures in optoelectronics (Berlin); development of lateral nanostructures (Aachen); chemical functionalization of nanostructures (Tübingen); ultraprecise surface measurements (Braunschweig); and nanostructure analysis methods (Münster).

Each center is organized as a network, with 25–100 participating groups from universities, research institutes and industry from around the country. This decentralized setup is meant to “create highly attractive jobs in new industrial areas and to bridge the well-known gap between fundamental research and industrial applications,” says Heinrich Kurz, the spokesman for the Aachen center. Adds physicist Harald Fuchs, the spokesman for the nanostructure analysis methods center, “Industry will know where to come with questions about product development, and students, in particular, will benefit by getting ideas early for specific research tasks needed by industry.”

The centers are also expected to advise the German government on research and technology matters, says Bernd Hunger, a spokesman for the Federal Ministry of Education, Science, Research and Technology (BMBF), which is funding the centers.

Each center will receive about DM 500 000 a year for three years in start-up money, and the BMBF plans to spend an additional DM 30 million a year on nanotechnology over the next five years. This money is to be available competitively to all researchers, though members of the centers will be given priority, Hunger says.

Distributed networks for fostering interdisciplinary research and technology transfer are springing up worldwide in various scientific fields. These six nanotechnology centers are modeled on biotechnology centers set up in Germany two years ago, and other such enterprises exist or are planned in

Switzerland, the UK, the US and elsewhere. The German nanotechnology centers are expected to seek additional, nongovernment funding and to produce spin-off companies. The hope is that they'll become self-sustaining after five years.

TONI FEDER

Cambridge to Get New Library, Hawking Archive

Thanks to a \$12.5 million gift from Intel Corp cofounder Gordon Moore and his wife, Betty Moore, the University of Cambridge will have a physical sciences and technology library that

INTEL



GORDON MOORE (right) with Stephen Hawking.

will bring under one roof resources now scattered throughout the institution.

The new library will provide both print and electronic media storage and, librarian Peter Fox says, “will be equipped to take advantage of new, as-yet-undreamt-of forms of information technology.” Planned as a circular building, the library will go up next to the university’s new mathematics center. Construction is scheduled to begin next fall, with the library to open about a year later.

Cambridge physicist Stephen Hawking is donating his papers to the university, and they will be housed in the library, along with the papers of Isaac Newton, Charles Darwin and other scientists. The Hawking archive will include handwritten papers from before 1973, an early draft of his book *A Brief History of Time* and more recent as well as future works in electronic form.

Hawking, who has long been physically immobilized by a motor neuron disease, uses a laptop that was outfitted by Intel with communication aids

such as wireless access to the Internet and software to accelerate text-to-voice synthesis.

TONI FEDER

Hogstrom Is AAPM’s President-Elect for 1999

Next month, the American Association of Physicists in Medicine will get a new president-elect: Kenneth R. Hogstrom, of the University of Texas, Houston. Hogstrom will succeed Geoffrey Ibbott, who will begin his one-year term as president of AAPM.

Hogstrom is a professor and the chairman of the radiation physics department at the University of Texas M. D. Anderson Cancer Center in Houston. The recipient of BS and MS degrees from the University of Houston and a PhD in physics from Rice University, Hogstrom has done research on the application of electron transport to beam design, dose measurement, dose calculation and treatment modifiers, and the development of stereotactic and conformal therapy techniques.

Also taking office next month will be James M. Galvin (Thomas Jefferson University), as secretary of AAPM, and four new board members at large: Thomas Rockwell Mackie (University of Wisconsin—Madison); Mary K. Martel (University of Michigan Medical School); Cynthia H. McCollough (Mayo Clinic); and David W. O. Rogers (National Research Council of Canada).



K. HOGSTROM

APS Elects Trilling Vice President

George H. Trilling has been elected vice president of the American Physical Society for 1999. On 1 January, he will succeed James Langer, and will become president-elect of APS in 2000 and president in 2001.

Trilling is a professor emeritus of physics at the University of California, Berkeley and a senior faculty physicist at Lawrence Berkeley National Labora-

tory. Educated at Caltech, where he received his BS in 1951 and PhD in 1955, he served on the physics faculty of the University of Michigan for several years before joining UC Berkeley in 1960. An experimental particle physicist, Trilling has studied hadron interactions and resonances and electron-positron annihilation at high energy.



G. TRILLING

Also taking office next month will be the new chair-elect of the nominating committee, Michael S. Turner, a professor and the chair of the department of astronomy and astrophysics at the University of Chicago, and four new members of the APS council: L. Craig Davis (Ford Research Laboratory); Philip H. Bucksbaum (University of Michigan); Leon Lederman (Illinois Institute of Technology); and James Trefl (George Mason University).

In other APS election news, members overwhelmingly approved changes to the constitution to allow electronic balloting in future elections.

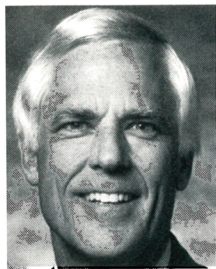
Powell Will Lead OSA in 2001

Richard Powell of the University of Arizona has been elected vice president of the Optical Society of America for 1999. Powell, who will succeed Erich Ippen, will take office at the start of next month and assume the presidency of OSA in 2001.

Powell received his BS from the US Naval Academy in 1962 and his MS and PhD in physics from Arizona State University in 1964 and 1967, respectively. He worked at Sandia National Laboratories for three years before joining the physics faculty at Oklahoma State University in 1971. In 1992, he moved to the University of Arizona, where he is a professor and director of the optical sciences center. Powell has studied the spectroscopic and lasing properties of solid-state laser materials, and most recently he has been

working on the development and application of all-solid-state Raman lasers and amplifiers.

Three new members of the OSA board of directors will also take office next month. They are Peter Knight (Imperial College of Science, Technology and Medicine in Lon-



R. POWELL

don, England); Don Scifres (SDL Inc); and Richard Shoemaker (University of Arizona).

AVS President-Elect for 1999 Is Grunthaner

On 1 January, Paula J. Grunthaner will become president-elect of the American Vacuum Society. She will succeed Stephen Rosnagel, AVS's president for 1999.

Grunthaner earned her BS and PhD in chemistry from Caltech in 1975 and 1980, respectively. For the past 23 years, she has been at the Jet Propulsion Laboratory, where her work has included development of advanced sensors for NASA applications, including silicon-based ultraviolet, low-energy x-ray and low-energy proton-electron detectors. Recently, she has been working on microchemical analysis systems for *in situ* planetary exploration.

Also taking office next month will be Joseph E. Greene (University of Illinois at Urbana-Champaign and Linköping University in Sweden), who



P. GRUNTHANER

was reelected clerk, and John W. Coburn (University of California, Berkeley), who was elected treasurer. The three new directors of AVS are Cammy R. Abernathy (University of Florida); Gregory J. Exarhos (Pacific Northwest National Laboratory); and Peter M. A. Sherwood (Kansas State University). The two new AVS trustees are Dawn A. Bonnell (University of Pennsylvania) and Leonard J. Brillson (Ohio State University).

IN BRIEF

The x-ray satellite ROSAT is defunct, its operators announced on 3 November. The ultraviolet filter that protected the satellite's x-ray camera was destroyed when a reaction wheel malfunctioned, forcing the satellite to point at the Sun. The mishap occurred on 20 September, just three weeks after the satellite had been brought back on-line following the failure last April of the satellite's navigating star tracker. Launched in 1990, ROSAT greatly surpassed its original two-year life expectancy. It was designed and built under the guidance of scientists at the Max Planck Institute for Extraterrestrial Physics in Garching, Germany, who carried out an All-Sky Survey during the satellite's first six months in orbit (see PHYSICS TODAY, November, page 53); since then, observation time has been divvied among the German, American and British space agencies. ■

Web Watch

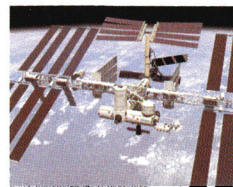
<http://www.gaussian.com>

As described on page 20, John Pople earned a share of this year's Nobel Prize in Chemistry for developing GAUSSIAN, a series of computer programs that use quantum mechanics to calculate molecular energy levels. The **Official Gaussian Home Page** details the latest version of the program, Gaussian 98, and explains how you can obtain your own copy.



<http://station.nasa.gov>

The current annual cost of the beleaguered **International Space Station** is about \$2 billion, but there's more to the vast project than its cost. NASA's Space Station Web site offers up-to-date information about the assembly and launch of the various station modules, as well as a large collection of images.



<http://www.nsf.gov/od/lpa/news/publicat/frontier/>

Available on the Web since January 1996, the National Science Foundation's monthly magazine **Frontiers** reports on advances in mathematics, science and engineering and on issues in education and public policy.



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