Cold Fusion Gets Chilly Encore

Claims of cold fusion are no more convincing today than they were 15 years ago. That's the conclusion of the Department of Energy's fresh look at advances in extracting energy from low-energy nuclear reactions. A report released on 1 December 2004 echoes DOE's 1989 study that followed the headline-making claims of cold fusion by Stanley Pons and Martin Fleischmann.

Since Pons and Fleischmann's claims, cold fusion has fallen into disrepute among scientists, with only a few soldiering on under professional adversity. Most are funded by industry or various governments.

DOE revisited the topic at the behest of cold fusion researchers (see PHYSICS TODAY, April 2004, page 27). The researchers submitted a 30-page document, "New Physical Effects in Metal Deuterides," which DOE had peer-reviewed by 18 scientists, 9 of whom also attended a day of oral presentations by 6 cold fusion research groups.

Reviewers were split on whether the experimental evidence for excess power production is compelling. But, the report says, most reviewers, even those who accepted the evidence for excess power production, "stated that the effects are not repeatable, the magnitude of the effect has not increased in over a decade of work, and that many of the reported experiments were not well documented."

Cold fusion researchers put a rosier spin on the report. "The greatest vindication for the cold fusion community was that, instead of being treated like cripples, lepers, and idiots, we were treated like normal scientists in the handling of this review," says Michael McKubre, an electrochemist at SRI International in Menlo Park, California. "Just the fact of the review has heightened the level of discussion. There's been a huge upswing in interest in funding cold fusion research." Adds MIT theorist Peter Hagelstein, "A door has been opened by the reviewers. Whether anybody actually manages to go through it remains to be seen."

The DOE report does not recommend setting aside government money for research into cold fusion. Rather, it identifies areas of research that "could be helpful in resolving some of the controversies in the field"—specifically, characterization of deuterated metals and the search for fusion in thin deuterated films—and recommends that agencies consider funding individual proposals in those areas. Considering individual proposals is nothing new, says Jim Decker, principal deputy director of DOE's Office of Science. "We have always been receptive to research proposals. We make decisions on funding research proposals on the basis of peer review and relevance."

DOE's summary of the reviews can be downloaded from the Web at http://www.science.doe.gov/Sub/Newsroom/News_Releases/DOE-SC/2004/low_energy; the reviewers' individual reports are available at http://newenergytimes.com/DOE/DOE.htm.

Toni Feder

News Notes

Interdisciplinary prize. A new prize honors the late Canadian physicist and 1994 Nobel laureate Bertram Brockhouse. The first recipients of the prize, which recognizes outstanding research by interdisciplinary teams of scientists, are Sajeev John and Geoffrey Ozin, both of the University of Toronto.

Together, John, a theoretical physicist, and Ozin, a materials chemist, design and make crystals that trap light. An early joint creation was a silicon-based inverse opal structure that traps light in the 1.5-micron bandgap range. "It was the first self-assembled photonic bandgap material on a length scale relevant to telecommunications," says John.

The collaboration began when John approached Ozin. "I hadn't heard of him," says Ozin. "He started talking about photonic crystals, and I hadn't heard of them either. He showed me incredible structures, and I thought, 'My God, they are materials filled with holes.' " Ozin, who had "always worked with materials riddled with periodic arrays of holes," scaled up from the nanometer to micron scale. In working together, he says, "there has to be trust, respect, friendship, collegiality. It's just like a marriage."

CAMELIA LINTA/UNIVERSITY OF TORONTO

The annual Brockhouse Canada Prize for Interdisciplinary Research in Science and Engineering was founded and funded by the Natural Sciences and Engineering Research Council of Canada, a federal agency. Recipients should be in Canada and must plow the prize's purse of Can$250 000 (US$210 000) back into research. **TF**

***The Industrial Physicist* folds.** The December/January issue of *The Industrial Physicist* is its last. The bimonthly *TIP* was sent free of charge to 60 000 physicists in industry. During nearly a decade in print, *TIP* won awards for its editorial content, but rising costs and fluctuating advertising revenues made the publication's financial model unsustainable. The overlap with readers of PHYSICS TODAY was less than 10 000; both magazines are published by the American Institute of Physics. *TIP* subscribers will receive three months' free access to the online version of PHYSICS TODAY. **TF** ■

WEB WATCH

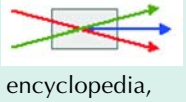
http://biophysics.asu.edu/workshop/report.html

Last May, at the invitation of NSF, a group of physicists met in Tempe, Arizona, to discuss problems and opportunities in biological physics. The report that emerged from the meeting, **The Role of Theory in Biological Physics and Materials**, serves as a helpful survey of the world of biological physics.

http://home.earthlink.net/~papagena/CareerBreaks.html

Getting a job in academic research is hard enough. Imagine trying to do so after you've taken a few years' break. Elizabeth Freeland, a Chicago-based physicist, has faced that challenge. Her website, **Career Breaks**, offers advice on how to cope with planned and unplanned breaks.

http://www.rp-photonics.com/encyclopedia.html



When not running his research group at ETH Zürich, Rüdiger Paschotta provides consulting services to the photonics industry. As part of that enterprise, Paschotta has put together the **Encyclopedia of Laser Physics and Technology**. The online encyclopedia, which continues to grow, contains more than 200 entries.

To suggest topics or sites for Web Watch, please visit http://www.physicstoday.org/suggestwebwatch.html.

Compiled and edited by **Charles Day**