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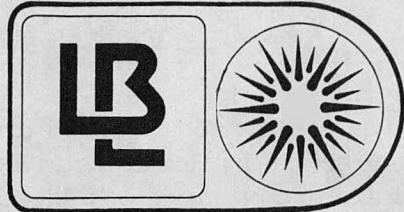
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PUB-432



NEWSLETTER

Lawrence Berkeley Laboratory

Applied Science Division

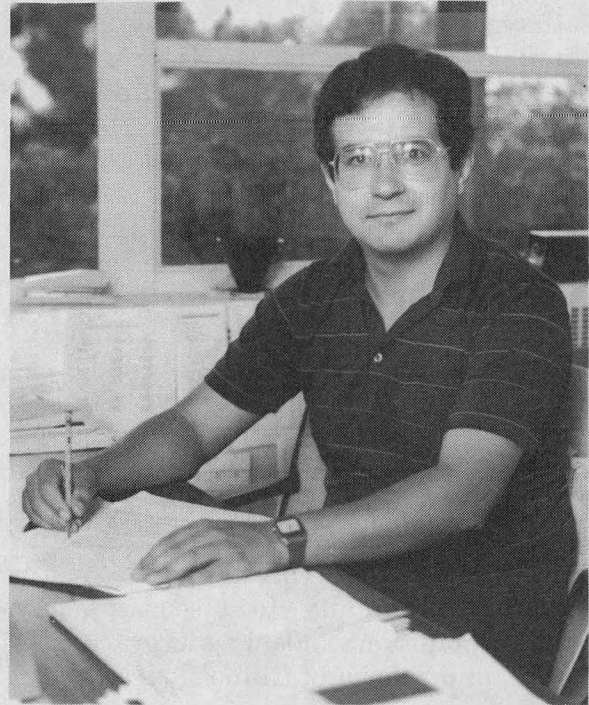
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August-September 1988

ASD PROFILE: ANIBAL DE ALMEIDA

Anibal de Almeida is a visiting scientist from the University of Coimbra, Portugal, where he is Associate Professor in the Department of Electrical Engineering. Dr. de Almeida received his Ph.D. in Power Systems from the University of London. Dr. de Almeida is spending his fourth summer with the Applied Science Division's Center for Building Science, where he is participating in research on energy efficiency and conservation in buildings. In 1987, he and Art Rosenfeld organized the NATO Advanced Study Institute on "Demand-Side Management and Efficient Electricity Use" in Povoá do Varzim, Portugal (the proceedings of this conference were published in 1988 by Kluwer Press).



Specifically, Anibal's work focuses on improving the efficiency of electric motors and motor controls. In terms of energy conservation, this end-use technology has particular relevance for buildings: as reported in a recent LBL report Dr. de Almeida coauthored with members of the Division's Buildings Energy Data Group (*Technology Assessment: Adjustable-Speed Motors and Motor Drives*, Pub. No. LBL-25080,) electric motors use about 60% of the electrical energy produced in the United States. Major energy savings can be effected by technology that automatically adjusts motor speed according to the demands imposed on it. Given that motors and motor drives are used in ventilation systems, air conditioning systems, refrigeration, heat pumps, and other appliances, major energy savings could result from improved motor efficiency in these systems.

Our visitor is pleased with the opportunity to exchange ideas with ASD scientists in various Groups and Programs. Anibal finds the intellectual environment in the Division—and at LBL generally—to be stimulating and conducive to productivity. The interdisciplinary nature of the Division as it relates to energy conservation is particularly useful for his research, Anibal says.

His current work at LBL will provide him the broader perspective he seeks in order to write a book for the American Council for an Energy-Efficient Economy (ACEEE) on motors and motor controls. After their eight-week stay in Berkeley, Dr. de Almeida and his wife will return home, where—in addition to their work—they enjoy their hobby of collecting antique clocks.

PUB-432

ENERGY ANALYSIS STAFF VISITS CHINA

Nanjing, China, was the recent location for an exciting and unprecedented three-day energy conference organized by an international committee: Jayant Sathaye of ASD's Energy Analysis Program; Wilfrid Kohl of the International Energy Program, School of Advanced International Studies, Johns Hopkins University; and Zhou Fengqi of the Energy Research Institute, People's Republic of China. Jayant's LBL co-participants at the conference and at subsequent discussions were Mark Levine, Leader of the Energy Analysis Program; and Lee Schipper, Leader of ASD's International Energy Studies Group. The conference, entitled "Energy Markets and the Future of Energy Demand," required nine months of advance planning and was the first of its kind within the U.S.-Chinese energy research community to discuss energy policy. Pollution control, energy conservation, and reform of China's energy pricing system were major issues discussed.

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The huge rate of economic growth in China has brought with it a dramatic increase in energy use. Energy conservation, however, has not yet surfaced as a common concern or practice among the populace, and lack of price incentive for conserving energy has allowed a huge incremental increase in energy use to accompany China's approximately 10% annual rise in GNP. Of great concern to China's leaders is that country's energy pricing structure, which encourages inefficiency and discourages conservation.

"Planned" (i.e., subsidized) prices are replaced in practice by locally derived prices, which in turn often yield to black-market prices. Representatives of the Chinese government expressed their eagerness to reform pricing and to develop and implement conservation techniques and policies.

The LBL group also learned about China's efforts to control indoor and outdoor pollution, especially in urban areas. In China, almost all cooking is done

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using low-quality coal that is not cleaned (cleaning reduces substantially the sulphur content of the coal). In addition, scrubbers are not yet used by coal-fired power plants. Acid rain has resulted from these practices, and damage caused by acidic pollution is glaringly evident: a slide presentation at the conference depicted two sides of a monument, its windward side pitted and its leeward side, smooth.

According to Mark Levine, who gave a conference address about energy use in buildings, the conference served as a useful means of establishing direct contact with high-level Chinese policy planners. The Energy Research Institute, a co-organizer of the event, serves as a research arm of the Chinese State Planning Commission, the government agency responsible for national policies in many spheres, including energy.

Approximately 30 papers were presented at the conference. About half of these were given by Chinese participants,

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China trip (cont.)

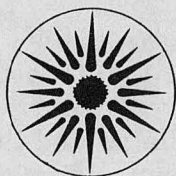
and half by Americans. All three LBL representatives to the conference were impressed by the high quality of the papers. Proceedings of the conference will be published in English as an LBL report.

At the end of the Nanjing visit, the conference sponsors agreed to hold another symposium within the coming

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year. Meanwhile, collaborative studies on several energy-related topics of mutual interest have been proposed.

From Nanjing, Jayant Sathaye and Mark Levine proceeded to Beijing as part of an official DOE delegation that also included Vito Stagliano, Director of Policy Integration at DOE. Along with Mr. Stagliano's Chinese counterparts from the Ministry of Energy, the State Planning Commission and the Energy Research Institute, the LBL group met at Tsinghua University—which might be considered the Chinese equivalent of MIT—before visiting the Great Wall.



REVIEW OF CENTER FOR BUILDING SCIENCE

On August 25-26, ASD hosted a panel of government and energy-industry representatives charged with reviewing the Center for Building Science. Reviewers included Richard Wright, Director of the Center for Building Technology, National Bureau of Standards; Henry Kelly, Senior Associate at the U.S. Office of Technology Assessment; Mike Mertz, Manager of the Commercial Department, PG&E; Jon Veigel, Executive Director of the Oak Ridge Associated Universities; Stephen Wiel of the Nevada Public Service Commission; Arvo Lannus, Senior Program Manager at the Electric Power Research Institute; and Robert Stokes (formerly of Pacific Northwest Laboratory), Deputy Director of Research at the Solar Energy Research Institute. About a dozen others from LBL, DOE, and the University of California were invited to observe the presentations.

The review fulfilled an ASD requirement that a Center receive periodic reviews, most frequently in the Center's formative years. The review committee was charged with evaluating how well the Center for Building Science 1) fosters appropriate, high-quality, short-term studies and technology transfer; 2) brings to ASD longer-term research that will benefit the buildings community; and 3) contributes to the consensus that efficient use of energy is imperative.

At the Review, Center Director Art Rosenfeld outlined the rationale for research in building science and described the structure and activities of the Center. Among other topics, Art also discussed the Center's involvement at the national and international level, the California Institute for Energy Efficiency (CIEE), and least-cost utility planning (LCUP).

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Center review (cont.)

Speaking about activities of their respective Programs were Mark Levine (Energy Analysis), Steve Selkowitz and Sam Berman (Windows and Lighting), Dave Grimsrud (Indoor Environment), and Mike Wahlig (Building Energy Systems). New initiatives such as research into the CO₂ issue and advanced computer-based building design (Steve Selkowitz) were also presented.

After the presentations, the review committee recommended that the Center 1) establish mechanisms for identifying building R&D needs, for setting priorities, and for systematic strategic planning; 2) enhance its liaison links with industry, with key R&D organizations, and with UC-Berkeley; 3) evaluate its management practices to ensure consistency with the Center's strategic planning.

The Center for Building Science was established to encourage, coordinate, and transfer LBL research in building science. Anyone wishing more information about the Center should contact Art Rosenfeld (x4834) or Ralph McLaughlin (x4641).

**ASD RESEARCHER
IN TELEVISED DEBATE**

Walt Westman of the Energy Analysis Program's Environmental Policy Analysis Group appeared on the hour-long *Forum* program on KQED-TV (public television channel 9) to debate the State of California Department of Parks and Recreation policy regarding removal of exotic trees from state parks. Mr. R. Reighburn represented the Parks department in the debate, which aired on July 26, 1988.

In another forest-related activity, Walt also chaired a session on conservation biology and presented his own research in a symposium on "Satellite remote sensing for monitoring landscape properties" at the Annual Meeting of the Ecological Society of America. The meeting took place August 16-19 in Davis, California.

We encourage you to submit information or suggested topics for inclusion in the ASD Newsletter. To do so, contact the Editor, Lila Schwartz (x4098; electronic mail address LNSchwartz@lbl). You may also mail items to Lila at LBL mailstop 90-3026.

**ASD RADON EXPERTISE
SOUGHT BY NEWS MEDIA**

Tony Nero of ASD's Indoor Environment Program was interviewed by Oakland television station KTVU (channel 2) for its *Ten O'Clock News* broadcast of September 13. The occasion of the interview was the U.S. Environmental Protection Agency's recommendation that homeowners and prospective homebuyers test their homes for radon concentrations. Acknowledged as an international expert on radon risk assessment, Tony helped to put the radon danger into perspective for a general audience.

Immediately after the EPA's announcement, the Indoor Environment Program received a flurry of phonecalls from news media around the country asking for additional information about the radon issue.

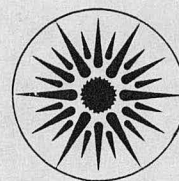
INVITED TALKS AND FOREIGN TRAVEL

July

- **Lee Schipper** attended the *Annual Review of Energy* Editorial Board meeting at Princeton University.
- **Art Rosenfeld** traveled to Montpelier, VT to testify for the Conservation Law Foundation at the Vermont Public Utilities Commission Special Hearing on Conservation.

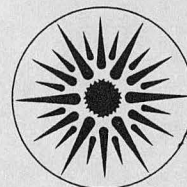
August

- **Paul Berdahl** was invited to present a review at the Fourth International Conference on Infrared Physics in Zurich, Switzerland. The title of his presentation was "State of the Art of Negative Luminescence," co-authored by V. Malysenko of the Soviet Union and T. Morimoto of Japan.
- **Jayant Sathaye** traveled to Ottawa, Canada to participate in a meeting of the International Development Research Center on setting up an urban research network across Asia.
- **Jonathan Koomey** testified for the Public Service Commission in Madison, WI on potential applications of sliding-scale energy fees and rebates in Wisconsin.
- **Walt Westman** chaired a session and presented a paper at the Annual Meeting of the Ecological Society of America.
- **Dick Fish** chaired a session and presented two posters at the Sixth International Symposium on Homogeneous Catalysis.



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