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# WHAT CAUSED A STIR

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## *Boston abuzz on radwaste*

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The MRS meeting in Boston this year was the scene of an event that had a sizable fraction of the membership talking of little else. The event: a panel discussion on *Scientists Views on Optimum Rad Waste Technology Strategies*. The special session, chaired by Dr. Rustum Roy, was lively and provocative, and the discussion from the floor was spirited. The enthusiastic and free wheeling discussions typical of MRS symposia were, in fact, magnified at this special evening session. To understand why, a brief history is in order.

The International Symposium on the Scientific Basis for Nuclear Waste Management has been held annually since 1978 at the Boston Meeting of the MRS. The proceedings of these symposia constitute one of the most heavily cited publication series in the field. The symposia were begun because scientists needed a forum where they could meet and, even though of strongly diverse opinions, openly discuss the technical issues necessary to establish a sound basis for waste management. Indeed, these "rad waste" symposia were noted for their heated debates and for healthy exchanges that clarified where gaps lay in the technology. They also identified methods to obtain the requisite technical information. The advantages of the open discussions are clearly evident when the history of the scientific basis for nuclear waste management is reviewed by perusal of the MRS proceedings on the topic. The Department of Energy has provided continued support for the MRS rad-waste symposia and, more recently, has been joined by the Nuclear Regulatory Commission.

So successful were the MRS symposia that they were expanded in 1982 to include an extension of the topic to an additional symposium,

which was held in Berlin. At that meeting, Dr. A. E. Ringwood of the University of Australia in Canberra, pointed out that a trend toward less open dialogue between scientists had become evident. He expressed concern that new or different ideas were not sufficiently exposed to scrutiny and discussion. His opinion was, indeed, echoed by several other scientists, who asked the MRS to maintain its tradition of healthy discussions on waste management strategies. It was in response to this expression of need that Rustum Roy organized the panel discussion that is the topic of this article.

The panel discussion could have well been entitled: "Scientists Alternative Views on .....", since advocates of existing government strategies were not included on the panel. Strategies sanctioned by several governments were well represented from the floor, however. The panel discussion produced several hours of occasionally agitated debate, which demonstrated that there still exists no unanimity among scientists concerning the detailed when, how, and where questions regarding commercial nuclear waste disposal. The discussion was so disputatious that an onlooker could easily have concluded that the participants could not agree on even basic questions. When queried on this score, Doug Brookins, chairman of the Nuclear Waste Symposium this year responded with a report from Princeton University (*Communication and Innovation in Radioactive Waste Research by R. Wuthnow, J. Beniger, and W. Shrum*) which states; "80% of the entire sample (of rad-waste specialists) expresses agreement with the statement 'Scientific/technical knowledge at present is sufficient for radioactive waste disposal' ". Indeed,

the floor discussion in Boston did appear to indicate favor for borosilicate glass as a nuclear waste form for reprocessed material that would be stored in mined caverns. There was also a strong consensus that nuclear waste, particularly defense waste, can be effectively immobilized. This agreement is a remarkable indication of the progress in the field during the last few years. In spite of semantics, there also emerged a general agreement that demonstrations of the nuclear waste management system should proceed. These demonstrations are important to the nuclear reactor industry and to members of the public who honestly have concerns for proving the safety of the nuclear waste management system. Since it will take a substantial length of time to provide a demonstration, it was agreed that such demonstrations should begin soon. However, commitment of the total inventory of commercial wastes to a demonstration of first generation technology does not appear to be appropriate, since the technology is still evolving rapidly. We are still on the sharply rising portion of the learning curve.

Many scientists who spoke out at the evening panel urged that research be continued aggressively on both wasteforms and repositories, including the subseabed, to provide improvements to a nuclear waste system that could eventually be utilized on the bulk of commercial nuclear wastes. It was also strongly urged that a new, comprehensive, system study to evaluate costs from the reactor to final disposal of wastes be initiated. Such a study would identify trade-offs important to maintenance of the isolation required for the wastes.

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# BRIEFS

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ROSS A. LEMONS, MRS member and co-chairman of this years symposium on *Laser Solid Interactions and Transient Thermal Processing of Materials* recently accepted a position with the Los Alamos National Laboratory Los Alamos, New Mexico 87545. Lemons, who had been employed as a member of technical staff at Bell Laboratories in Holmdel New Jersey, is now group leader - Electronics Research at Los Alamos.

**CALL FOR PAPERS:** The Laser Institute of America requests contributions to its forthcoming *International Congress on the Applications of Lasers and Electro-*

*Optics* which will be held November 14-17, 1983 in San Fransisco, California. Topics will include medicine and biology materials processing, optical communications, inspection, measurement and control, laser chemistry, spectroscopy, information processing, holography, and other scientific applications.

Abstracts should be sent to:

Laser Institute of America  
5151 Monroe Street  
Toledo, OH 43623  
(419) 882-8706

Abstracts are due by *June 10, 1983.*

THE NATIONAL SCIENCE FOUNDATION has awarded a

\$400,000 grant to Ohio State University to establish a Materials Research Laboratory on the university's Columbus campus. The grant is designed to support research studies on how electric charges are transferred across three types of interface - solid to solid, solid to liquid, and solid to vapor.

An electron optics laboratory and a particulate and thin film materials processing facility will be established through the grant. The program also supports faculty from the Departments of Metallurgical Engineering, Ceramic Engineering, and Physics, working jointly on various aspects of the research.



**AT THE PLENARY SESSION** in Boston, moderator A.R.C. Westwood (picture at left) of Martin Marietta presided over a discussion of the question, *Materials R&D In The U.S.--Are We Still Competitive?* J.J. Harwood (picture at right) of Ford Motor's Materials Science Lab argued the U.S. has "exported our technology instead of our products." R&D is not the problem, he asserted, but rather the U.S.'s "weakness in the output of the innovation process -- in the end product or process." H.K. Bowen (not pictured) of MIT analyzed "The Japanese Commitment" as an example of the cooperative efforts of universities, government laboratories and corporations not due to "government edict, but rather to individualistic and entrepreneurial type recognition of the challenges, opportunities and economic pay-off." The session, provocative and timely, generated discussions among the membership that hadn't quieted when the meeting broke up several days later.

## STIR

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The discussion in Boston pointed out again the difficulty facing scientists who are dealing with issues in which the public must be educated and informed. It is true that sensitive ideas can be distorted to create sensational news. However, if science is to lead in the decision making process, it must not be intimidated. In areas requiring public scrutiny, scientists must be able to question and seek answers openly in order to maintain credibility. In some cases the questions will be technically excellent and in others they will be absurd. It is important to keep the discussion focussed on constructive solutions. The panel discussion in Boston disturbed some of the participants and stimulated others.

Dr. G. L. McVay of Battelle Pacific Northwest Laboratory will chair the 1983 International Symposium on the Scientific Basis for Nuclear Waste Management. Please send him your ideas and comments on how we can best achieve a healthy, open forum for open discussion of the relevant issues in 1983.