

# **MRS** BULLETIN

*Materials Research Society Vol. IX No. 5 September/October 1984*

## **WALTER L. BROWN**

The Society Presents Its Arthur Von Hippel Award  
To The Distinguished AT&T Bell Laboratories Scientist

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## **THE MRS ANNUAL MEETING**

Added In 1984 Are A Number Of Innovative Symposia,  
Short Courses And Awards, Plus The All-New  
Equipment Show And Job Placement Center

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## **THE NEW MRS LEADERSHIP**

President Elect Elton N. Kaufmann Outlines  
The Shape Of Things To Come In 1985

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## **NEWS OF MATERIALS INTEREST**

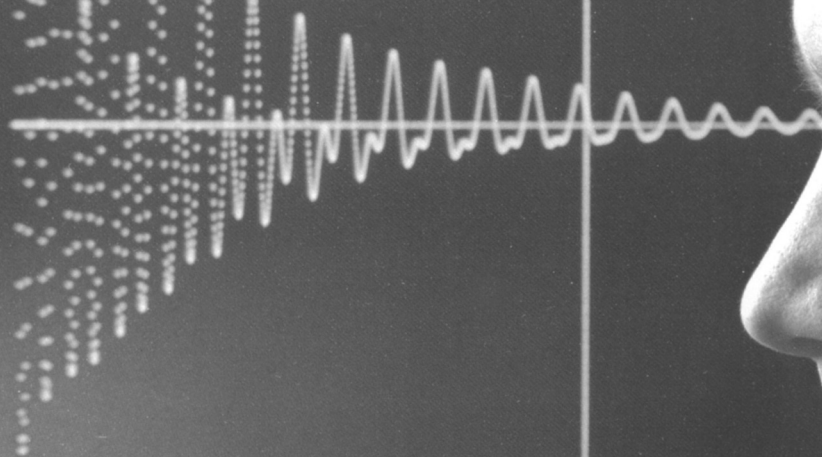
Meetings And Conferences; Book Reviews;  
The Complete Source Of Information For Materials Professionals

*The Materials Research Society  
Is The International Professional Organization  
Of Materials Scientists, Engineers, And Technologists.  
The Society Promotes Fundamental Understanding Of Materials And Their Applications  
Through Topical Interdisciplinary Symposia, Meetings, And Conferences.*

*The Society Extends Its Warmest Welcome  
To Its Members, Old and New, Attending The Annual Meeting*

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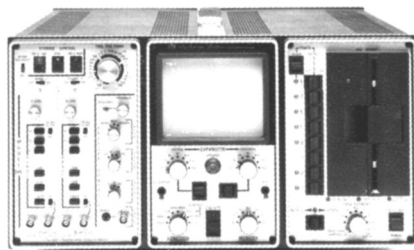
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# **MRS** BULLETIN

VOLUME IX, NUMBER 5

The Materials Research Society BULLETIN is published bimonthly by the Materials Research Society for its members and others interested in materials science. Correspondence and submissions are invited. They should be brief and typewritten (double-spaced), and the author's affiliation must be indicated. Address all material to the Editor.

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## THE MATERIALS RESEARCH SOCIETY

September/October 1984

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# Our Society

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## Materials professionals of every stripe Are represented by the Materials Research Society

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Materials science is the parent of technology, and its child. The fundamental understanding of materials from the atomic to the microstructural level which materials research has contributed has made possible the revolutionary development of "super materials" in the second half of the Twentieth Century. Similarly, the demands this technological revolution has imposed on materials have fostered the growth of materials research. This new profession, "materials science," has found its identity in the Materials Research Society.

The Society comprises physicists, metallurgists, chemists, ceramists and other classically trained scientists and engineers. Materials scientists, however, practice an interdisciplinary art—or, as one of its senior statesmen, Prof. David Turnbull of Harvard University, has termed it, a "superdiscipline." They have found the structure of the classical disciplines inadequate to understand and characterize materials in their complexity. They have discovered their interests are shared, not by their classmates but by their benchmates. As their investigations have led them away from specialization in a *subject* to specialization in a *topic*, they have found themselves professionally estranged from conventional associations and drawn toward one that is strikingly unconventional. The Materials Research Society.

### The Materials Research Society

The meetings of the Materials Research Society are topical and interdisciplinary. Its PROCEEDINGS are relevant to the topic under investigation, rather than the background of the reader. Its members are task-oriented, whether they practice fundamental science or applications engineering. Its organizational substance is evolving and unfixd. It is growing as rapidly and spontaneously as technology itself.

The Materials Research Society serves the interests of all materials professionals.

### A Brief History

The Materials Research Society was formed in 1972 by a founding committee that comprised:

Prof. Eric Baer  
Prof. Harry C. Gatos  
Prof. Robert A. Huggins  
Dr. Kenneth A. Jackson  
Dr. Eric Kay  
Dr. Robert Laudise  
Dr. Mark B. Myers  
Prof. Earle Parker  
Prof. S.V. Radcliffe  
Prof. Rustum Roy  
Dr. B. Sheldon Sprague  
Prof. Richard S. Stein

Prof. Sanford Sternstein

Dr. James J. Tietjen

Dr. I. Warshaw

Dr. Leonard R. Weisberg

These materials research practitioners shared the view that their professional interests were not adequately addressed by existing, disciplinary societies, and that efforts to organize a new, interdisciplinary forum would be well rewarded. They were correct!

In May, 1973, the first meeting of the MRS was held at The Pennsylvania State University. This meeting, the forerunner of today's MRS symposia, was devoted to "Applications of Phase Transitions in Materials Science." By 1974 the Society had elected officers, and President Harry Gatos of the Massachusetts Institute of Technology presided over a symposium on "Defect Property Relationships in Solids" at Princeton in March, 1975.

Both the quality and vitality of today's MRS symposia attest to the soundness of the founders' vision, which perceived a large body of scientists and engineers who regarded their professional activity as "materials research" and who needed to communicate effectively with each other on a professional and a personal level.

### Who Belongs to the MRS?

The Materials Research Society holds membership open "to all persons professionally involved in materials science and engineering," in the words of its Constitution. Discipline or academic degree are not considered. The Society's membership includes chemists, physicists, metallurgists, ceramists and geologists, and mechanical, chemical, aeronautical, electrical and petroleum engineers—even some materials scientists! The Society has grown rapidly, and now counts its membership in excess of 2500.

The membership includes graduate and undergraduate science and engineering students. It includes members from throughout the Americas, Europe and the Far East. Europe is, in fact, second only to North America in the number of members it furnishes, and the Society has a Regional Affiliate on the Continent which offers meetings to supplement those in the United States. In addition, the Society has now instituted constitutional changes that make possible the formation of both student chapters and regional sections. This action, like a great deal of MRS activity, was taken in response to requests from the membership. Student chapters have formed on campuses, and the first MRS local section was formed during 1984 in the Research Triangle area of North Carolina.

The MRS is a young organization. It has successfully broken with tradition in the organization of technical meetings and publications. The Society is prepared to expand its role to include additional innovative mechanisms for the advancement of the

materials research profession and its practitioners. Your suggestions are most welcome.

### What Does The MRS Offer?

Most importantly, the Society sponsors technical meetings. Foremost among these is the Annual Meeting, traditionally held late each fall in Boston. Recent Annual Meetings have comprised nearly a score of symposia and short courses. Topics range from "Energy Beam-Solid Interactions and Transient Thermal Processing" through "Thin Films and Interfaces" and the "Scientific Basis for Nuclear Waste Management" to "Electron Microscopy of Materials." This year, the Society's largest annual meeting to date will feature nine short courses, seventeen separate symposia, and an equipment exhibit. Materials to be discussed range from polymers, composites and semiconductors to concrete and nuclear waste material. Applications range from recording media to transducers.

As the Materials Research Society has grown, the Boston Meeting has been supplemented by other, more specific conferences. Each spring a conference is held in the Western United States, at which recent symposia topics have included "Materials for Computer Displays and Printers" and "Better Ceramics Through Chemistry." During 1985, the Society will hold its Spring Meeting in San Francisco on April 15-18. This meeting too, has grown. It will include a total of nine symposia, roughly double the number that were included in the 1984 Spring Meeting.

The European conference, most recently held in June of this year, featured three technical symposia, a number of plenary sessions, and a round table discussion of materials' needs in industry.

Additionally, the MRS has co-sponsored meetings in which materials scientists are interested. For example, the Society recently helped sponsor a meeting in Stockholm, Sweden, on "Physical Metallurgy of Cast Iron." Also during 1984, the MRS sponsored "Ion Beam Modification of Materials" at Cornell University, Ithaca, New York.

In the area of publications, the Society publishes PROCEEDINGS arising from the Annual Meeting and other conferences. Many of these volumes have become standard reference materials in the profession. They are available to members at an attractive discount. This year, the Society has taken over the publishing task for its PROCEEDINGS series, and expects to offer future volumes to its membership at even more attractive rates. The MRS furnishes major editorial support to the journal *Materials Letters*, which members receive as part of their basic membership cost. The MRS's own BULLETIN is furnished to members six times a year, containing news of the organization and its meetings, of other technical meetings of interest to the membership, technical reviews and other information. This BULLETIN is the first issue of a new, expanded format that will contain more editorial features and better serve the needs of MRS members.

Through affiliation with the American Institute of Physics, MRS members are able to subscribe to a number of important journals at substantially reduced prices. These discounts are explained elsewhere in these pages.

### Awards

The Materials Research Society annually bestows the most prestigious recognition a materials scientist can receive from his or her peers, the Arthur Von Hippel Award. The prize is named for the emeritus professor of the Massachusetts Institute of Technology—who was also its first recipient—whose laboratory pioneered "molecular engineering." (Indeed, von Hippel coined the term.) Most particularly, however, the Award calls attention

to the fact that von Hippel's laboratory was an interdisciplinary collegium of scientists from various backgrounds. It was the model for subsequent materials laboratories, particularly industrial research laboratories, and its influence in breaking down the barriers that had separated the classical disciplines has been incalculable.

The recipients of the Von Hippel Award have been brilliant pioneers and innovators in numerous areas, but they have shared von Hippel's interdisciplinary, collaborative vision. They have included Sir Peter Hirsch, F.R.S, who is associated with the rapid advances contributed by the transmission electron microscope; Clarence Zener, who did the definitive work on internal friction in solids; James Mayer of Cornell, who pioneered the study of materials with ion beam techniques, and David Turnbull of Harvard, who has contributed widely to our understanding of nucleation phenomena and the amorphous state.

The MRS also recognizes the importance of student involvement in its meetings by granting several Student Awards each year.

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*The society's focus:  
Topical, interdisciplinary  
Meetings on important subjects*

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These awards, given to students whose contributions to MRS symposia are judged to be outstanding, enable greater student participation in MRS meetings.

### Organization

The MRS organization is uncluttered. The officers are assisted by a Council of fifteen members who are chosen by election to guide and counsel the Society. This group, known collectively as the Executive Council, directs the activities of the Society through the establishment of working committees, which focus their activities under guidelines set down by the Council. The entire membership of the MRS Council is prepared to act on your behalf to recommend symposium topics and organizers, to support the establishment of new meetings, and to convey your suggestions and comments on any topic to the entire Council.

In addition to the officers and Council, the MRS is served by an executive director and staff. John B. Ballance, executive director, is the appropriate point of contact for inquiries concerning membership and publications of the MRS.

### Welcome

To those of you who are attending your first MRS meeting, welcome. We believe you will find it to be among the most useful and productive you have attended. We think you will be challenged by the technical content, and by the professionals from outside your immediate area who nevertheless share your fascination with materials and their applications. We know of no interdisciplinary meeting for materials scientists and engineers of the size and scope of ours.

To those who have attended before, welcome back. We are proud that we serve a demanding, critical membership. We believe you will benefit from the many new services we are offering in 1984. We will continue to work hard to earn your participation.

And to those of you who can't attend this meeting: Remember our conference coming in April in San Francisco. We're doing what we can to bring together materials professionals all over the world.