

Organization

The MRS Organization is uncluttered. The officers are assisted by a Council of fifteen members that 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 confine their activities to the 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.

JOHN B. BALLANCE
Materials Research Society
9800 McKnight Road, Suite 327
Pittsburgh, PA 15237
(412) 367-3003

MATERIALS RESEARCH SOCIETY

The
Interdisciplinary
Organization
For
Materials
Scientists
And Engineers

An Introduction

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.

Its meetings 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 unfixed. 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 is well expressed in the following excerpt from the first MRS Newsletter.

Good Grief! Not Another Society!

Well might Charlie Brown explode at first exposure. But here is Linus' discerning reply.

The Materials Research Society is needed because there is already a large, clearly identified group of scientists and engineers who regard their professional activity as "Materials Research," and they need to communicate effectively with each other at a personal level. The Materials Research Society is also needed for the thousands of students who are being trained in a "discipline" with that label.

Many of the readers of this newsletter may have forgotten, the youngest ones may not even have known (and some of the "oldtimers" would perhaps just as soon forget!) the fact that materials science and engineering was and remains the prototype of major interdisciplinary activities within the whole spectrum of the scientific enterprise. The question could then be asked: What are the tangible results of the great flurry of activity on the part of thousands of scientists and engineers and a substantial investment of federal funds? We would hope that part of the reply could be, that out of all of this there appeared a new "community"—that group of engineers and scientists who perceive themselves professionally as "materials scientists" or "materials researchers."

The Materials Research Society is an essential communications vehicle for this community. Irrevocably now, there is launched all the apparatus and paraphernalia for a new subdivision of science and engineering. Funding agencies and industrial research laboratories have created new divisions of materials research, or science, or whatever. A half dozen new journals are already well established. Students are emerging from dozens of materials science and/or engineering departments in our universities. The *gemeinschaft* has been around for years; the *gesellschaft* has been overdue.

Rustum Roy
Penn State University
January, 1974

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 membership includes graduate and undergraduate science and engineering students. It includes members from throughout the Americas, Europe and the Far East.

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, held each November 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." Materials 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." The European conference, most recently on "Laser-Solid Interactions and Transient Thermal Processing of Materials," has been held in May.

Additionally, the MRS has co-sponsored meetings in which materials scientists are interested. For example, the Society recently helped sponsor a meeting in Crete, Greece, on "Phase Transformations in Solids."

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. It 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. Through affiliation with the American Institute of Physics, MRS members are able to subscribe to a number of important journals at substantially reduced prices.

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