
MRS Responds to M

Plans for Communications

Communications on the MSE Study

Effective immediately, the Materials Research Society solicits papers for publication in **Communications on the MSE Study** according to the following criteria:

1. A paper should be substantive and address issues pertinent to one of the five panels of the Study (see the following page). Possible topic areas for submitted papers would include identification of problems and proposed solutions, areas of consensus or contention, neglected or over-emphasized aspects of MSE, and policies affecting MSE positively or negatively. To the extent possible the content of the paper should be quantitative and supporting documentation should be referenced.
2. A paper must be prepared in camera-ready form in exactly the format described in the instructions on the following pages. A completed and signed copy of the Information and Release Form, also on the following pages, must accompany each submission.
3. The paper must be received at MRS headquarters by the Deadline Date: **September 8, 1986**.

The Materials Research Society will submit the complete, considered responses of its constituency to the MSE Study. All papers which meet the criteria above will be published by MRS in **Communications on the MSE Study**. Attendance at the MRS Fall Meeting is not a requirement for publication.

Forum on the MSE Study

This Forum, to be held during the 1986 MRS Fall Meeting, will be chaired by B.R. Appleton, Oak Ridge National Laboratory. P. Chaudhari, IBM Corporation, will serve as the Study Representative. The Forum will permit each of five Study panels to describe its findings to date to attendees. In addition, contributed papers selected from the communications submitted for publication in the book described above will highlight the issues and the range of topics raised from within the MRS constituency. Both the panel reports and the contributed papers will be presented for the purpose of stimulating comments from the audience.

Because only a subset of the communications submitted for publication in the book can be chosen for presentation at the meeting, those picked will be representative and cover the range of issues addressed. Only those papers for which the author clearly indicates availability for personal presentation will be considered for this Forum. Authors whose papers have been chosen for presentation will be notified by October 15. Other authors will not be notified.

Five Panels to Carry Out MSE Study Goals

To help realize its stated goals the MSE Study is formally divided into five panels as described below. The final and official lists of topics to be considered by each panel were not available at the time of this announcement. When these become available, they will be published in the MRS BULLETIN. Based on brief, preliminary descriptions of the five panels supplied by the MSE Study co-chairs, the Materials Research Society has created a more detailed description of each panel which is neither official nor exhaustive. This description is provided as a stimulus to evoke focused responses from the MRS constituency. Papers written for the **Communications on the MSE Study** should address topics pertinent to a particular panel using the MRS descriptions below only as rough guidelines.

MSE Study Invitation

Book and Fall Meeting Forum

MSE Study Goals

PANEL 1: Materials Research Opportunities and Needs in MSE

This panel will examine accomplishments and future directions of materials research. They will conduct a broadly based survey to identify research opportunities and technological needs in the materials area. They will be searching for the technologies which, by new processing techniques or new understanding developed from advanced characterization techniques, will be capable of creating materials with specialized properties. Many of the ideas on which these technologies will be founded are discussed at meetings of the Materials Research Society. It is anticipated that a systematic inquiry of government (Department of Defense, NASA, Department of Energy, etc.) and private sector (automobile, computer, consumer electronics, aerospace, construction industries, etc.) users will be made to determine their needs. These needs may be either for currently unavailable materials properties, or for available materials produced by more economical processes.

PANEL 2: Exploitation of MSE and Technology for National Welfare

The United States already has a formidable materials research capability. However much of that research occurs at institutions such as universities, materials research laboratories or national laboratories which are not directly affiliated with the manufacturing industries. Even in large manufacturing corporations with their own research facilities there is often a separation between laboratory and manufacturing personnel. This panel will explore how the research community learns of technological needs, how significant results are implemented technologically, and how the implementation of new research results in products can be accomplished most effectively. Both political and institutional constraints on technology transfer will be studied. In addition, the effect of resource allocation (e.g., defense/education/ consumer goods) on strategies of optimizing the impact of materials science and engineering on the national welfare will be considered.

PANEL 3: International Cooperation and Competition

Countries other than the United States have considerable materials research efforts and are internationally significant manufacturers of products resulting from this research. This panel will examine the quality and the ability of international contributors in materials research and engineering. In addition, this panel will examine approaches taken by such countries to associate research with manufacturing. Mechanistic differences and a measure of relative effectiveness between systems of technology transfer within other countries compared with the United States will be sought. The influence of the political environments in other countries on this process will be considered. Areas for international cooperation and steps needed to improve the competitiveness of U.S. industries will be identified.

PANEL 4: Research Resources in Materials Science and Engineering

This panel will quantitatively assess the resources available now plus those needed in the future for materials research. The distribution of human resources among disciplines, materials areas, and institutions will be determined. The distribution of facilities, large and small, for materials research in these same categories will be made. An attempt to compare the near-term needs as identified by Panel 1 with the available resources will be done to reveal any discrepancies, and develop consequent guidance for remedial action.

PANEL 5: Education in Materials Science and Engineering

This panel will assess human resources in materials education both in traditional materials departments and in other science and engineering disciplines. Continuing education and other vehicles used to increase the lifetime satisfaction and productivity of materials professionals as well as technical workers in materials science and engineering will be considered. Particular emphasis will be placed on needs, concerns and opportunities for increasing interdisciplinary education and research. The effectiveness of the current education system for producing interdisciplinary materials scientists and engineers will be examined. This panel will also consider how the predicted trends mesh with the needs of industry.