The MRS Short Course Program: Past, Present, and Future

As we enter 1990, the MRS Short Course Program is very different from what it was in the fall of 1982 when the first short course was offered at an MRS meeting. That first short course, developed by L. Ralph Dawson of Sandia National Laboratories, was on "Liquid Phase Epitaxy Techniques." Since then, under the guidance of three enthusiastic and dedicated Continuing Education Committee Chairs, L. Ralph Dawson, Alton D. Romig Jr., and Carol M. Jantzen, the Short Course Program has developed into a broadly based and important service-oriented educational program for MRS members and the materials science community. The program's primary goal is to provide high-quality, relevant topical courses which complement and enhance the technical programs at MRS meetings.

More than 50 courses have been developed over the past few years by the Continuing Education Committee. Committee members with different areas of technical expertise, together with the short course manager, are responsible for guiding this controlled growth. Care is taken to ensure that each new course is distinctly different from existing MRS courses. A multidisciplinary program continues to evolve with the development of new topical courses of timely interest to the materials science community, such as those on high-temperature superconductivity and diamond films. At the same time, core courses on materials characterization and on the preparation and fabrication of materials provide a balanced and innovative educational program. Seven of the 18 courses being offered at the 1990 MRS Spring Meeting are new and illustrate the diversity of the program:

- Compound Semiconductor Epitaxy and Processing,
- Polysilicon Thin Films and Interfaces—A Submicron VLSI Manufacturing Perspective,
- Materials Processing in Thermal Plasmas,
- Microwave Interactions with Dielectric Materials,
- Ion Source Fundamentals,
- Ceramic Packaging of Integrated Circuits: Designs, Processes and Applications, and
- Materials Processing by Vapor Phase Techniques.

Some general statistics may be of interest: short course registrants account for between 11 and 15% of the total number of MRS meeting attendees; over 70% of the total number of course registrants at MRS meetings have advanced degrees; between 57 and 67% of the short course registrants also register for the MRS meeting. These data strongly indicate that the MRS Short Course Program is meeting its primary goal of presenting courses that complement MRS symposia.

The number of applications for student scholarships at each meeting is steadily increasing, indicating that the program is meeting another goal—to provide an educational resource to universities by assisting undergraduate and graduate students who are interested in entering the materials science field.

The MRS On-Site Short Course Program is the vehicle through which MRS courses are presented at the facilities of industrial and government organizations, or at the meetings of other technical groups or societies. This program is becoming increasingly popular as industry recognizes the value and benefits of a high-quality, cost-effective, efficient form of education for persons not normally able to travel to an MRS meeting. The program provides for tailoring the technical contents of courses to the needs of the attendees.

The Materials Research Society has members who are dedicated educators and who can offer a real service to materials science by becoming more involved with the grassroots of materials science education. If you are interested in getting involved, please contact Carol M. Jantzen, chair of the MRS Continuing Education Committee, (803) 725-2374.

Vivienne Harwood Mattox
MRS Short Course Manager

Columbia Shuttle Mission Carries Special Significance for Materials Scientists and MRS

Materials scientists have several reasons to take special note of the current mission of NASA's space shuttle Columbia. The mission, presently scheduled for January to deploy the Hughes Syncom-IV communications satellite, is also to rescue from its precarious orbit a 5 1/2-year old scientific satellite with 56 microgravity experiments aboard. At the same time Columbia astronauts are carrying the banner of the Materials Research Society.

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The MRS banner was included in Columbia's "Official Flight Kit" at the request of NASA mission specialist Bonnie Dunbar, a member of the shuttle crew. The kit's purpose is to fly ceremonial or presentational items such as state or national flags.

Dunbar, a ceramics engineer and aerospace technologist, was the plenary speaker for the 1987 MRS Spring Meeting. In November 1989 she asked MRS President Robert Chang if the MRS banner could be made available for the Columbia flight. MRS sent Dunbar the banner "to carry aloft for us in recognition of the crucial role that materials play in our lives," said Chang. "As both a materials scientist and an astronaut, Bonnie must have a very special appreciation of the importance of materials."

The scientific satellite Columbia is to retrieve is NASA's Long Duration Exposure Facility (LDEF), placed in orbit by the shuttle Challenger in April 1984. The LDEF's 56 experiments involve, among others, the effects of atomic oxygen and solar radiation on materials intended for space station components and other space hardware. Its retrieval, originally scheduled for 1986, was delayed by the Challenger disaster. This year, however, it became clear that if NASA didn't take steps to save it, the satellite would be drawn into the Earth's atmosphere and disintegrate upon reentry.

MRS counts among its nearly 10,000 members many who are involved directly in the research and development of materials for space applications, and has sponsored symposia on this topic and many others. MRS works with other materials societies in the United States and other nations to promote, through scientific meetings and publications, the multidisciplinary sharing of research on optical fibers, superconductors, composites, polymers, and many other advanced materials.

"Advances in space materials technology," Chang notes, "derive from many fields—physics, ceramics, chemistry, metallurgy, to name a few. Microgravity experiments depend for their success on interdisciplinary teamwork, something NASA and MRS both are known for. That kind of teamwork is what we're trying to promote throughout the materials sciences."