

Technical Journals on Materials Science

Twenty years ago, four new technical journals covering materials science began publication within seven months of each other. The birth of so many publications on a single topic in such a short time surely heralded the realization within the technical community that materials science had converged as a separate scientific discipline from the fringes of many related fields of science and engineering.

First to appear was the **Journal of Materials Science**, published by Chapman and Hall in London, with the first issue dated February 1966. The first issue of the **Journal of Materials**, published by the American Society of Testing and Materials, appeared in March 1966. **Materials Science and Engineering**, published by the Elsevier Publishing Co. of Amsterdam, appeared in May 1966. Volume 1, Number 1 of Pergamon Press' **Materials Research Bulletin** was first published in September 1966.

At that time, editors of **Journal of Materials Science** perceived that there was a "gap in the literature, and it is hindering the development of materials science for it to go unfilled." The journal's stated purpose was to "promote an inter—disciplinary approach to the study of the relationships between the structure properties and uses of materials."

They cited three reasons for the new journal:

- (1) Papers on materials were scattered among a variety of journals.
- (2) There was no "self—evident" place for publication of research on composite materials, conventional materials in unconventional forms (fine powders, thin films, supercooled metastable alloys, devitrified glasses), and materials on which unusual demands are made (plasma containers, laser crystals, plates for thermionic generators or fuel cells).
- (3) There was a need for more papers on all materials to be presented in a way understandable by specialists working on other materials.

The chairman of its initial editorial board was R.W. Cahn* of the University of Sussex.

The premiere issue of **Journal of Materials** was edited by A.Q. Mowbray, with E.C. Shuman as the chairman of the ASTM Committee on Papers and Publications and G.A. Wilson, director of publications. It contained no introductory statement of purpose.

Materials Science and Engineering was intended to provide "an international medium for the publication of theoretical and experimental studies and reviews of properties of materials, related both to their structure and engineering application." Showing the breadth of its expectations, the publication listed a gamut of

materials of interest: crystalline and non-crystalline solids, organic and inorganic polymers, glasses, composite materials, liquids, vapors, plasmas.

"Particular importance will be placed on studies of how useful properties may be developed through control of the arrangement of molecules, atoms and smaller particles and of the forces among them."

"**Materials Science and Engineering** has been founded in the belief that in the future development of materials technology, much depends upon a deeper understanding of the structure and synthesis of materials, and of their engineering application," Robert Maddin, editor-in-chief, wrote in his first editorial. "The relationship between the micro- and macro-structure of materials, and their physical properties, will need increasing consideration to allow optimum application of the material in question. For this, the engineer and designer require a broader knowledge of the structure of materials and methods for their synthesis, so that they are able to have more flexibility of mind in the utilization of new materials, and, even, in their design. Similarly, the materials scientist must be conscious that the properties of their own material are not entirely inherent or peculiar to that kind of material, but depend also upon fabrication methods, environment, etc."

The **Materials Research Bulletin** aimed at being "an international journal reporting research on crystal growth and materials preparation and characterization."

In their first editorial comments, joint editors-in-chief Heinze K. Henisch and Rustum Roy* of the Penn State Materials Research Laboratory wrote that the new journal would "depart from established practice in several major ways."

- (1) To shorten the time taken to publish articles, the journal emphasized the speed of photographic reproduction and offset printing over the then typical typesetting.
- (2) Authors could submit articles either for conventional anonymous refereeing or directly to any associate editor of their choice, who could approve publication through a "Rapid Handling Procedure."
- (3) Finally, they hoped to "restore an element of controversy to the scientific literature."

"We should all recognize unequivocally that there is room in scientific inquiry for legitimate differences of opinion. At least some of the discussions which were ordinarily carried on in private between the referee (protected by anonymity) and the author (all too lacking in similar protection) deserve a wider audience.... We invite 'Letters to the Editors', not in the form of minor research reports in the conventional

way, but concerned with comments, proposals, evaluations and expressions of criticism, which was the original function of this feature."

Two trade journals preceded the professional journals—one by 21 years—in using "materials" in their titles.

Materials Engineering magazine began its life in 1929 as **Metals & Alloys**. The name was changed to **Materials & Methods** (short for **Engineering Materials & Processing Methods**) in 1945 and to **Materials in Design Engineering** in 1957. The word "Design" was deleted in 1967 (Volume 65).

Materials Evaluation dates back to the 1942 birth of **Industrial Radiography**, the journal of the American Industrial Radium & X-Ray Society. Within six years, the society changed its name to the Society for Nondestructive Testing and its journal to **Nondestructive Testing**. The Society's name has stayed the same; the name of the magazine changed once again, to **Materials Evaluation** effective January 1964.

In his initial editorial, **Materials Science and Engineering** editor Maddin wrote: "The mutual exchange of purpose and experience is still, largely, in its infancy. Undoubtedly the trend will grow."

That these four journals and more now flourish describing advances in materials research bears out the early optimism.

M. ROSS

*R.W. Cahn and Rustum Roy are currently principal editors of **Journal of Materials Research**.

Just Published by MRS
**FRONTIERS IN
MATERIALS
EDUCATION**

Volume 66 of
Materials Research Society
Symposia Proceedings
by L.W. Hobbs and G.L. Liedl

**MRS Members \$29
US Nonmembers \$36
Foreign Nonmembers \$43**

Order from:
Materials Research Society
Publication Department
9800 McKnight Road
Suite 327
Pittsburgh, PA 15237
(412) 367-3012

Prepayment required.
Mastercard and VISA accepted.