

Division of Fuel Chemistry Preprints— Advantages and Problems*

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The Division of Fuel Chemistry began preprinting of papers in the Fall of 1957 after much discussion of the benefits to be derived. Many advantages were cited, but it was only after some two to three years had elapsed before they, in the judgement of the members, outweighed the one principal disadvantage, namely, cost. Needless to say, cost of preprinting received considerable scrutiny since the Division was one of the smallest divisions of the national society and in view of the fact that only two other divisions were preprinting papers at that time. These were the Paint and Varnish Division and the Petroleum Division, the latter division being one of the largest.

Before discussing ways and means which have been used for meeting the costs of preprinting, let us review the reasons cited in favor of preprinting.

Advantages of Preprinting.—Preparation of a written paper results in a clearer and more concise statement of the objectives, nature and scope, research procedure, data and results, and conclusions, than otherwise possible. A written paper also provides the basis for a more effective oral presentation; this is considered particularly important in view of the increasing pressure to improve both the quality and content of papers presented at the national society meetings. Limited time available for attending meetings, together with increased costs of travel, are tangible causes for the ever increasing desire by those attending to have the best possible oral presentation of the highest quality papers. Mere reduction to writing by the author of his paper logically requires that he give more than passing thought to its contents and its organization.

This desire by the Division to improve the quality and presentation of papers presented at its meetings was also reflected in the establishment of the Bituminous Coal Research, Inc., Award in 1956. This semi-annual award is made in recognition of the best paper presented at the annual meetings pertaining to coal and derived products as judged on the basis of scientific content and quality of presentation.

Preparation of preprints necessitates the submission of complete manuscripts in time for the Division to review the paper and judge its suitability for inclusion on its program. This review provides the means for rejection of unsuitable papers and a general upgrading of the quality of all papers presented. Brief abstracts do not always reflect the true nature and content of the complete paper. Suggested revisions of the review committee for the general improvement of the paper are usually accepted by the author.

Preparation of preprints allows the distribution of copies to all members of the Division, whether they are able to attend the Division meeting or not. This is a significant factor in that only 25 to 30 per cent of the members of the Division attend any given meeting.

Members attending the Division meetings may review papers of interest prior to attendance, and thus are better prepared to participate in discussions following the oral presentation. This discussion is often the more important part of the program. In fact, there is considerable support in some circles that time on the formal program should be allotted only for discussion.

Attendees at the meetings do not need to be as concerned about taking notes during the presentation of the paper. Sometimes this is a problem, especially when the lights are dimmed for the presentation of lantern slides. With copies of the papers available as preprints, full attention of the attendee can be devoted to the oral presentation of the paper.

Preparation of preprints also means that more material may be included in the written paper than can be presented in the allotted time on the program. Only highlights of the paper need to be included in the oral presentation; reference should be made to the supporting data as included in the written paper. Details regarding research procedures, apparatus, and equipment do not necessarily need to be presented orally. Only the main points and essentials concerning the objectives, nature and scope of the work, data, results, and conclusions need to be presented orally.

Preparation of preprints also provides a place in the

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literature for all the papers presented before the Division. This is an important point in that only some three-fifths of the papers presented before the Division are ultimately published, as determined by a search of *Chemical Abstracts* for the three-year period following presentation at the Division meeting (unpublished survey by W. T. Beery). Copies of the papers not subsequently published thus are made available for future reference.

Preparation of preprints also provides for more rapid preparation of the manuscript in form for subsequent publication as desired in a regular technical journal. If the manuscript is properly prepared, only minor revisions in the manuscript are necessary before it may be submitted for consideration.

Disadvantages and Problems.—As indicated above, the principal disadvantage in preparation of preprints is the cost involved. Nearly every reason for not preprinting is related to cost in one way or another, with one major exception. There is a time lag between the submission of the abstract and the actual presentation at the Division meeting. This results from the time required for preparation of the manuscript in complete form, for acceptance by the review committee, for editing of the manuscript for style, printing of the preprints and, finally, distribution to the membership in advance of the meeting. This amounts to a delay of some four to six months between completion of the research and the actual presentation at the meeting. To some researchers, this is a major argument against the preparation of preprints.

Other disadvantages may be listed: (1) Manuscript copy must be prepared to conform to a certain style, given size of paper, given size drawings, etc. (2) Review for acceptance necessitates the time of a qualified review committee. (3) Editorial time by someone is needed to check style and format. (4) Added time of the Division secretary is needed to handle mailing and distribution. (5) An economical procedure must be developed for the actual printing. (6) An increase in dues usually is required which results in a decrease of the total membership of the Division.

Ways and Means for Underwriting Preprinting Costs.—The actual cost of printing for the last five years has varied from \$0.85 per volume to \$1.25. With two to four volumes of preprints being prepared per year and with membership dues being \$3.00 per year, it is easy to discern that additional sources of income have become necessary.

This was recognized at the outset and a surcharge has been applied on all manuscripts in excess of a given number of pages. This charge now is \$10.00 for each two pages, or fraction thereof, in excess of six pages. This charge has served two very useful functions: (1) It provided an added income for underwriting the cost of preprints. (2) It encourages the author to eliminate extraneous or superfluous material from his manuscript.

Industrial subscriptions have been solicited for the preprints at a nominal subscription rate. This has, over the years, provided a modest but significant portion of the cost of preprinting.

In addition, extra copies have been prepared for sale at the time of the Division meetings. This also has been a modest source of funds in proportion to the interest and attendance at the various meetings. In a few cases,

this would have been rather substantial had there been extra copies for sale. This overrun of copies, however, is controlled by a regulation of the national society which sets the maximum allowable number of preprints at 130 per cent of the membership of the Division.

Most recently, due to the increased interest in the subject field, papers presented before the Fuel Cell Symposium have been published in book form and copyrighted by the Division with the royalty from the sale of the book accruing to the Division. Fortunately, this royalty has been fairly substantial; otherwise the Division probably would be operating in the red.

Thus, by one means or another, the Fuel Division has been successful during the past five years in making ends meet on its preprinting program. It is generally agreed that preprinting has been a major factor in keeping the Division alive. This takes on added meaning when one considers changes which have occurred during the last decade in the amount and nature of research normally reported before the Division. Up until about 1955, the Division historically had been centered around research on coal and derived products with papers originating from a limited number of laboratories. However, as a result of several factors, the amount of work being done on coal research declined markedly at about 1955. Also this was the time that the Combustion Institute was organized on a sound footing. Logically, the Executive Committee of the Division instituted an active program to increase interest within the Division in such subjects as high energy fuels, fuel cells, shock tube research, and radioisotopes.

Unsolved Problems.—There are several unsolved problems facing the Division, particularly the problem of subsequent publication of papers in the permanent literature and the development of an equitable procedure for financing the cost of preprints.

Does appearance of a paper in preprint form preclude it from being published later in a recognized technical journal?

Can preprints be regularly indexed by *Chemical Abstracts*?

Should the major portion of the cost of preprinting be included with the regular research costs and borne by the sponsor?

Should there be a single journal for publishing papers presented before the Division, say a *Journal of Fuel Chemistry*, analogous to the *Journal of Organic Chemistry*, *Journal of Physical Chemistry*, *Journal of Agricultural and Food Chemistry*?

How can papers which logically fall in the realm of Fuel Chemistry be channelled into the Division rather than to another?

How can other divisions be alerted to papers which have been rejected as unsuitable?

How can copies of preprints be made available to libraries and other repositories?

Conclusion.—With the ever increasing amount of technical literature to be covered by the individual research worker, and the ever increasing cost of doing research, every way possible should be utilized to reduce this demand on a researcher's time and to minimize the duplication of effort through ignorance of prior research as reported only at annual meetings of the Society.