

Symposium on Retrieval of Polymer Information

Introductory Remarks[†]

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This symposium on the retrieval of polymer information was organized to help acquaint both polymer chemists and information scientists with some of the polymer retrieval systems created by secondary services and industrial companies, and with some of the problems specifically peculiar to this field. Accordingly, the symposium was cosponsored by two ACS divisions in addition to the Division of Chemical Information: the Division of Polymer Chemistry and the Division of Organic Coatings and Plastics Chemistry.

The last symposium at an ACS National Meeting dealing with polymers and with information retrieval was organized ten years ago.¹ The topic of that symposium was a specialized one, that of polymer nomenclature. While identification of the chemical structure of a polymer is obviously essential, equally important are the data relating to the properties of the polymer, since all industrial applications depend on the knowledge of the latter.

The volume of research activity in the polymer field continues to be tremendous. Chemical Abstracts Service publishes 35 000–40 000 abstracts per year in the Macromolecular Chemistry Sections alone, and that does not include many papers and patents on the nonchemical treatment of plastics and fibers, or on techniques of a basically engineering interest. Thus, there are a lot of chemists engaged in searching, collecting, and correlating information on polymers, but papers are seldom presented on the polymer-retrieval topic.

It has been pointed out to me that the topic of this symposium was rather broad and that perhaps papers should have focused on a narrower topic such as polymer information retrieval from on-line databases, polymer indexing systems, or polymer patent retrieval problems. It was decided, however, to allow this symposium—perhaps a first of a series of related symposia—to be broad enough to allow participants to gain a better perspective on what was going on in this field.

Thus, this collection of symposium papers consists of contributions from many different sources: from a secondary service which organizes polymer information and provides an easier access to it, from a documentation center catering to

major German and other foreign chemical companies, from a plastics evaluation center, and from an individual searcher, as well as papers from a couple of large chemical companies which both produce and use polymer information and have to organize it for their specific needs. The seventh paper on polymer references in the patent literature was not part of the symposium proper, but was presented on the same day and logically belongs to this collection.

Several interesting observations can be made from reading these papers. It is extremely important to have an easy and reliable access to the numerical data (preferably evaluated and verified) as well as to a variety of properties, chemical, physical, electrical, mechanical, spectral, etc. The proper identification of polymers which are being reported under a host of various names, trivial, systematic, trade, acronyms, abbreviations, etc., is a continuing problem in the retrieval of information. Interrelated with these problems are those of structural descriptions which are given in a variety of ways and which are often vague and entail a large degree of uncertainty. Such situations have led to the development of special polymer nomenclature and indexing schemes. There are numerous interdisciplinary interfaces between polymers and medicine or polymers and engineering which further complicate the searching and correlation of information. Polymer science and technology should be treated as a major class by itself in a classification system which would be useful to polymer scientists, rather than being scattered under the broader traditional fields of organic chemistry, applied science, or technology. Retrieval of polymer information from patents is a challenge in itself mainly because of the specialized patent language and the variety of searcher requirements. It is hoped that the publication of these symposium papers will stimulate and encourage other polymer chemists and information scientists to publish about their experience and research in the field of polymer information, thereby improving communication among fellow scientists.

LITERATURE CITED

- (1) Symposium on Polymer Nomenclature before the Division of Polymer Chemistry, 156th National Meeting of the American Chemical Society, Atlantic City, N.J., Sept 11, 1968; *Polym. Prep., Am. Chem. Soc. Div. Polym. Chem.*, **9**, 1341–1367 (1968); *J. Chem. Doc.*, **9**, 230–251 (1969).

[†] Presented before the Division of Chemical Information, 176th National Meeting of the American Chemical Society, Miami Beach, Fla., Sept 13, 1978.