

# Sixty-first Annual Meeting Papers

*Symposium on*

## MATERIALS RESEARCH FRONTIERS



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# SYMPOSIUM ON MATERIALS RESEARCH FRONTIERS

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Presented at the  
SIXTY-FIRST ANNUAL MEETING  
AMERICAN SOCIETY FOR TESTING MATERIALS  
Boston, Mass., June 25, 1958



Reg. U. S. Pat. Off.

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## FOREWORD

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Tailoring materials to fit specific needs is the keynote of this challenging and thought-provoking Symposium on Materials Research Frontiers. Major materials categories—metals, nuclear materials, polymers, ceramics, and fuels—were discussed in these papers.

The papers in this symposium were presented at two sessions June 25, 1958, during the Sixty-first Annual Meeting of the Society at Boston, Mass. The symposium was developed under the joint auspices of the ASTM Administrative Committee on Research and the New England District Council Committee.

The papers "Recent Advances in Polymer Research," by Herman Mark, Polytechnic Institute of Brooklyn, "Molecular Engineering," by Arthur von Hippel, Massachusetts Institute of Technology, and "Instruments in Materials Research," by Bruce H. Billings, Baird-Atomic, Inc., have not been included in this symposium volume. The bulk of the paper by Mr. Billings was presented at Brussels, Belgium, in May, 1958, and is to be published in book form by Pergamon Press. The paper by Mr. von Hippel covered the need for designing materials to meet specific needs, sometimes referred to as "molecular engineering." His main points had appeared in *Science*, Vol. 123, No. 3191, p. 315, Feb. 24, 1956. Readers are referred to a forthcoming book by Professor von Hippel entitled "Molecular Science and Molecular Engineering," Technology Press, John Wiley and Sons, New York, N. Y.

Mr. Walter J. Smith, of Arthur D. Little, Inc., and Mr. Miles N. Clair, of The Thompson & Lichtner Co., Inc., acted as Symposium Chairmen. ASTM President R. T. Kropf, Belding Heminway Co., Inc., and Mr. Smith presided over the morning session. Mr. K. B. Woods, School of Civil Engineering, Purdue University, and Mr. A. G. H. Dietz, Massachusetts Institute of Technology, presided over the afternoon session.

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NOTE.—The Society is not responsible, as a body, for the statements  
and opinions advanced in this publication.

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