Sixty-fourth Annual Meeting Papers

Symposium on

EXTENSION OF SENSITIVITY FOR DETERMINING VARIOUS CONSTITUENTS IN METALS



Published by the
AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 Race St., Philadelphia 3, Pa.

ASTM Special Technical Publication No. 308

SYMPOSIUM ON EXTENSION OF SENSITIVITY FOR DETERMINING VARIOUS CONSTITUENTS IN METALS

Presented at the SIXTY-FOURTH ANNUAL MEETING AMERICAN SOCIETY FOR TESTING AND MATERIALS Atlantic City, N. J., June 28, 1961



ASTM Special Technical Publication No. 308

Price \$3.00; to Members \$2.40

Published by the
AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 Race St., Philadelphia 3, Pa.

©BY AMERICAN SOCIETY FOR TESTING AND MATERIALS

Library of Congress Catalog Card Number: 62-9417

FOREWORD

In order to review the progress in techniques for determination of trace constituents in metals, ASTM Committees E-2 on Emission Spectroscopy and E-3 on Chemical Analysis of Metals sponsored this Symposium on Extension of Sensitivity for Determining Various Constituents in Metals. The papers in the symposium were presented on June 28, 1961, during the Twentieth and Twenty-fifth Sessions of the Sixty-fourth Annual Meeting of the Society at Atlantic City, N. J.

The paper "Separations in Analysis" by J. L. Hague which was presented during the symposium has not been included in this symposium volume.

Messrs. L. M. Melnick, U. S. Steel Corp., and N. E. Gordon, Jr., Westinghouse Electric Corp., served as Symposium Co-chairmen and presided over the morning and afternoon sessions respectively.

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

CONTENTS

Introduction—N. E. Gordon, Jr.	AGE 1
Some Recently Developed Electroanalytical Techniques for Determination of Traces of Metals—Louis Meites Discussion	3
Radioactivation Analysis—Specific for Trace Element Determinations—G. W. Leddicotte	
Ultratrace Emission Spectroscopy—George H. Morrison and R. L. Rupp Discussion	
Use of the Electron Probe to Measure Low Average But High Local Concentrations—L. S. Birks and R. E. Seehold	53
Extension of Sensitivity in Analysis of Impurities in Solids by Mass Spectrometry— C. M. Stevens Discussion	58

THIS PUBLICATION is one of many issued by the American Society for Testing Materials in connection with its work of promoting knowledge of the properties of materials and developing standard specifications and tests for materials. Much of the data result from the voluntary contributions of many of the country's leading technical authorities from industry, scientific agencies, and government.

Over the years the Society has published many technical symposiums, reports, and special books. These may consist of a series of technical papers, reports by the ASTM technical committees, or compilations of data developed in special Society groups with many organizations cooperating. A list of ASTM publications and information on the work of the Society will be furnished on request.

