COMPUTERIZED LABORATORY SYSTEMS

A symposium presented at the Pittsburgh Conference AMERICAN SOCIETY FOR TESTING AND MATERIALS Cleveland, Ohio, 4-5 March 1974

ASTM SPECIAL TECHNICAL PUBLICATION 578 J. W. Frazer and F. W. Kunz, editors

List price $24.00 04-578000-34

AMERICAN SOCIETY FOR TESTING AND MATERIALS 1916 Race Street, Philadelphia, Pa. 19103
NOTE
The Society is not responsible, as a body, for the statements and opinions advanced in this publication.
Foreword

The Symposium on Computerized Laboratory Systems was presented at the 25th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy held in Cleveland, Ohio, 5 March, 1974. The symposium was sponsored by Committee E-31 on Computerized Laboratory Systems of the American Society for Testing and Materials. This symposium was primarily a result of the efforts of the symposium organizers F. W. Kunz, Ford Motor Company, and J. W. Frazer, Lawrence Livermore Laboratories. They also served as symposium co-chairmen and editors of the publication.
Related
ASTM Publications

Sampling, Standards and Homogeneity, STP 540 (1973), $12.50, 04-540000-34

Manual on Quality Control of Materials, STP 15C (1951), $3.00, 04-015030-34
A Note of Appreciation to Reviewers

This publication is made possible by the authors and, also, the unheralded efforts of the reviewers. This body of technical experts whose dedication, sacrifice of time and effort, and collective wisdom in reviewing the papers must be acknowledged. The quality level of ASTM publications is a direct function of their respected opinions. On behalf of ASTM we acknowledge with appreciation their contribution.

ASTM Committee on Publications
Editorial Staff

Jane B. Wheeler, Managing Editor
Helen M. Hoersch, Associate Editor
Charlotte E. Wilson, Senior Assistant Editor
Ellen J. McGlinchey, Assistant Editor
Contents

Introduction 1

Automation Trends—J. W. FRAZER 3


Documentation of Computerized Laboratory Systems: System Definition at the Management Level—F. W. KUNZ, ERWIN EICHEN, AND W. SCHISA 77

Development of a Computerized Laboratory System—E. W. LOTHROP, JR., AND S. S. STARR 93


A Feasibility Study and Functional Design for the Computerized Automation of the Central Regional Laboratory EPA Region V, Chicago—J. W. FRAZER AND G. W. BARTON, JR. 152

Summary 257

Index 259