

Wilson and Wilson's
COMPREHENSIVE ANALYTICAL CHEMISTRY

Edited by
G. SVEHLA, PH.D., D.SC., F.R.S.C.

VOLUME XVII

Gas and Liquid Analyzers

COMPREHENSIVE ANALYTICAL CHEMISTRY

Edited by

G. SVEHLA, PH.D., D.SC., F.R.S.C.

*Reader in Analytical Chemistry
The Queen's University of Belfast*

VOLUME XVII

Gas and Liquid Analyzers

by Jaroslav Váňa

*Research Institute for Organic Syntheses
Pardubice, Czechoslovakia*

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Preface

In *Comprehensive Analytical Chemistry* the aim is to provide a work which, in many instances, should be a self-sufficient reference work; but where this is not possible, it should at least be a starting point for any analytical investigation.

It is hoped to include the widest selection of analytical topics that is possible within the compass of the work, and to give material in sufficient detail to allow it to be used directly, not only by professional analytical chemists, but also by those workers whose use of analytical methods is incidental to their work rather than continual. Where it is not possible to give details of methods, full reference to the pertinent original literature is made.

Industrial and clinical laboratories do employ automated analytical techniques in ever increasing numbers. Volume XVII of *Comprehensive Analytical Chemistry* aims to help users and potential users of such techniques. The author, Dr. Váňa comes from Czechoslovakia and has published several research and review papers on the subject. An earlier textbook in the Czech language served as the basis for the present publication.

Dr. C. L. Graham of the University of Birmingham, England, assisted in the production of the present volume; his contribution is acknowledged with many thanks.

March, 1982

G. Svehla

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Volume XVII

GAS AND LIQUID ANALYZERS

by

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Research Institute for Organic Syntheses

Pardubice, Czechoslovakia

Preface to the English Edition

Since the first Czech edition of this book in 1967 and its translation into Russian in 1970, automatic analyzers have undergone great development and their importance has substantially increased. Analyzers are becoming indispensable wherever chemical conversions of substances take place and enable control, automation and optimization of a great variety of industrial processes. Automatic analyzers are necessary for ensuring working safety, especially when there is a danger of formation of toxic or explosive concentrations of substances. An improvement in the state of the environment, especially of the atmosphere and river waters, is unimaginable without automated analytical control.

The English edition is a translation of the second Czech edition of the book. Most chapters have been rewritten and new material has been added compared with the first edition; outdated methods and instruments have been omitted and replaced by new chapters and instruments.

The aim of the book is to describe the theoretical and practical aspects of automatic analyzers and to contribute to their wider application in science and technology, both in laboratories and in industry.

An exhaustive survey of all analytical methods and analyzer types has not been attempted. Emphasis is placed on the analyzers most commonly used in measuring and regulating techniques. The fields in which the author has personal experience are treated in greater detail.

The manuscript undoubtedly contains various errors and inaccuracies; the author will be grateful to attentive readers who point them out.

I am indebted to all those who contributed their advice or help to the English edition of this book. My thanks go mainly to the reviewers of the

manuscript, Drs. L. Šerák, Z. Kapišinský and H. Koropečká, for many valuable comments.

I am grateful to the management of the Research Institute for Organic Syntheses in Pardubice-Rybitví for providing all the necessary facilities for my work in the field of automated analysis. My co-workers in the Institute, especially in the Department of Automation and in the Analytical-Physical Department helped in many useful discussions.

Various institutions, manufacturers and commercial organizations cited in the book kindly provided reprints, technical information and pictures of the instruments described.

Finally, I would like to thank Drs. M. and K. Štulík for translating the book into English and Dr. G. Svehla for editing it.

The author

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