

Trace Element Analysis of Food and Diet



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Preface

The researchers who choose to work in the field of trace element determinations are not necessarily experienced analytical chemists. However, once involved in this sort of research, they either should acquire the necessary instrumentation in their laboratory or should be able to communicate with their collaborating colleagues who will probably be analytical chemists. In any case, this type of reader will need to know more about analytical chemistry, its language, literature and basics. Some chapters of this book will address this class of reader who need a rather quick review of the field through easy reading.

The book should also be useful to readers who perform actual experiments for sampling, analysis and evaluation. Therefore, especially the last chapter will provide the reader with procedures, brief suggestions for methodology and current references. All chapters include illustrations. These are mostly adapted from original articles or literature developed by manufacturing companies. Therefore, our choice of this particular approach is intended to establish some useful linkages between theory and actual practices in the manufacturing world.

The language, style and appearance of the book have been designed carefully by the authors who both have over thirty years of teaching and research experience in the field of analytical chemistry that hopefully has contributed to the pedagogical aspect of the book. This book is expected to provide an easily comprehensible basic orientation for those new in the field while at the same time offering ample opportunities for experienced researchers to acquire new perspectives.

Some parts of Chapter 9, Nuclear Activation Analysis, have been based on the lecture notes of N.K. Aras and D.L. Anderson, which were prepared while they were giving a short course at the University of Maryland. Namık Aras would like to thank to late Professor Glen E. Gordon who taught him the importance of trace elements during his years at MIT and University of Maryland and to Robert Parr from IAEA for many years of fruitful discussions on trace elements in diet. Thanks are also due to R. Lindstrom from NIST and M. Yukawa from National Institute of Radiological Sciences, Japan for providing gamma ray and PIXE spectra of diet samples, and Özge Hacızadeoğlu for helping us in organizing the index of this book. Special thanks go to Peter Belton who encouraged us to write this book; and Annie Jacob, Janet Freshwater and Katrina Turner from the RSC for their organizational help. Finally we thank our wives Çiğdem Aras and Gülay Ataman for their moral support and patience throughout this endeavor.

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