

## Contents

Environmental Metrology: the Italian Approach <i>M. Belli</i>	1
Comparability and Quality of Experimental Data Under Different Quality Systems <i>S. Caroli</i>	8
The Role of Traceability in Sustainable Development: the UNIDO Approach <i>O. Loesener, L. M. Dhaoui</i>	14
Quality Assurance of Chemical Measurements — Metrological or Management Effort <i>M. Prošek, A. Golc-Wondra, and M. Fir</i>	26
Combination of Results from Several Measurements — An Everlasting Problem <i>W. Hässelbarth and W. Bremser</i>	34
Metrological Characteristics of the Conventional Measurement Scales for Hydrogen and Oxygen Stable Isotope Amount Ratios: The $\delta$ -Scales <i>M. Gröning</i>	62
Experience with Metrological Traccability and Measurement Uncertainty in Clinical Chemistry <i>A. Kalhner</i>	73
Traceability of pH in a Metrological Context <i>G. Meinrath, M.F. Camões, P. Spitzer, H. Bühler, M. Máriássy, K. Pratt, and C. Rivier</i>	85
Determination of PCBs in Organic Solutions: An Example of Traceability Chain <i>M. Sega and E. Amico di Meane</i>	92
Quality Control of pH Measurements Considering Activity and Concentration Scales: Uncertainty Budget of Primary and Secondary Apparatuses <i>P. Fiscaro, E. Ferrara, E. Prenesti, and S. Berto</i>	96
Metrology in Complex Situations: Experiences with Thermodynamic Data <i>G. Meinrath, S. Lis, and A. Kufelnicki</i>	104
Some Traceability Problems in Analytical Assays of interest in Thermal Metrology <i>F. Pavese</i>	110
Developments in Uncertainty Evaluation: The Activity of JCGM/WG1 <i>W. Bich and F. Penneccchi</i>	117

How to Combine Results Having Stated Uncertainties: To MU or Not to MU? <i>D. L. Duewer</i>	127
Uncertainty and Traceability: The View of the Analytical Chemist <i>A. Sahuquillo and G. Rauret</i>	143
Propagating Non-normally Distributed Uncertainty — The Ljungskile Code <i>A. Ödegaard-Jensen, G. Meinrath, and Ch. Ekberg</i>	154
A Systematic Approach in the Evaluation of Uncertainty in Analytical Chemistry — Application to ICP-AES Analysis <i>P. Carconi, R. Gatti, G. Zappa, and C. Zoani</i>	161
Self-Referring Procedure for the Full Cell Calibration of a Dynamic Gas Divider <i>R. Beltramini Boveri</i>	168
Investigation of Uncertainty Related to Measurement of Particulate Organic Pollutants <i>A. Cecinato, C. Balducci, A. Di Menno Di Bucchianico</i>	173
Micronucleus Test in Fish Peripheral Erythrocytes: Variability in the Microscope Scoring <i>D. Conti, S. Barbizzi, V. Bellaria, A. Pati, S. Balzamo, M. Belli</i>	176
Evaluation of intrinsic Uncertainty in the $k_0$ -NAA <i>T. Bučar and B. Smodiš</i>	187
Reporting of Uncertainty in Environmental Monitoring of Radionuclides <i>B. Varga and S. Tarján</i>	195
The Use of Reference Materials in International Reference Measurement Systems and for Comparison of Analytical Data <i>H. Emons</i>	205
The CSM Approach to the Calculation of the Uncertainty in XRF Analysis of Low- and High-Alloyed Steels <i>E. Celia and F. Falcioni</i>	216
Comparison of Different Approaches to Evaluate Proficiency Test Data <i>A. Shakhshiro, A. Fajgelj, and U. Sansone</i>	220
Distribution of Proficiency Testing Results and Their Comparability <i>I. Kuselman</i>	229
Inter-Laboratory Comparison: the APAT Approach <i>P. de Zorzi, S. Balzamo, S. Barbizzi, S. Gaudino, A. Pati, S. Rosamilia, M. Belli</i>	240
Proficiency Testing in the Biomedical Field: from Definitions of Targets to Use of Data from End-Users <i>M. Patriarca, I. Altieri, M. Castelli, F. Chiodo, A. Semeraro and A. Menditto</i>	248

<i>Contents</i>	ix
Measurement Uncertainty Its Role in Proficiency Testing Scheme — Case Study ILC Waste Water <i>M. Cotman, A. Drolc, and M. Roš</i>	263
The Proficiency Testing of Laboratories: A First Approach to Implement Bayesian Methods in the Assessment of Performance <i>R. Núñez-Lagos, M. Barrera, and M. L. Romero</i>	269
The $E_n$ , $U_{score}$ , and Accuracy Parameters — A Topic to Debate <i>Em. Cincu, I. Cazan, and V. Manu</i>	275
Collaborative Study for Pesticides Residues Determination in Water Samples (Method 5060 APAT-IRSA CNR) — Project 4b L. 93/01 <i>M. Antoci, S. Barbizzi, B. Bencivenga, D. Centioli, S. Finocchiaro, M. Fiore, F. Fiume, V. Giudice, M. Lorenzin, M. C. Manca, M. Morelli, E. Sesia, and M. Volante</i>	284
Gross $\alpha/\beta$ Measurements in Drinking Waters by Liquid Scintillation Technique: Validation and interlaboratory Comparison Data <i>I. Lopes and M. J. Madruga</i>	294
Improvement of a Radiochemical Laboratory Through Fourteen Years Participation in a Intercomparison Program <i>M. H. T. Taddei</i>	301
Subject Index	307