

## CONTENTS

### LECTURES AND SEMINARS

Laser Double-resonance Spectroscopy in Molecular Physics W. Demtröder	1
Opto-acoustics: Old Idea with New Applications A.C. Tam	29
Photoacoustic Analysis in Condensed Matter F. Scudieri	37
Coherent Anti-Stokes Raman Scattering J.P. Taran	51
Real Time Temperature and Concentration Measurements in a Semi-industrial Furnace with CARS Spectroscopy A. Ferrario and C. Malvicini	89
Laser Detection of Combustion Species P.A. Bonczyk	107
Analytical and Diagnostic Applications of Laser Induced Fluorescence in Flames and Plasmas N. Omenetto	131
Laser Diagnostics in Flames by Fluorescence Techniques G. Zizak	147
Analytical Spectroscopy using Laser Atomizers K. Laqua	159
Theory of Resonance Ionization Spectroscopy M.G. Payne and G.S. Hurst	183

One-atom Detection and Statistical Studies with Resonance Ionization Spectroscopy M.G. Payne and G.S. Hurst	189
Weak Interaction Studies using Resonance Ionization Spectroscopy M.G. Payne and G.S. Hurst	197
Resonance Ionization Spectroscopy: Applications in Isotope Geophysics B.E. Lehmann	203
Analytical Optogalvanic Spectroscopy in Flames J.C. Travis	213
Application of Lasers to Trace Analysis in the Atmosphere and Experiments with Single Atoms H. Walther	235

## CONTRIBUTED PAPERS

IR and UV Free Electron Laser Sources A. Marino	271
Study of Asbestos by Laser Microprobe Mass Analysis (LAMMA) J. De Waele and F. Adams	273
Matrix-isolation Spectroscopy of Small Metal Clusters H. Sontag, B. Eberle and R. Weber	277
The Use of Resonance Raman Spectroscopy as an Analytical Tool in the Qualitative and Quantitative Determination of some Food Dyes R.F. Stobbaerts and M.A. Herman	279
Application of the RIS Technique to the Study of Impurities in Solids E. Arimondo, S. Martellucci, E. Santamato, A. Sasso and S. Solimeno	281
Index	283