

CONTENTS

CONTRIBUTORS TO VOLUME 73.	vii
PREFACE.	ix

Ion Optics D. IOANOVICIU

I. Introduction	1
II. Ion Beam Focusing in Space	2
III. Ion Focusing in Time.	74
IV. Possible Developments and Refinements	90
References	91

Proton Microprobes and Their Applications

J. S. C. MCKEE AND G. R. SMITH

I. Introduction	93
II. Proton Microprobes and Their Current Capabilities	97
III. Factors Directly Affecting the Quality of Microbeams	105
IV. Possible Future Developments in Microprobes Systems	114
V. Sample Analysis	117
VI. Typical Applications of Proton Microprobes	123
VII. Advantages of High Energy Microprobes	128
References.	129

An Early History of the Electron Microscope in the United States

JOHN H. REISNER

I. Author's Preface.	134
II. Introduction	135
III. The Earliest Electron Microscopes in the United States.	139
IV. The Legacy from Toronto	149
V. Electron Microscope Development at the General Electric Company (GE)	154
VI. Development of the Electron Microscope at RCA	163
VII. The Farrand Optical Company's Electron Microscope	215
VIII. Marton Builds His Fifth Microscope.	220

IX. Assimilation of the Electron Microscope	222
X. Electron Microscopy	224
XI. Acknowledgements	229
References	230

Electron Beam Testing

K. URA AND H. FUJIOKA

I. Introduction	234
II. Various Methods of Electron Beam Testing.	236
III. Voltage Contrast by Electron Probe	247
IV. Electron Irradiation Effects	258
V. Electron Optical Column of Electron Beam Testing.	270
VI. Automatic Control System of Electron Optical Column	291
VII. EB Tester System	299
VIII. Measurement of Microstructures	307
References	311
INDEX	319