

Preface

The fields of micro- and nanotechnology have emerged over the past decade as a major focus of modern scientific and engineering research and technology. Driven by advances in microfabrication, the investigation, manipulation and engineering of systems characterized by micrometer and, more recently, nanometer scales has become commonplace throughout all technical disciplines. With these developments, an entirely new collection of experimental diagnostic techniques have been developed to explore and characterize such systems. The purpose of this book is to highlight some of the most innovative and powerful developments in micron-scale diagnostics that have been presented over the past few years, and to provide a resource for researchers and scientists interested in learning about the techniques themselves – their capabilities and limitations.

As with any field at the leading edge of modern science, each day brings new ideas, and by the time these chapters were written and published, many new improvements have been suggested, implemented. Nevertheless we hope that the contributions here will continue to have some value to researchers in the new frontier of micron and nano-scale science and technology.

I must first and foremost thank the authors of each chapter who generously agreed to invest the considerable effort required to document their expertise. This effort started over two years ago and most of the contributions were submitted by the summer of 2003. It has taken this long to finish the formatting, assemble the various permissions and get the book to the printer. During this delay (which was due only to my own inefficiency busy schedule) , the chapter authors have been unreasonably patient, and I thank them for their good nature! Last, but not least, I must extend a special thanks to Shankar Devasenathipathy, who helped me with the final editing chores and gave that extra push to see the book out of the door.

Providence RI
June 2004

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<http://www.springer.com/978-3-540-23099-1>

Microscale Diagnostic Techniques

Breuer, K. (Ed.)

2005, XII, 259 p., Hardcover

ISBN: 978-3-540-23099-1