



Fundamental Principles of Engineering Nanometrology, Second Edition (Micro and Nano Technologies)

By Richard Leach

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Fundamental Principles of Engineering Nanometrology, Second Edition (Micro and Nano Technologies) By Richard Leach

Working at the nano-scale demands an understanding of the high-precision measurement techniques that make nanotechnology and advanced manufacturing possible. Richard Leach introduces these techniques to a broad audience of engineers and scientists involved in nanotechnology and manufacturing applications and research. He also provides a routemap and toolkit for metrologists engaging with the rigor of measurement and data analysis at the nano-scale. Starting from the fundamentals of precision measurement, the author progresses into different measurement and characterization techniques.

The focus on nanometrology in engineering contexts makes this book an essential guide for the emerging nanomanufacturing / nanofabrication sector, where measurement and standardization requirements are paramount both in product specification and quality assurance. This book provides engineers and scientists with the methods and understanding needed to design and produce high-performance, long-lived products while ensuring that compliance and public health requirements are met.

Updated to cover new and emerging technologies, and recent developments in standards and regulatory frameworks, this second edition includes many new sections, e.g. new technologies in scanning probe and e-beam microscopy, recent developments in interferometry and advances in co-ordinate metrology.

- Demystifies nanometrology for a wide audience of engineers, scientists, and students involved in nanotech and advanced manufacturing applications and research
- Introduces metrologists to the specific techniques and equipment involved in measuring at the nano-scale or to nano-scale uncertainty
- Fully updated to cover the latest technological developments, standards, and regulations

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Editorial Review

From the Back Cover

Fundamental Principles of Engineering Nanometrology

By: Richard K. Leach

Richard Leach demystifies the principles and techniques of nanometrology and introduces readers to the standards, equipment and analytical methods that together unlock the industrial and research potential of nanotechnology.

KEY FEATURES

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- Fully updated to cover the latest technological developments, and standards / regulations.

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Updated to cover new and emerging technologies, and recent developments in standards and regulatory frameworks, this second edition includes many new sections, e.g. new technologies in scanning probe and e-beam microscopy (including DLS, NTA), recent developments in interferometry and advances in co-ordinate metrology.

ABOUT THE AUTHOR

Professor Richard Leach is a principle Research Scientist in the Mass & Dimensional Group, Engineering Measurement Division at the National Physical Laboratory (NPL), UK.

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Richard Leach is a Principal Research Scientist in the Mass & Dimensional Group, Industry & Innovati

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