Frontiers of Surface-Enhanced Raman Scattering. Single Nanoparticles and Single Cells

Description: Surface-enhanced Raman scattering (SERS) has flourished for nearly four decades and today it is a vibrant, quintessential embodiment of nanoscience and nanotechnology with a broad range of applications.

The current level of understanding of SERS is now well advanced and as a consequence researchers are beginning to formulate strategies for exploiting SERS as a general platform for chemical and biological analysis, with unprecedented routine levels of sensitivity, specificity and reproducibility.

Written by internationally-recognised experts, this text:

- Provides comprehensive coverage of the theory, instrumentation and applications of SERS.
- Presents new research fields of this key analytical technique including:
  - single molecule detection;
  - nanoparticle analysis;
  - single cell and bacterial diagnostics;
  - the detection of biomolecules and biomolecular complexes.
- Aims to convey to the reader the enthusiasm of researchers in this field.

This text is relevant to those involved in diagnostic tools for nanomedicine and synthesis as well as materials scientists working in the area of the characterization of nanoparticles.

It is the authors hope that this book will not only be useful but enjoyable to read. Their wish is that it inspires its readers to try novel and exciting SERS research.

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