1. Record Nr. UNINA9910153614503321

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Titolo	Tractability of Multivariate Problems [[electronic resource]] : Volume III: Standard Information for Operators / / Erich Novak, Henryk Wozniakowski
Pubbl/distr/stampa	Zuerich, Switzerland, : European Mathematical Society Publishing House, 2012
ISBN	3-03719-616-5
Descrizione fisica	1 online resource (604 pages)
Collana	EMS Tracts in Mathematics (ETM) ; 18
Classificazione	65-xx
Soggetti	Numerical analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Sommario/riassunto	This three-volume set is a comprehensive study of the tractability of multivariate problems. Volume I covers algorithms using linear information consisting of arbitrary continuous linear functionals. Volumes II and III are devoted to algorithms using standard information consisting of function values. Approximation of linear and selected nonlinear functionals is dealt with in volume II, and linear and selected nonlinear operators are studied in volume III. To a large extent, volume III can be read independently of volumes I and II. The most important example studied in volume III is the approximation of multivariate functions. It turns out that many other linear and some nonlinear problems are closely related to the approximation of multivariate functions. While the lower bounds obtained in volume I for the class of linear information also yield lower bounds for the standard class of function values, new techniques for upper bounds are presented in volume III. One of the main issues here is to verify when the power of standard information is nearly the same as the power of linear information. In particular, for the approximation problem defined over Hilbert spaces, the power of standard and linear information is the same in the randomized and average case (with Gaussian measures) settings, whereas in the worst case setting this is not true. The book is of interest to researchers working in computational mathematics,

	especially in approximation of high-dimensiona problems. It may be well suited for graduate courses and seminars. The text contains 58 open problems for future research in tractability.

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Titolo	Infrared and Raman spectroscopy in forensic science [[electronic resource] /] / edited by John M. Chalmers, Howell G. M. Edwards, Michael D. Hargreaves
Pubbl/distr/stampa	Chichester, West Sussex, UK ; ; Hoboken : , : Wiley, , 2012
ISBN	1-283-40976-3 9786613409768 1-119-96232-3 1-119-96233-1
Edizione	[1st. ed.]
Descrizione fisica	1 online resource (680 p.)
Collana	THEi Wiley ebooks
Altri autori (Persone)	ChalmersJohn M EdwardsHowell G. M. <1943-> HargreavesMichael D
Disciplina	363.25/6
Soggetti	Forensic sciences Infrared spectroscopy Raman spectroscopy Criminal investigation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Infrared and Raman Spectroscopy in Forensic Science; Contents; About the Editors; List of Contributors; Preface; SECTION I: INTRODUCTION; 1 Introduction and Scope; 1.1 Historical Prologue; 1.2 The Application of Infrared Spectroscopy and Raman Spectroscopy in Forensic Science; References; 2 Vibrational Spectroscopy Techniques: Basics and Instrumentation; 2.1 Introduction; 2.2 Vibrational Spectroscopy Techniques; 2.2.1 The basics and some comparisons; 2.2.1.1 Wavelength/Wavenumber Ranges and Selection Rules; 2.2.1.2 Sampling Considerations

2.2.1.3 Sensitivity, Surfaces and Signal Enhancement Techniques 2.2.1.4 IR and Raman Bands; 2.2.2 Quantitative and classification analyses; 2.2.2.1 Multivariate Data Analyses; 2.2.2.2 Data Pre-Processing; 2.2.3 Reference databases and search libraries/algorithms; 2.3 Vibrational Spectroscopy: Instrumentation; 2.3.1 Spectrometers; 2.3.1.1 Sources; 2.3.1.2 Detectors; 2.3.1.3 Spectrometers and Interferometers; 2.3.2 Vibrational spectroscopy-microscopy systems; 2.3.2.1 Mapping and Imaging; 2.3.3 Fibre optics and fibre-optic probes 2.3.4 Remote, portable, handheld, field-use, and stand-off vibrational spectroscopy instrumentation 2.4 Closing Remarks; References; 3 Vibrational Spectroscopy Sampling Techniques; 3.1 Introduction; 3.2 Vibrational Spectroscopy: Sampling Techniques; 3.2.1 Raman spectroscopy; 3.2.1.1 Raman Spectroscopy: Sampling Techniques and Considerations; 3.2.1.2 Resonance Raman Spectroscopy; 3.2.1.3 Surface Enhanced Raman Spectroscopy and Surface Enhanced Resonance Raman Spectroscopy; 3.2.1.4 Spatially Offset Raman Spectroscopy; 3.2.1.5 Transmission Raman Spectroscopy
3.2.1.6 Raman Microscopy/Microspectroscopy and Imaging 3.2.1.7 Remote and Fibre-Optic Probe Raman Spectroscopy; 3.2.2 Mid-infrared spectroscopy; 3.2.2.1 Mid-Infrared Transmission Spectroscopy: Sampling Techniques; 3.2.2.2 Mid-Infrared Reflection Spectroscopy Sampling Techniques; 3.2.2.3 Mid-Infrared Photoacoustic Spectroscopy; 3.2.2.4 Mid-Infrared Microscopy/Microspectroscopy and Imaging; 3.2.3 Near-infrared spectroscopy: sampling techniques; 3.2.3.1 Near-Infrared Transmission Spectroscopy; 3.2.3.2 Near-Infrared Diffuse Reflection Spectroscopy; 3.2.3.3 Near-Infrared Transflection Spectroscopy
3.2.3.4 Near-Infrared Spectroscopy: Interactance and Fibre-Optic Probe Measurements 3.2.3.5 Near-Infrared Microscopy and Imaging; 3.2.4 Terahertz/far-infrared spectroscopy: sampling techniques; 3.3 Closing Remarks; Acknowledgements; References; SECTION II: CRIMINAL SCENE; 4 Criminal Forensic Analysis; 4.1 Introduction; 4.2 Forensic Analysis; 4.3 General Use of IR and Raman Spectroscopy in Forensic Analysis; 4.3.1 Progression of infrared spectroscopy development in forensic analysis; 4.3.2 Progression of Raman spectroscopy development in forensic analysis; 4.3.3 Sampling methods
4.3.3.1 Microscopes

Sommario/riassunto

This book will provide a survey of the major areas in which information derived from vibrational spectroscopy investigations and studies have contributed to the benefit of forensic science, either in a complementary or a unique way. This is highlighted by examples taken from real case studies and analyses of forensic relevance, which provide a focus for current and future applications and developments.