

FINGERMARK VISUALISATION MANUAL

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Emerging Sample Treatments in Proteomics - José-Luis Capelo-Martínez 2019-06-24

Proteomics is a well-established area of Science; yet with a strong area in constant evolution, namely sample treatment. There few books that currently cover the field of emerging sample treatments in proteomics, this new volume will be the first to cover all emerging and existing studies. This unique book presents the latest advances in the field focusing on emerging trends linked to high-resolution mass spectrometry, technology addressed to treat samples faster and to attempts to simplify the proteome for the reader.

Fingerprint Development Techniques - Stephen M. Bleay 2018-03-12

A comprehensive review of the latest fingerprint development and imaging techniques With contributions from leading experts in the field, Fingerprint Development Techniques offers a comprehensive review of the key techniques used in the development and imaging of fingerprints. It includes a review of the properties of fingerprints, the surfaces that fingerprints are deposited on, and the interactions that can occur between fingerprints, surfaces and environments. Comprehensive in scope, the text explores the history of each process, the theory behind the way fingerprints are either developed or imaged, and information about the role of each of the chemical constituents in recommended formulations. The authors explain the methodology employed for carrying out comparisons of effectiveness of various development techniques that clearly demonstrate how to select the most effective approaches. The text also explores how techniques can be used in sequence and with techniques for recovering other forms of forensic evidence. In addition, the book offers a guide for the selection of fingerprint development techniques and includes information on the influence of surface contamination and exposure conditions. This important resource: Provides clear methodologies for conducting comparisons of fingerprint development technique effectiveness Contains in-depth assessment of fingerprint constituents and how they are utilized by development and imaging processes Includes background information on fingerprint chemistry Offers a comprehensive history, the theory, and the applications for a broader range of processes, including the roles of each constituent in reagent formulations Fingerprint Development Techniques offers a comprehensive guide to fingerprint development and imaging, building on much of the previously unpublished research of the Home Office Centre for Applied Science and Technology.

Forensic Digital Imaging and Photography - Herbert L. Blitzer 2002-01-24

"This hands-on guide clarifies the difference between what can be done digitally and what should be done in a forensic setting, and helps the reader "learn by doing" with exercises and step-by-step instructions. The images and exercises in the CD-ROM provide practical examples of the techniques described in the book." "Law enforcement professionals who follow the recommendations in this text can feel confident that their handling of imaging evidence will stand up to the high standards necessary for prosecuting criminal cases."--BOOK JACKET.

Advances in MALDI and Laser-Induced Soft Ionization Mass Spectrometry - Rainer Cramer 2015-11-09

This book covers the state-of-the-art of modern MALDI (matrix-assisted laser desorption/ionization) and its applications. New applications and improvements in the MALDI field such as biotyping, clinical diagnosis,

forensic imaging, and ESI-like ion production are covered in detail. Additional topics include MS imaging, biotyping/speciation and large-scale, high-speed MS sample profiling, new methods based on MALDI or MALDI-like sample preparations, and the advantages of ESI to MALDI MS analysis. This is an ideal book for graduate students and researchers in the field of bioanalytical sciences. This book also: • Showcases new techniques and applications in MALDI MS • Demonstrates how MALDI is preferable to ESI (electrospray ionization) • Illustrates the pros and cons associated with biomarker discovery studies in clinical proteomics and the various application areas, such as cancer proteomics

Cognition Beyond the Brain - Stephen J Cowley 2013-06-13

Cognition Beyond the Brain challenges neurocentrism by advocating a systemic view of cognition based on investigating how action shapes the experience of thinking. The systemic view steers between extended functionalism and enactivism by stressing how living beings connect bodies, technologies, language and culture. Since human thinking depends on a cultural ecology, people connect biologically-based powers with extended systems and, by so doing, they constitute cognitive systems that reach across the skin. Biological interpretation exploits extended functional systems. Illustrating distributed cognition, one set of chapters focus on computer mediated trust, work at a construction site, judgement aggregation and crime scene investigation. Turning to how bodies manufacture skills, the remaining chapters focus on interactivity or sense-saturated coordination. The feeling of doing is crucial to solving maths problems, learning about X rays, finding an invoice number, or launching a warhead in a film. People both participate in extended systems and exert individual responsibility. Brains manufacture a now to which selves are anchored: people can act automatically or, at times, vary habits and choose to author actions. In ontogenesis, a systemic view permits rationality to be seen as gaining mastery over world-side resources. Much evidence and argument thus speaks for reconnecting the study of computation, interactivity and human artifice. Taken together, this can drive a networks revolution that gives due cognitive importance to the perceivable world that lies beyond the brain. Cognition Beyond the Brain is a valuable reference for researchers, practitioners and graduate students within the fields of Computer Science, Psychology, Linguistics and Cognitive Science.

Fingerprint Development Techniques - Stephen M. Bleay 2018-04-30

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The Machinery of Life - David S. Goodsell 2013-03-09

A journey into the sub-microscopic world of molecular machines. Readers are first introduced to the types of molecules built by cells: proteins, nucleic acids, lipids, and polysaccharides. Then, in a series of distinctive illustrations, the reader is guided through the interior world of cells, exploring the ways in which molecules work in concert to perform the processes of living. Finally, the author shows us how vitamins, viruses, poisons, and drugs each have their effects on the molecules in our bodies. David Goodsell, author and illustrator, has prepared a fascinating introduction to biochemistry for the non-specialist. His book combines a lucid text with an abundance of drawings and computer graphics that present the world of cells and their components in a truly unique way.

Emerging Trends in Computing and Expert Technology - D. Jude Hemanth 2019-11-07

This book presents high-quality research papers that demonstrate how emerging technologies in the field of intelligent systems can be used to effectively meet global needs. The respective papers highlight a wealth of innovations and experimental results, while also addressing proven IT governance, standards and practices, and new designs and tools that facilitate rapid information flows to the user. The book is divided into five major sections, namely: "Advances in High Performance Computing", "Advances in Machine and Deep Learning", "Advances in Networking and Communication", "Advances in Circuits and Systems in Computing" and "Advances in Control and Soft Computing".

The Fingerprint - U.s. Department of Justice 2014-08-02

The idea of The Fingerprint Sourcebook originated during a meeting in April 2002. Individuals representing the fingerprint, academic, and scientific communities met in Chicago, Illinois, for a day and a half to discuss the state of fingerprint identification with a view toward the challenges raised by Daubert issues. The meeting was a joint project between the International Association for Identification (IAI) and West Virginia University (WVU). One recommendation that came out of that meeting was a suggestion to create a sourcebook for friction ridge examiners, that is, a single source of researched information regarding the subject. This sourcebook would provide educational, training, and research information for the international scientific community.

Handbook on the Physics and Chemistry of Rare Earths - Pecharsky Vitalij 2020-08-27

Handbook on the Physics and Chemistry of Rare Earths: Including Actinides, Volume 57, is a continuous series of books covering all aspects of rare earth science, including chemistry, life sciences, materials science and physics. The book's main emphasis is on rare earth elements [Sc, Y, and the lanthanides (La through Lu)], but whenever relevant, information is also included on the closely related actinide elements. Presents up-to-date overviews and new developments in the field of rare earths, covering both their physics and chemistry Contains Individual chapters that are comprehensive and broad, along with critical reviews Provides contributions from highly experienced, invited experts

Combating Wildlife Crime in South Africa - Claude-Hélène Mayer 2019-02-13

This brief explores wildlife crime and its international and culture-specific combat in South Africa from a green psychology perspective, focusing on a specific method of forensic trace recovery by analysing and evaluating the use of gelatine lifters. It provides theoretical and applied insight into visualising and sequential processing of finger-, shoe- and footprints, and environmental traces. It allows the reader in-depth insight into effective methods of international wildlife crime combat, based on the South African perspective. This brief gives theoretical and applied recommendations for international, regional and local actors for successful cooperation on wildlife protection. As global and local programs, actions and law enforcement strategies to combat wildlife crime are gaining strength, forensic trace evidence is a useful method for investigative and preventive success. This brief will be useful for students and researchers in

forensic science, wildlife crime, green criminology, as well as for law enforcement and international actors combating wildlife crime practically on both international and local levels.

Emerging Technologies for the Analysis of Forensic Traces - Simona Francese 2019-09-30

This book provides a line of communication between academia and end users/practitioners to advance forensic science and boost its contribution to criminal investigations and court cases. By covering the state of the art of promising technologies for the analysis of trace evidence using a controlled vocabulary, this book targets the forensics community as well as, crucially, informing the end users on novel and potential forensic opportunities for the fight against crime. By reporting end users commentaries at the end of each chapter, the relevant academic community is provided with clear indications on where to direct further technological developments in order to meet the law requirements for operational deployment, as well as the specific needs of the end users. Promising chemistry based technologies and analytical techniques as well as techniques that have already shown to various degrees an operational character are covered. The majority of the techniques covered have imaging capabilities, that is the ability to visualize the distribution of the target molecules within the trace evidence recovered. This feature enhances intelligibility of the information making it also accessible to a lay audience such as that typically found with a court jury. Trace evidence discussed in this book include fingermarks, bodily fluids, hair, gunshot residues, soil, ink and questioned documents thus covering a wide range of possible evidence recovered at crime scenes.

Report to the President - Executive Office Executive Office of the President 2016-09-15

Published and needed studies for pattern-based forensic science methods What studies have been published in the past 5 years that support the foundational aspects of each of the pattern-based forensic science methods, including (but not limited to) latent print analysis; firearms/toolmarks; shoe/tire prints; bitemark analysis; questioned documents? What studies are needed to demonstrate the reliability and validity of these methods? Have studies been conducted to establish baseline frequencies of characteristics or features used in these pattern-based matching techniques? If not, how might such studies be conducted? What publicly accessible databases exist that could support such studies? What closed databases exist? Where such databases exist, how are they controlled and curated? If studies have not been conducted, what conclusions can and cannot be stated about the relationship between the crime scene evidence and a known suspect or tool (e.g., firearm)? How is performance testing (testing designed to determine the frequency with which individual examiners obtain correct answers) currently used in forensic laboratories? Are performance tests conducted in a blind manner? How could well-designed performance testing be used more systematically for the above pattern-based techniques to establish baseline error rates for individual examiners? What are the opportunities and challenges for developing and employing blind performance testing? What studies have been published in this area? What are the most promising new scientific techniques that are currently under development or could be developed in the next decade that would be most useful for forensic applications? Examples could include hair analysis by mass spectrometry, advances in digital forensics, and phenotypic DNA profiling. What standards of validity and reliability should new forensic methods be required to meet before they are introduced in court? Are there scientific and technology disciplines other than the traditional forensic science disciplines that could usefully contribute to and/or enhance the scientific, technical and/or societal aspects of forensic science? What mechanisms could be employed to encourage further collaboration between these disciplines and the forensic science community?

Suç Araştırmalarında Kriminal Yaklaşımlar - Yakup GÜLEKÇİ 2020-12-30

The Science of Crime Scenes - Max M. Houck 2017-07-07

The Science of Crime Scenes, Second Edition offers a science-based approach to crime scenes, emphasizing that understanding is more important than simply knowing. Without sacrificing technical details, the book adds significantly to the philosophy and theory of crime scene science. This new edition addresses the science behind the scenes and demonstrates the latest methods and technologies with updated figures and images. It covers the philosophy of the crime scene, the personnel involved at a scene (including the media), the detection of criminal traces and their reconstruction, and special crime scenes, such as mass disasters and terroristic events. Written by an international trio of authors with decades of crime scene

experience, this book is the next generation of crime scene textbooks. This volume will serve both as a textbook for forensic programs, and as an excellent reference for forensic practitioners and crime scene technicians with science backgrounds. Includes in-depth coverage of disasters and mass murder, terror crime scenes and CBRN (Chemical, biological, radioactive and nuclear) - topics not covered in any other text Includes an instructor site with lecture slides, images and links to resources for teaching and training
Fingermark Visualisation Manual - Stationery Office (Great Britain) 2014-04-14

Fingerprint Detection Techniques - Pierre Margot 1994

Computer Applications for Handling Legal Evidence, Police Investigation and Case Argumentation - Ephraim Nissan 2012-06-15

This book provides an overview of computer techniques and tools — especially from artificial intelligence (AI) — for handling legal evidence, police intelligence, crime analysis or detection, and forensic testing, with a sustained discussion of methods for the modelling of reasoning and forming an opinion about the evidence, methods for the modelling of argumentation, and computational approaches to dealing with legal, or any, narratives. By the 2000s, the modelling of reasoning on legal evidence has emerged as a significant area within the well-established field of AI & Law. An overview such as this one has never been attempted before. It offers a panoramic view of topics, techniques and tools. It is more than a survey, as topic after topic, the reader can get a closer view of approaches and techniques. One aim is to introduce practitioners of AI to the modelling legal evidence. Another aim is to introduce legal professionals, as well as the more technically oriented among law enforcement professionals, or researchers in police science, to information technology resources from which their own respective field stands to benefit. Computer scientists must not blunder into design choices resulting in tools objectionable for legal professionals, so it is important to be aware of ongoing controversies. A survey is provided of argumentation tools or methods for reasoning about the evidence. Another class of tools considered here is intended to assist in organisational aspects of managing of the evidence. Moreover, tools appropriate for crime detection, intelligence, and investigation include tools based on link analysis and data mining. Concepts and techniques are introduced, along with case studies. So are areas in the forensic sciences. Special chapters are devoted to VIRTOPSY (a procedure for legal medicine) and FLINTS (a tool for the police). This is both an introductory book (possibly a textbook), and a reference for specialists from various quarters.

Metagenomics: Techniques, Applications, Challenges and Opportunities - Reena Singh Chopra 2020-09-08

This book summarizes the various areas of research in metagenomics and their potential applications in medicine, the environment and biotechnology. The book presents the recent advances in theoretical, methodological and applied aspects of metagenomics and highlights their applications in the fields of environmental microbial forensics, bioremediation, drug-discovery and agriculture. In addition, the book discusses various metagenomics approaches used for understanding the microbial physiology and biochemistry. Lastly the book describes a range of bioinformatics tools and computational methods for metagenomics analysis as well as the functional diversity and dynamics of microbial communities colonizing the human skin.

Friction Ridge Skin - James F. Cowger 2020-07-24

Here is a complete guide to the collection, classification, and comparison of friction skin prints and the determination of identity and nonidentity. It discusses: the cause and significance of variations in prints; the importance of class characteristics in print; the application of probability in decision making; and photographic techniques and considerations.

Dead Men Do Tell Tales - William R. Maples 2010-09-01

From a skeleton, a skull, a mere fragment of burnt thighbone, prominent forensic anthropologist Dr. William Maples can deduce the age, gender, and ethnicity of a murder victim, the manner in which the person was dispatched, and, ultimately, the identity of the killer. In *Dead Men Do Tell Tales*, Dr. Maples revisits his strangest, most interesting, and most horrific investigations, from the baffling cases of conquistador Francisco Pizarro and Vietnam MIAs to the mysterious deaths of President Zachary Taylor

and the family of Czar Nicholas II.

Lee and Gaensslen's Advances in Fingerprint Technology - Allan Gaw 2012-10-18

Reflecting new discoveries in fingerprint science, Lee and Gaensslen's *Advances in Fingerprint Technology*, Third Edition has been completely updated with new material and nearly double the references contained in the previous edition. The book begins with a detailed review of current, widely used development techniques, as well as some older, histo

Shooting Incident Reconstruction - Michael G. Haag 2011-06-29

Forensic scientists, law enforcement, and crime scene investigators are often tasked with reconstruction of events based on crime scene evidence, and the subsequent analysis of that evidence. The use and misuse of firearms to perpetrate crimes from theft to murder necessitates numerous invitations to reconstruct shooting incidents. The discharge of firearms and the behavior of projectiles create many forms of physical evidence that, through proper testing and interpretation by a skilled forensic scientist, can establish what did and what did not occur. This book is generated from the authors' numerous years of conducting courses and seminars on the subject of shooting incident reconstruction. It seeks to thoroughly address matters from simple to complex in providing the reader an explanation of the factors surrounding ballistics, trajectory, and shooting scenes. The ultimate objectives of this unique book are to assist investigators, crime scene analysts, pathologists, ballistics experts, and lawyers to understand the terminology, science, and factors involved in reconstructing shooting incident events to solve forensic cases. The book will cover the full range of related topics including the range from which a firearm was discharged, the sequence of shots in a multiple discharge shooting incident, the position of a firearm at the moment of discharge, the position of a victim at the moment of impact, the probable flight path of a projectile, the manner in which a firearm was discharged and much more. Written by the most well-respected shooting scene and ballistics experts in the world Contains over 200 full-color diagrams and photographs that support and illustrate key concepts Case studies illustrate real-world application of technical concepts

Fingerprints and Other Ridge Skin Impressions - Christophe Champod 2017-12-19

Since its publication, the first edition of *Fingerprints and Other Ridge Skin Impressions* has become a classic in the field. This second edition is completely updated, focusing on the latest technology and techniques—including current detection procedures, applicable processing and analysis methods—all while incorporating the expansive growth of literature on the topic since the publication of the original edition. Forensic science has been challenged in recent years as a result of errors, courts and other scientists contesting verdicts, and changes of a fundamental nature related to previous claims of infallibility and absolute individualization. As such, these factors represent a fundamental change in the way training, identifying, and reporting should be conducted. This book addresses these questions with a clear viewpoint as to where the profession—and ridge skin identification in particular—must go and what efforts and research will help develop the field over the next several years. The second edition introduces several new topics, including Discussion of ACE-V and research results from ACE-V studies Computerized marking systems to help examiners produce reports New probabilistic models and decision theories about ridge skin evidence interpretation, introducing Bayesnet tools Fundamental understanding of ridge mark detection techniques, with the introduction of new aspects such as nanotechnology, immunology and hyperspectral imaging Overview of reagent preparation and application Chapters cover all aspects of the subject, including the formation of friction ridges on the skin, the deposition of latent marks, ridge skin mark identification, the detection and enhancement of such marks, as well the recording of fingerprint evidence. The book serves as an essential reference for practitioners working in the field of fingermark detection and identification, as well as legal and police professionals and anyone studying forensic science with a view to understanding current thoughts and challenges in dactyloscopy.

Handbook of Missing Persons - Stephen J. Morewitz 2016-12-19

This ambitious multidisciplinary volume surveys the science, forensics, politics, and ethics involved in responding to missing persons cases. International experts across the physical and social sciences offer data, case examples, and insights on best practices, new methods, and emerging specialties that may be employed in investigations. Topics such as secondary victimization, privacy issues, DNA identification, and the challenges of finding victims of war and genocide highlight the uncertainties and complexities

surrounding these cases as well as possibilities for location and recovery. This diverse presentation will assist professionals in accessing new ideas, collaborating with colleagues, and handling missing persons cases with greater efficiency—and potentially greater certainty. Among the Handbook's topics: ·A profile of missing persons: some key findings for police officers. ·Missing persons investigations and identification: issues of scale, infrastructure, and political will. ·Pregnancy and parenting among runaway and homeless young women. ·Estimating the appearance of the missing: forensic age progression in the search for missing persons. ·The use of trace evidence in missing persons investigations. ·The Investigation of historic missing persons cases: genocide and "conflict time" human rights abuses. The depth and scope of its expertise make the Handbook of Missing Persons useful for criminal justice and forensic professionals, health care and mental health professionals, social scientists, legal professionals, policy leaders, community leaders, and military personnel, as well as for the general public.

Fundamentals of Fingerprint Analysis - Hillary Moses Daluz 2014-12-01

The "CSI effect" has brought an explosion of interest in the forensic sciences, leading to the development of new programs in universities across the world. While dozens of professional texts on the science of fingerprint analysis are available, few are designed specifically for students. An essential learning tool for classes in fingerprinting and impression evidence, *Fundamentals of Fingerprint Analysis* takes students from an understanding of the historical background of fingerprint evidence to seeing how it plays out in a present-day courtroom. Using a pedagogical format, with each chapter building on the previous one, the book is divided into three sections. The first explains the history and theory of fingerprint analysis, fingerprint patterns and classification, and the concept of biometrics—the practice of using unique biological measurements or features to identify individuals. The second section discusses forensic light sources and physical and chemical processing methods. Section Three covers fingerprint analysis with chapters on documentation, crime scene processing, fingerprint and palm print comparisons, and courtroom testimony. Designed for classroom use, each chapter contains key terms, learning objectives, a chapter summary, and review questions to test students' assimilation of the material. Ample diagrams, case studies, and photos demonstrate concepts in a way that prepares students for working actual cases.

Springer Handbook of Microscopy - Peter W. Hawkes 2019-11-02

This book features reviews by leading experts on the methods and applications of modern forms of microscopy. The recent awards of Nobel Prizes awarded for super-resolution optical microscopy and cryo-electron microscopy have demonstrated the rich scientific opportunities for research in novel microscopies. Earlier Nobel Prizes for electron microscopy (the instrument itself and applications to biology), scanning probe microscopy and holography are a reminder of the central role of microscopy in modern science, from the study of nanostructures in materials science, physics and chemistry to structural biology. Separate chapters are devoted to confocal, fluorescent and related novel optical microscopies, coherent diffractive imaging, scanning probe microscopy, transmission electron microscopy in all its modes from aberration corrected and analytical to in-situ and time-resolved, low energy electron microscopy, photoelectron microscopy, cryo-electron microscopy in biology, and also ion microscopy. In addition to serving as an essential reference for researchers and teachers in the fields such as materials science, condensed matter physics, solid-state chemistry, structural biology and the molecular sciences generally, the *Springer Handbook of Microscopy* is a unified, coherent and pedagogically attractive text for advanced students who need an authoritative yet accessible guide to the science and practice of microscopy.

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Fingerprint Development Techniques - Stephen M. Bleay 2018-02-16

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Advances in Fingerprint Technology - Ashim K. Datta 2001-06-15

Fingerprints constitute one of the most important categories of physical evidence, and it is among the few that can be truly individualized. During the last two decades, many new and exciting developments have taken place in the field of fingerprint science, particularly in the realm of methods for developing latent prints and in the growth of imag

Light in Forensic Science - Jacqueline L Stair 2018-04-16

The identification and quantification of material present and collected at a crime scene are critical requirements in investigative analyses. Forensic analysts use a variety of tools and techniques to achieve this, many of which use light. Light is not always the forensic analyst's friend however, as light can degrade samples and alter results. This book details the analysis of a range of molecular systems by light-based techniques relevant to forensic science, as well as the negative effects of light in the degradation of forensic evidence, such as the breakage of DNA linkages during DNA profiling. The introductory chapters explain how chemiluminescence and fluorescence can be used to visualise samples and the advantages and limitations of available technologies. They also discuss the limitations of our knowledge about how light could alter the physical nature of materials, for example by breaking DNA linkages during DNA profiling or by modifying molecular structures of polymers and illicit drugs. The book then explains how to detect, analyse and interpret evidence from materials such as illicit drugs, agents of bioterrorism, and textiles, using light-based techniques from microscopy to surface enhanced Raman spectroscopy. Edited by active photobiological and forensic scientists, this book will be of interest to students and researchers in the fields of photochemistry, photobiology, toxicology and forensic science.

The Psychological Foundations of Evidence Law - Michael J. Saks 2016-01-22

Evidence law is meant to facilitate trials that are fair, accurate, and efficient, and that encourage and protect important societal values and relationships. In pursuit of these often-conflicting goals, common law judges and modern drafting committees have had to perform as amateur applied psychologists. Their task has required them to employ what they think they know about the ability and motivations of witnesses to perceive, store, and retrieve information; about the effects of the litigation process on testimony and other evidence; and about our capacity to comprehend and evaluate evidence. These are the same phenomena that cognitive and social psychologists systematically study. The rules of evidence have evolved to restrain lawyers from using the most robust weapons of influence, and to direct judges to exclude certain categories of information, limit it, or instruct juries on how to think about it. Evidence law regulates the form of questions lawyers may ask, filters expert testimony, requires witnesses to take oaths, and aims to give lawyers and factfinders the tools they need to assess witnesses' reliability. But without a thorough grounding in psychology, is the "common sense" of the rulemakers as they create these rules always, or even usually, correct? And when it is not, how can the rules be fixed? Addressed to those in both law and psychology, *The Psychological Foundations of Evidence Law* draws on the best current psychological research-based knowledge to identify and evaluate the choices implicit in the rules of evidence, and to suggest alternatives that psychology reveals as better for accomplishing the law's goals.

MALDI Mass Spectrometry Imaging - Tiffany Porta Siegel 2021-11-23

This book gathers, in a single resource, knowledge about matrix-assisted laser desorption ionisation (MALDI) mass spectrometry imaging. It includes fundamentals in the MALDI ionisation process, different source geometries and capabilities, detection systems and the latest research and applications in the range of -omics area as well as other broader areas. Chapters will touch on dedicated sample preparation protocols specific for the class of compounds of interest, instrumentation used with strengths and current limitations, strategies for structural analysis and identification and applications. It will be a welcomed addition to the literature in this fast-moving field and provide a guide to new innovations and applications especially in metabolomics and proteomics. With contributions from leading experts, this book will be an authoritative guide to this method. Aimed at postgraduate and professional researchers, in academia and in the industrial market where it has direct application to clinical research. It will be a supporting volume for those just entering the field as well as experienced practitioners.

Crime Scene Management - Raul Sutton 2016-09-23

Second edition of an established text on common procedures for the identification and processing of evidence at scenes of crime Includes chapters on quality assurance and credibility of practices and processes issues surrounding major and complex crime Forensic handling of mass fatalities Crime scene reconstruction and impact on evidence recovery processes

Handbook of Biometric Anti-Spoofing - Sébastien Marcel 2014-07-17

Presenting the first definitive study of the subject, this Handbook of Biometric Anti-Spoofing reviews the state of the art in covert attacks against biometric systems and in deriving countermeasures to these attacks. Topics and features: provides a detailed introduction to the field of biometric anti-spoofing and a thorough review of the associated literature; examines spoofing attacks against five biometric modalities, namely, fingerprints, face, iris, speaker and gait; discusses anti-spoofing measures for multi-model biometric systems; reviews evaluation methodologies, international standards and legal and ethical issues; describes current challenges and suggests directions for future research; presents the latest work from a global selection of experts in the field, including members of the TABULA RASA project.

Environmental Deterioration of Materials - A. Moncmanová 2007

The increasing level of pollution in the environment not only harms the natural world, but also accelerates the deterioration and corrosion of materials used in technical work, as well as objects with historical or artistic value. It is impossible to eliminate the numerous sources of this negative effect, so there are currently increased efforts towards improved preservation, which require a thorough knowledge of the causes of the degradation of individual materials. This book deals with the fundamental principles underlying environmental degradation of widely-used and economically important construction materials such as metals, stone, brick, concrete, timber, cast iron, steel, copper alloys and aluminium. It features

information on the methods of deterioration, as well as general information on the economic impact of the damaging processes, and offers some suggested fundamental protection techniques for buildings, industrial and agricultural facilities, monuments and culturally important structures. This book will be of interest to materials and corrosion engineering experts, civil and environmental engineers, students and practicing professionals, designers, architects and restoration engineers. It will also be a useful tool for managers from various sectors of industry, for auditors of environmental management systems, and it can be used as a complementary course book for university students.

Handbook of Biometric Anti-Spoofing - Sébastien Marcel 2019-01-01

This authoritative and comprehensive handbook is the definitive work on the current state of the art of Biometric Presentation Attack Detection (PAD) – also known as Biometric Anti-Spoofing. Building on the success of the previous, pioneering edition, this thoroughly updated second edition has been considerably expanded to provide even greater coverage of PAD methods, spanning biometrics systems based on face, fingerprint, iris, voice, vein, and signature recognition. New material is also included on major PAD competitions, important databases for research, and on the impact of recent international legislation. Valuable insights are supplied by a selection of leading experts in the field, complete with results from reproducible research, supported by source code and further information available at an associated website. Topics and features: reviews the latest developments in PAD for fingerprint biometrics, covering optical coherence tomography (OCT) technology, and issues of interoperability; examines methods for PAD in iris recognition systems, and the application of stimulated pupillary light reflex for this purpose; discusses advancements in PAD methods for face recognition-based biometrics, such as research on 3D facial masks and remote photoplethysmography (rPPG); presents a survey of PAD for automatic speaker recognition (ASV), including the use of convolutional neural networks (CNNs), and an overview of relevant databases; describes the results yielded by key competitions on fingerprint liveness detection, iris liveness detection, and software-based face anti-spoofing; provides analyses of PAD in fingervein recognition, online handwritten signature verification, and in biometric technologies on mobile devices includes coverage of international standards, the E.U. PSDII and GDPR directives, and on different perspectives on presentation attack evaluation. This text/reference is essential reading for anyone involved in biometric identity verification, be they students, researchers, practitioners, engineers, or technology consultants. Those new to the field will also benefit from a number of introductory chapters, outlining the basics for the most important biometrics.

Fundamentals of Fingerprint Analysis, Second Edition - Hillary Moses Daluz 2018-10-26

Building on the success of the first Edition—the first pure textbook designed specifically for students on the subject—*Fundamentals of Fingerprint Analysis, Second Edition* provides an understanding of the historical background of fingerprint evidence, and follows it all the way through to illustrate how it is utilized in the courtroom. An essential learning tool for classes in fingerprinting and impression evidence—with each chapter building on the previous one using a pedagogical format—the book is divided into three sections. The first explains the history and theory of fingerprint analysis, fingerprint patterns and classification, and the concept of biometrics—the practice of using unique biological measurements or features to identify individuals. The second section discusses forensic light sources and physical and chemical processing methods. Section three covers fingerprint analysis with chapters on documentation, crime scene processing, fingerprint and palm print comparisons, and courtroom testimony. New coverage to this edition includes such topics as the biometrics and AFIS systems, physiology and embryology of fingerprint development in the womb, digital fingerprint record systems, new and emerging chemical reagents, varieties of fingerprint powders, and more. *Fundamentals of Fingerprint Analysis, Second Edition* stands as the most comprehensive introductory textbook on the market.

Forensic Investigation of Explosions, Second Edition - Alexander Beveridge 2011-11-02

Now in its second edition, *Forensic Investigation of Explosions* draws on the editor's 30 years of explosives casework experience, including his work on task forces set up to investigate major explosives incidents. Dr. Alexander Beveridge provides a broad, multidisciplinary approach, assembling the contributions of internationally recognized experts who present the definitive reference work on the subject. Topics discussed include: The physics and chemistry of explosives and explosions The detection of hidden

explosives The effect of explosions on structures and persons Aircraft sabotage investigations Explosion scene investigations Casework management The role of forensic scientists Analysis of explosives and their residues Forensic pathology as it relates to explosives Presentation of expert testimony With nearly 40 percent more material, this new edition contains revised chapters and several new topics, including: A profile of casework management in the UK Forensic Explosives Laboratory, one of the world's top labs, with a discussion of their management system, training procedures, and practical approaches to problem solving Properties and analysis of improvised explosives An examination of the Bali bombings and the use of mobile

analytical techniques and mobile laboratories The collection, analysis, and presentation of evidence in vehicle-borne improvised explosive device cases, as evidenced in attacks on US overseas targets This volume offers valuable information to all members of prevention and post-blast teams. Each chapter was written by an expert or experts in a specific field and provides well-referenced information underlying best practices that can be used in the field, laboratory, conference room, classroom, or courtroom.

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