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Recent developments in the field of nutrition have led to increased interest in herbs and medicinal plants as phytochemical-rich sources for functional food, nutraceuticals, and drugs. As research sheds light on the therapeutic potential of various bioactive phytochemicals, the demand for plant extracts and oils has increased. Black cumin or black seeds (*Nigella sativa*) have particularly widespread nutritional and medicinal applications. In traditional medicine, black seeds are used to manage fatigue and chronic headache. Black seed oil is used as an antiseptic and analgesic remedy and for treatment of joint's pain and stiffness and can be mixed with sesame oil to treat dermatosis, abdominal disorders, cough, headache, fever, liver ailments, jaundice, sore eyes, and hemorrhoids. Thymoquinone, the main constituent in black seed volatile oil, has been shown to suppress carcinogenesis. Black cumin (*Nigella sativa*) seeds: Chemistry, Technology, Functionality, and Applications presents in detail the chemical composition, therapeutic properties, and functionality of high-value oils, phytochemicals, nutrients, and volatiles of the *Nigella sativa* seed. Organized by formulation (seeds, fixed oil, essential oil, and extracts), chapters break this seed down into its chemical constituents and explore their role in the development of pharmaceuticals, nutraceuticals, novel food, natural drugs, and feed. Following numerous reports on the health-promoting activities of *Nigella sativa*, this is the first comprehensive presentation of the functional, nutritional, and pharmacological traits of *Nigella sativa* seeds and seed oil constituents.

In the past decades advances have been made in the research and practice on unsaturated soil mechanics. In 2000 the first Asia-Pacific Conferences on Unsaturated Soils was organized in Singapore. Since then, four conferences have been held under the continued support of the Technical Committee on Unsaturated Soils (TC106) of the International Socie

This updated edition of the industry standard reference on power system frequency control provides practical, systematic and flexible algorithms for regulating load frequency, offering new solutions to the technical challenges introduced by the escalating role of distributed generation and renewable energy sources in smart electric grids. The author emphasizes the physical constraints and practical engineering issues related to frequency in a deregulated environment, while fostering a conceptual understanding of frequency regulation and robust control techniques. The resulting control strategies bridge the gap between advantageous robust controls and traditional power system design, and are supplemented by real-time simulations. The impacts of low inertia and damping effect on system frequency in the presence of increased distributed and renewable penetration are given particular consideration, as the bulk synchronous machines of conventional frequency control are rendered ineffective in emerging grid environments where distributed/variable units with little or no rotating mass become dominant. Frequency stability and control issues relevant to the exciting new field of microgrids are also undertaken in this new edition. As frequency control becomes increasingly significant in the design of ever-more complex power systems, this expert guide ensures engineers are prepared to deploy smart grids with optimal functionality.

The volume presents all the data collected during the cycle of research conducted by the Italian Archaeological Mission in the Farafra Oasis between 1990 and 2005. The 29 multidisciplinary essays contained in this book provide a detailed picture of the population of the Farafra Oasis, hitherto one of the least well known within the Western Desert. Farafra became particularly important during the middle Holocene, the period when climate conditions were most favourable, with later brief humid episodes even in the historic periods. The results of the long-term research cycle presented here, combined with data from the survey of the whole Wadi el Obeiyid still in progress, allow the authors to identify changes in the peopling of the oasis and to define various occupation phases. The new chronology for the Wadi el Obeiyid is one of the main achievements of the book and, as demonstrated in the final chapter, is in complete agreement with the main cultural units of other territories in the Western Desert. On this chronological basis, the contacts between the latter and the populations established on the Nile are brought into sharper focus. The importance of the archaeological documents discovered at Farafra and, at the same time their fragility due to the deterioration of the physical environment and the uncontrolled human activities, make us fear for their conservation. We hope that this book, with its complete documentation of the precious nature of the Farafra Oasis landscape and its archaeological heritage, may help to promote more effective policies for its safeguard.

Neutrosophic theory and applications have been expanding in all directions at an astonishing rate especially after the introduction the journal entitled "Neutrosophic Sets and Systems". New theories, techniques, algorithms have been rapidly developed. One of the most striking trends in the neutrosophic theory is the hybridization of neutrosophic set with other potential sets such as rough set, bipolar set, soft set, hesitant fuzzy set, etc. The different hybrid structure such as rough neutrosophic set, single valued neutrosophic rough set, bipolar neutrosophic set, single valued neutrosophic hesitant fuzzy set, etc. are proposed in the literature in a short period of time. Neutrosophic set has been a very important tool in all various areas of data mining, decision making, e-learning, engineering, medicine, social science, and some more. The book "New Trends in Neutrosophic Theories and Applications" focuses on theories, methods, algorithms for decision making and also applications involving neutrosophic information. Some topics deal with data mining, decision making, e-learning, graph theory, medical diagnosis, probability theory, topology, and some more. 30 papers by 39 authors and coauthors.

The Effect of an Ionic Wind on Natural ConvectionCyclic Hydrocarbons: Advances in Research and Application: 2011 EditionScholarlyBriefScholarlyEditions

This book presents contributions from leading international experts in the field of nephrology. Each chapter is independent and discusses nephrology in the author's country, including the history of nephrology development, kidney disease epidemiology, clinical nephrology, dialysis practice in acute and chronic renal failure settings (hemodialysis, hemodiafiltration, peritoneal dialysis), pediatric nephrology, and kidney transplantation. In addition, the book covers topics such as the job market for nephrologists, reimbursement, nephrology education, and the number of professionals in the private and public sectors. With 53 chapters and more than 300 authors from all continents offering a unique perspective on nephrology practice, it provides a much-needed information source for nephrologists around the globe. The reader will be able to travel through "Nephrology Worldwide", a pleasant reading experience with not only relevant information and updated data, but also a comprehensive look at the history, countries' peculiarities, and a critical analysis of the scenario of nephrology and renal replacement therapy. A valuable resource for healthcare professionals and other stakeholders interested in learning about the status quo of Nephrology Worldwide. "Both the failings and the successes are outlined in a way that should make this book a compelling read, not just for the well-informed renal physician, but also for planners and policy makers whose thinking and actions are integral to the way we practice medicine." - Sir Peter J. Ratcliffe, Nephrologist and 2019 Nobel Prize Winner More information on the Nephrology Worldwide initiative can be found at [www.nephrologyworldwide.com](http://www.nephrologyworldwide.com).

This book is a collection of nine papers, contributed by different authors and co-authors (listed in the order of the papers): A. A. Salama, O. M. Khaled, K. M. Mahfouz, M. Ali, F. Smarandache, M. Shabir, L. Vladareanu, S. Broumi, K. Mondal, S. Pramanik, I. Arockiarani, I. R. Sumathi, M. Eisa and I. Deli. In first paper, the authors studied Neutrosophic

Correlation and Simple Linear Regression. The Generalization of Neutrosophic Rings and Neutrosophic Fields is proposed in the second paper. Cosine Similarity Measure of Interval Valued Neutrosophic Sets is studied in third paper. In fourth paper A Study on Problems of Hijras in West Bengal Based on Neutrosophic Cognitive Maps is introduced. Similarly in fifth paper Neutrosophic Crisp Set Theory is discussed. In paper six Interval Valued Fuzzy Neutrosophic Soft Structure Spaces are presented by the authors. Soft Neutrosophic Bi-LA-Semigroup and Soft Neutrosophic N-LA-Semigroup is given in seventh paper. Introduction to Image Processing via Neutrosophic Technique is given in paper eight. In the last paper, Neutrosophic Soft Multi-Set Theory and Its Decision Making is presented by the authors.

"Neutrosophic Sets and Systems" has been created for publications on advanced studies in neutrosophy, neutrosophic set, neutrosophic logic, neutrosophic probability, neutrosophic statistics that started in 1995 and their applications in any field, such as the neutrosophic structures developed in algebra, geometry, topology, etc.

Rapid population growth, high standards of living, and technological development are constantly increasing the diversity and quantity of solid waste. The production of solid municipal waste associated with the high proportion of organic waste and its improper disposal lead to considerable environmental pollution due to the emission of greenhouse gases such as methane, carbon dioxide, etc. In such a challenging environment, municipal authorities need to develop more effective solutions to manage the growing urban solid waste. Most of the municipal solid waste mainly constitutes degradable materials, which represent a significant role in greenhouse gas emissions in urban localities. Integrated solid waste management approaches must be developed and improved to manage the increasing organic fractions of municipal solid waste, which helps to reduce greenhouse emissions with potential economic benefits. A sustainable management of municipal solid waste systems constitutes a promising and attractive trend to study current consumption behaviors responsible for waste generation, and to protect the global ecosystem. This book presents the management of municipal of solid waste, including recycling and landfill technologies. Moreover, composition and types of waste will be investigated. As a result, the most appropriate and feasible scenarios for the management of municipal solid waste are presented to provide the respected readership with the scientific background for sustainable development in these processes, which are increasingly supported by innovative methodologies for holistic assessment of process sustainability.

Antioxidants are one of the most sought-after biological compounds of interest to both scientific and nonscientific communities. The term gained popularity with the advent of identifying these compounds as having the ability to maintain health and wellness by combating against pathways leading to non-communicable diseases. This book covers several aspects of antioxidants—mechanisms of action, assays of measuring potency, sources, and even methods of isolation and identification. While it may seem these aspects have been covered in depth in several publications before this, this book intends to be positioned as an update, especially since the area of antioxidant research is as dynamic as ever. There are several chapters that might be of interest to health buffs, specifically those who are quite keen on maintaining health and wellness.

Cyclic Hydrocarbons: Advances in Research and Application: 2011 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Cyclic Hydrocarbons in a concise format. The editors have built Cyclic Hydrocarbons: Advances in Research and Application: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Cyclic Hydrocarbons in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Cyclic Hydrocarbons: Advances in Research and Application: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

In healthcare systems, medical devices help physicians and specialists in diagnosis, prognosis, and therapeutics. As research shows, validation of medical devices is significantly optimized by accurate signal processing. Biomedical Signal and Image Processing in Patient Care is a pivotal reference source for progressive research on the latest development of applications and tools for healthcare systems. Featuring extensive coverage on a broad range of topics and perspectives such as telemedicine, human machine interfaces, and multimodal data fusion, this publication is ideally designed for academicians, researchers, students, and practitioners seeking current scholarly research on real-life technological inventions.

This book answers a question which came about while the author was working on his diploma thesis [1]: would it be better to ask for the available band width instead of probing the network (like TCP does)? The diploma thesis was concerned with long-distance musical interaction ("NetMusic"). This is a very peculiar application: only a small amount of bandwidth may be necessary, but timely delivery and reduced loss are very important. Back then, these requirements led to a thorough investigation of existing telecommunication network mechanisms, but a satisfactory answer to the question could not be found. Simply put, the answer is "yes" - this work describes a mechanism which indeed enables an application to "ask for the available bandwidth". This obviously does not only concern online musical collaboration any longer. Among others, the mechanism yields the following advantages over existing alternatives: • good throughput while maintaining close to zero loss and a small bottleneck queue length • usefulness for streaming media applications due to a very smooth rate • feasibility for satellite and wireless links • high scalability Additionally, a reusable framework for future applications that need to "ask the network" for certain performance data was developed.

This richly illustrated book reviews the geology, tectonics and mineralization of the Arabian-Nubian Shield (ANS) in 27 chapters. It starts with an examination of the ANS

lithospheric scale features, explores Mesoproterozoic units and deals with the ANS oceanic stage. Arc volcanism and plutonism, post-collision basins and volcanics are discussed, as well as the younger granitoid magmatism and the deformation history of the ANS. The book provides information on ANS glacial stages and late magmatism. Chapters are devoted to review the transition between ANS and the reworked continent to its south. Finally, it discusses how ANS structures influenced the overall East African Rift System.

Arab populations have their “own” genetic disorders, both universal and particular. Genetic diversity within these source populations, along with the fact that the rates of inbreeding are often high and family sizes are often large, constitute conditions that facilitate the emergence and detection of phenotypes explained notably by autosomal recessive inheritance; in which case, the use of homozygosity gene mapping can facilitate the discovery of the corresponding genes. The present book includes 5 parts dealing with various aspects that relate to the genetic structure of Arabs and minorities within the Arab world as well as genetic disorders prevalent in this part of the world. It includes updated reviews of the genetic disorders in various Arab countries and geographic regions. The focus is primarily, but not exclusively, on the group of single-gene disorders with particular emphasis on autosomal recessive conditions. It further includes epidemiological and clinical data as well as inheritance patterns, mutation and polymorphism data, and available haplotype analysis data. The ethnic and genetic diversity of the Arab populations is discussed as well as aspects of genetic counseling practice in this region together with a proposal for an ethical framework for genetic research and prevention of genetic disorders. The target audience of this book includes human and medical geneticists, genetic counselors, researchers, medical specialists dealing with Arab patients or practicing in Arab countries, medical and genetic counseling students, and nurses.

Because our chemical environment affects our physical and mental well-being, it is a matter of increasing concern and is therefore attracting much research effort. This timely collection of essays highlights current developments in the field of environmental toxicology. Chapters analyze the carcinogenic, mutagenic, genotoxic, and neurotoxic effects of both anthropogenic and natural toxins in the soil, air, and water around us, as well as in our workplace and diet. The book also examines the effects of toxins on other organisms, as well as the techniques, policies, and management strategies employed in studying and controlling environmental pollutants. It will be an essential reference to a variety of personnel in environmental studies and public health.

This book describes the water security challenges with focus on water scarcity and quality in our rapidly changing world. Achieving water security is essential to promoting economic and social development, as well as resource sustainability and ecosystem integrity. Questions of water security are central to recent global agreements such as the Sustainable Development Goals (SDGs), the Paris Agreement on Climate Change, and the Sendai Framework for Disaster Risk Reduction. The thematic areas discussed here support the SDGs, with special attention to Goal 6 (“Ensure availability and sustainable management of water and sanitation”). The book is a collection of studies from engineering, social and environmental disciplines and aims at giving a balanced overview of the current, complex discourse on water scarcity and quality. It offers a source of inspiration and information for researchers, policymakers, planners, and practitioners concerning the further development of concepts, approaches, and methodologies for promoting water secure societies.

Helminthosporium diseases of wheat: summary of group discussions and recommendations; Evolution of the nomenclature used for Helminthosporium spp. causing leaf blight of wheat; Crop management and breeding for control of Pyrenophora tritici-repentis causing yellow spot of wheat in Australia; Constraints on the integrated management of spot blotch of wheat; Components of the spot disease cycle; Leaf blight diseases and associated soilborne fungal pathogens of wheat in South and Southeast Asia; Foliar blights of wheat in India: germplasm improvement and future challenges for sustainable, high yielding wheat production; Distribution of pathogens causing foliar blight of wheat in India and neighboring countries; Occurrence and significance of spot blotch in Bangladesh; Disease incidence and yield loss due to foliar blight of wheat in Nepal; Tan spot in Western Canada; Diseases caused by Bipolaris sorokiniana and Drechslera tritici-repentis in Hungary; Population structure and epidemiology of Bipolaris sorokiniana in the Rice-wheat cropping pattern of Nepal; Tan spot in Central Asia; Breeding for foliar blight resistance in Heilongjiang province, China; Incidence and current management of spot blotch of wheat in China; Spot blotch and tan spot of wheat in Paraguay; Research on Pyrenophora tritici-repentis tan spot of wheat in Uruguay; Improving control of tan spot caused by Pyrenophora tritici-repentis in the Mixteca Alta of Oaxaca, Mexico; Importance of spot blotch caused by Bipolaris sorokiniana in Bolivia; Major foliar diseases of triticale in Morocco; Effect of crop rotation and straw mulch inoculation on tan spot and root rot in bread and durum wheat; Breeding for resistance to spot blotch in wheat: global perspective; Evaluating spot blotch resistance of wheat: improving disease assessment under controlled conditions and in the field; Results of the South Asia regional Helminthosporium leaf blight and yield experiment, 1993-94; Breeding for resistance to Helminthosporium blights in Nepal: strategies and genetic gains; Resistance to spot blotch in spring wheat: breeding and genetic studies; Effect of single D-Genome chromosome substitutions from bread wheat on spot blotch resistance of hexaploid triticale; Repeatability of tan spot resistance evaluation in wheat; New approach for clustering breeding genotypes using production variables, yield losses and a double-digit disease scale; Screening wheat for Bipolaris sorokiniana resistance in Vietnam; Tan spot resistance in tetraploid and hexaploid wheat; Novel genetic diversity for stress tolerance in the triticeae: strategic avenues and applied potentials; Evaluating Southern cone wheat germoplasm for spot blotch and tan spot; Variation in resistance to Bipolaris sorokiniana and Magnaporthe grisea in wheat grisea in wheat plants regenerated through embryogenesis; Evaluating spot blotch resistance traits in wheat and related species; In vitro selection for spot blotch resistance in wheat; Identification and inheritance of resistance to foliar blight of wheat; Root rot of wheat: inoculation and screening techniques, yield loss

assessment, and germplasm evaluation; Transformation technologies available for enhancing fungal resistance in wheat; Molecular analyses of toxin (s) produced by *Pyrenophora tritici-repentis*; Role of host metabolism in action of necrosis toxin from *Pyrenophora tritici-repentis*; Fungi associated with foliar blight of wheat in warm areas; Characterization of the *Pyrenophora tritici-repentis* necrosis toxin and a folding precursor; Diversity of *Pyrenophora tritici-repentis* isolates from warm wheat growing areas: pathogenicity, toxin production, and RAPD analysis; Role of root exudates and toxins in susceptibility of Yemeni wheat varieties to *Cochliobolus sativus*; Characterization of *Cochliobolus sativus* isolates from the UK and Yemen; A xylanase gene from *Cochliobolus sativus*; Leaf spot diseases of wheat in a conservation tillage study; Control of leaf blights of wheat by elimination of the inoculum source; Incidence and severity of leaf-spotting diseases of spring wheat in Southern Manitoba; Tan spot of wheat in Argentina: importance and disease management strategies; Influence of agronomic practice on foliar blight, and identification of alternate host in the rice-wheat cropping system; Evaluation of tan spot research in Morocco; Controlling leaf spot of wheat through nutrient management; Phytosanitary effect of the combined application of green manure and antagonistic bacterium *Bacillus subtilis* on *Bipolaris sorokiniana*; Seed pathology of tan spot; Wheat reaction to kernel infection by *Pyrenophora tritici-repentis* and effect on the subsequent crop; List of participants.

The Mesopotamian marshes are important for economic, social, and biodiversity values and have been home to indigenous human communities for millennia. They are regarded as a legendary site. This multi-authored book contains chapters written by world-renowned experts in their field. Both basic and applied information are made available, making the book a must-have for a wide spectrum of users. For example, an understanding of the natural and the social aspects of the marshes, as described here, is an obvious prerequisite for a pest management plan in this area. Scholars interested in wetlands can use this book as a guide to compare different wetlands areas in Asia. The bibliography section contains valuable references to the marsh areas and research in the field. This book serves as an up-to-date comprehensive source of information on different aspects of the southern marshes of Iraq and is aimed at academic scholars, environmentalists, and decision makers.

Linear regression techniques are used to establish a quantitative description of side forces on bodies at high incidence. A data base is assembled concerning the key side force characteristics of maximum observed side force, angle of occurrence, and minimum angle of attack at which a side force is observed. This information is examined to determine the important trends and a predictive model for side force based on the crossflow analogy is developed to suggest other important variables. A linear regression model for these quantities is developed to include only those variables which are statistically significant. Results indicate that peak side force coefficients are a function of Mach number and only weakly of Reynolds number. Nose fineness is the critical model dimension which suggests that peak side force is a product of the nose flow field. The angle at which peak side forces occur is found to be dependent on model length and Mach number, while the onset angle of attack is a function of model length only.

Computational complexity is a serious bottleneck for the design process in virtually any engineering area. While migration from prototyping and experimental-based design validation to verification using computer simulation models is inevitable and has a number of advantages, high computational costs of accurate, high-fidelity simulations can be a major issue that slows down the development of computer-aided design methodologies, particularly those exploiting automated design improvement procedures, e.g., numerical optimization. The continuous increase of available computational resources does not always translate into shortening of the design cycle because of the growing demand for higher accuracy and necessity to simulate larger and more complex systems. Accurate simulation of a single design of a given system may be as long as several hours, days or even weeks, which often makes design automation using conventional methods impractical or even prohibitive. Additional problems include numerical noise often present in the simulation data, possible presence of multiple locally optimum designs, as well as multiple conflicting objectives. In this edited book, various techniques that can alleviate solving computationally expensive engineering design problems are presented. One of the most promising approaches is the use of fast replacement models, so-called surrogates, that reliably represent the expensive, simulation-based model of the system/device of interest but they are much cheaper and analytically tractable. Here, a group of international experts summarize recent developments in the area and demonstrate applications in various disciplines of engineering and science. The main purpose of the work is to provide the basic concepts and formulations of the surrogate-based modeling and optimization paradigm, as well as discuss relevant modeling techniques, optimization algorithms and design procedures. Therefore, this book should be useful to researchers and engineers from any discipline where computationally heavy simulations are used on a daily basis in the design process.

This volume is a major revision and expansion of Taylor's seminal book *Radiocarbon Dating: An Archaeological Perspective*. It covers the major advances and accomplishments of the  $^{14}\text{C}$  method in archaeology and analyzes factors that affect the accuracy and precision of  $^{14}\text{C}$ -based age estimates. In addition to reviewing the basic principles of the method, it examines  $^{14}\text{C}$  dating anomalies and means to resolve them, and considers the critical application of  $^{14}\text{C}$  data as a dating isotope with special emphasis on issues in Old and New World archaeology and late Quaternary paleoanthropology. This volume, again a benchmark for  $^{14}\text{C}$  dating, critically reflects on the method and data that underpins, in so many cases, the validity of the chronologies used to understand the prehistoric archaeological record.

Naturally present bioactive compounds in plants are referred to as "Phytochemicals" and are being studied extensively for their role in human health. Studies have shown that they can have an important role to play in the prevention and management of several human diseases. Recognizing the increasing interest in this area, this book is being published in response to the need for more current information globally about phytochemicals and their role in human health. Chapters of the book are authored by internationally

recognized authors who are experts in their respective field of expertise. The chapters represent both original research as well as up-to-date and comprehensive reviews. We are sure that the book will be an important reference source meeting the needs of a wide range of interest groups.

Fundamentals and Technology of Combustion contains brief descriptions of combustion fundamental processes, followed by an extensive survey of the combustion research technology. It also includes mathematical combustion modeling of the processes covering mainly premixed and diffusion flames, where many chemical and physical processes compete in complex ways, for both laminar and turbulent flows. The combustion chemistry models that validate experimental data for different fuels are sufficiently accurate to allow confident predictions of the flame characteristics. This illustrates a unique bridge between combustion fundamentals and combustion technology, which provides a valuable technical reference for many engineers and scientists. Moreover, the book gives the reader sufficient background of basic engineering sciences such as chemistry, thermodynamics, heat transfer and fluid mechanics. The combustion research and mathematical models fit between small-scale laboratory burner flames, and large-scale industrial boilers, furnaces and combustion chambers. The materials have been collected from previous relevant research and some selected papers of the authors and co-workers, which have been presented mainly in different refereed journals, international conferences and symposia, thus providing a comprehensive collection. Furthermore, the book includes some of the many recent general correlations for the characteristics of laminar, turbulent, premixed and diffusion flames in an easily usable form. The authors believe that further progress in optimizing combustion performance and reducing polluting emissions can only be treated through understanding of combustion chemistry.

Bioaugmentation, biostimulation and biocontrol approaches using microbial inoculants, biofertilizers, biochemicals and organic amendments improve soil biology, fertility and crop productivity by providing plant growth-promoting nutrients and suppressing soil-borne diseases and plant-parasitic nematodes. Our knowledge of microbial diversity and its function in soils has been increased tremendously due to the availability of a wealth of data gained through recent advances in the development of molecular methods and metagenomics for the evaluation of microbial diversity and functions in the rhizosphere environment of soil. Chapters dealing with the application of biofertilizers and organic amendments are contributed by experts – authorities in the area of soil science including microbiology and molecular biology – from academic institutions and the industry.

The increasing concern over environmental and health impact of urban air pollution has led to a growing need for an international conference focussing specifically on urbanised regions. Although, air quality has gained importance through out the world, it is especially in areas of high urban development that the problems are particularly acute. Scientific interest in this field is particularly evident from the growing number of journal publications and conference presentations. The numerous conferences held every year on air pollution, however, have tended to encompass a broad theme and have not specifically focussed on the urban environment. In order to address this need an international conference on urban air quality was organised by the Environmental Physics Group of the Institute of Physics in collaboration with the Royal Society of Chemistry (RSC), The Royal Meteorological Society (RMS) and the National Society for Clean Air and Environmental Protection (NSCA). Over 100 participants from various countries attended this first international conference on urban air quality. The aim of the conference was to provide a forum for open scientific discussion on the latest advances in the field of urban air quality monitoring and modelling. The range of topics included: chemical and biogenic pollutants, monitoring techniques, instrumentation, analysis of pollutants, spatial and temporal interpretation of air quality data, emission sources and modelling of air quality. All papers submitted for publication were peer reviewed and consequently, some articles were not successful in the refereeing process and have not been included in this special issue.

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