

Electric Arc Furnace Eaf Features And Its Compensation

This volume constitutes the proceedings of the 10th International Conference on Artificial Intelligence and Soft Computing, ICAISC'2010, held in Zakopane, Poland in June 13-17, 2010. The articles are organized in topical sections on Fuzzy Systems and Their Applications; Data Mining, Classification and Forecasting; Image and Speech Analysis; Bioinformatics and Medical Applications (Volume 6113) together with Neural Networks and Their Applications; Evolutionary Algorithms and Their Applications; Agent System, Robotics and Control; Various Problems of Artificial Intelligence (Volume 6114).

These volumes constitute the Proceedings of the 6th International Workshop on Soft Computing Applications, or SOFA 2014, held on 24-26 July 2014 in Timisoara, Romania. This edition was organized by the University of Belgrade, Serbia in conjunction with Romanian Society of Control Engineering and Technical Informatics (SRAIT) - Arad Section, The General Association of Engineers in Romania - Arad Section, Institute of Computer Science, Iasi Branch of the Romanian Academy and IEEE Romanian Section. The Soft Computing concept was introduced by Lotfi Zadeh in 1991 and serves to highlight the emergence of computing methodologies in which the accent is on exploiting the tolerance for imprecision and uncertainty to achieve tractability, robustness and low solution cost. Soft computing facilitates the use of fuzzy logic, neurocomputing, evolutionary computing and probabilistic computing in combination, leading to the concept of hybrid intelligent systems. The combination of such intelligent systems tools and a large number of applications introduce a need for a synergy of scientific and technological disciplines in order to show the great potential of Soft Computing in all domains. The conference papers included in these proceedings, published post conference, were grouped into the following area of research: - Image, Text and Signal Processing - Intelligent Transportation Modeling and Applications Biomedical Applications Neural Network and Applications Knowledge-Based Technologies for Web Applications, Cloud Computing, Security, Algorithms and Computer Networks Knowledge-Based Technologies Soft Computing Techniques for Time Series Analysis Soft Computing and Fuzzy Logic in Biometrics Fuzzy Applications Theory and Fuzzy Control Business Process Management Methods and Applications in Electrical Engineering The volumes provide useful information to professors, researchers and graduated students in area of soft computing techniques and applications, as they report new research work on challenging issues.

The two-volume set LNAI 6922 and LNAI 6923 constitutes the refereed proceedings of the Third International Conference on Computational Collective Intelligence, ICCCI 2011, held in Gdynia, Poland, in September 2011. The 112 papers in this two volume set presented together with 3 keynote speeches were carefully reviewed and selected from 300 submissions. The papers are organized in topical sections on knowledge management, machine learning and applications, autonomous and collective decision-making, collective computations and optimization, Web services and semantic Web, social networks and computational swarm intelligence and applications.

Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions contains invited, keynote and theme lectures and regular papers presented at the 7th International Conference on Earthquake Geotechnical Engineering (Rome, Italy, 17-20 June 2019). The contributions deal with recent developments and advancements as well as case histories, field monitoring, experimental characterization, physical and analytical modelling, and applications related to the variety of environmental phenomena induced by earthquakes in soils and their effects on engineered systems interacting with them. The book is divided in the sections below: Invited papers Keynote papers Theme lectures Special Session on Large Scale Testing Special Session on Liquefaction Projects Special Session on Lessons learned from recent earthquakes Special Session on the Central Italy earthquake Regular papers Earthquake Geotechnical Engineering for Protection and Development of Environment and Constructions provides a significant up-to-date collection of recent experiences and developments, and aims at engineers, geologists and seismologists, consultants, public and private contractors, local national and international authorities, and to all those involved in research and practice related to Earthquake Geotechnical Engineering. Due to the demand for new urban construction, its repair, and its maintenance, the concrete and construction enterprises continue to grow, as do their use of finite natural resources. The industry is now under pressure to seek ways to minimize the use of rapidly depleting natural resources. Effective utilization of various waste materials, often found in abundance, may be the key as they not only ward off deleterious environmental hazards, but they have also been known to produce wealth by adding value through ecology. Recycled Waste Materials in Concrete Construction: Emerging Research and Opportunities is a detailed scholarly resource that discusses different types of industrial, agricultural, and natural wastes that are either currently in use in the concrete industry or demonstrate potential for future use and how they can be used as additives or replacements for cement and other construction materials. Highlighting topics such as engineering properties, material durability, and raw materials, this book targets engineers, construction professionals, contractors, consulting firms, government officials, cement and waste material industries, policymakers, academicians, and researchers.

computing techniques. In recent years, the interest of the scientific community towards efficient energy systems has significantly increased. One of the reasons is certainly related to the change in the temperature of the planet, which has increased by 0.76 °C with respect to preindustrial levels, according to the Intergovernmental Panel on Climate Change (IPCC), and is still increasing. The European Union considers it vital to prevent global warming from exceeding 2 °C with respect to pre-industrial levels, as it has been proven that this will result in irreversible and potentially catastrophic changes. These changes in climate are mainly caused by greenhouse gas emissions related to human activities, and can be drastically reduced by employing energy systems for the heating and cooling of buildings, as well as for power production, characterized by high efficiency levels and/or based on renewable energy sources. This Special Issue, published in the Energies journal, includes 13 contributions from across the world, including a wide range of applications such as hybrid residential renewable energy systems, desiccant-based air handling units, heat exchanges for engine WHR, solar chimney systems, and other interesting topics.

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This book addresses selected topics in electrical engineering, electronics and mechatronics that have posed serious challenges for both the scientific and engineering communities in recent years. The topics covered range from mathematical models of electrical and electronic components and systems, to simulation tools implemented for their analysis and further developments; and from multidisciplinary optimization, signal processing methods and numerical results, to control and diagnostic techniques. By bridging theory and practice in the modeling, design and optimization of electrical, electromechanical and electronic systems, and by adopting a multidisciplinary perspective, the book provides researchers and practitioners with timely and extensive information on the state of the art in the field — and a source of new, exciting ideas for further developments and collaborations. The book presents selected results of the XIII Scientific

Conference on Selected Issues of Electrical Engineering and Electronics (WZEE 2016), held on May 04–08, 2016, in Rzeszów, Poland. The Conference was organized by the Rzeszów Division of Polish Association of Theoretical and Applied Electrical Engineering (PTETiS) in cooperation with the Faculty of Electrical and Computer Engineering of the Rzeszów University of Technology.

The importance of electric arc furnace steelmaking is evident from the escalated world production seen in steel industry. This book presents systematic and complete details on the current state of knowledge about metallurgical processes carried out in the electric arc furnace. It includes principles of construction of electric arc furnaces, applied construction solutions, and their operations (together with auxiliary/supportive devices). Modern technologies of melting of various grades steel are detailed, considering the participation of secondary metallurgy including theoretical backgrounds of chemical processes and reactions. It contains theoretical analysis and results of laboratory, model, and industrial tests. Features: Covers the practical aspects of electric arc furnace steelmaking including technological process. Discusses the operation issues of an electric arc furnace in a technical and technological context. Presents a systematic and complete knowledge about relevant construction solutions and metallurgical processes. Includes practical industrial benchmark indicators in the scope of equipment and technology. Analyses practical case studies from industry. This book aims at researchers, professionals and graduate students in Metallurgical Engineering, Materials Science, Electric Power Supply, Environmental Engineering, and Mechanical Engineering.

This book is based on the author's 50+ years experience in the power and distribution transformer industry. The first few chapters of the book provide a step-by-step procedures of transformer design. Engineers without prior knowledge or exposure to design can follow the procedures and calculation methods to acquire reasonable proficiency necessary to designing a transformer. Although the transformer is a mature product, engineers working in the industry need to understand its fundamentals and design to enable them to offer products to meet the challenging demands of the power system and the customer. This book can function as a useful guide for practicing engineers to undertake new designs, cost optimization, design automation etc., without the need for external help or consultancy. The book extensively covers the design processes with necessary data and calculations from a wide variety of transformers, including dry-type cast resin transformers, amorphous core transformers, earthing transformers, rectifier transformers, auto transformers, transformers for explosive atmospheres, and solid-state transformers. The other subjects covered include, carbon footprint calculation of transformers, condition monitoring of transformers and design optimization techniques. In addition to being useful for the transformer industry, this book can serve as a reference for power utility engineers, consultants, research scholars, and teaching faculty at universities.

Characteristics and Uses of Steel Slag in Building Construction focuses predominantly on the utilization of ferrous slag (blast furnace and steel slag) in building construction. This extensive literature review discusses the worldwide utilization of ferrous slag and applications in all sectors of civil engineering, including structural engineering, road construction, and hydro-technical structures. It presents cutting-edge research on the characteristics and properties of ferrous slag, and its overall impact on the environment. Comprehensively reviews the literature on the use of blast furnace and steel slag in civil engineering Examines the environmental impact of slag production and its effect on human health Presents cutting-edge research from worldwide studies on the use of blast furnace and steel slag

Public Land Survey System MAP REQUIREMENTS FOR PLANNING AND ENVIRONMENTAL ENGINEERING
Desirable Control Survey and Mapping System APPLICATIONS OF MAPPING SYSTEM Flood Hazard Area Mapping
Wetland Area Mapping Public Works Management Information System SURVEY METHODS REFERENCES CHAPTER
6? PLANNING AND ENVIRONMENTAL ASSESSMENT Kurt Bauer Southeastern Wisconsin Regional Planning
Commission INTRODUCTION DEFINITION OF TERMINOLOGY CRITERIA FOR GOOD PLANNING INSTITUTIONAL
STRUCTURE FOR URBAN PLANNING THE COMPREHENSIVE PLAN THE PLANNING PROCESS Inventory and
Analysis Formulation of Objectives and Standards Identification of Development Requirements Design and Evaluation of
Alternative Plans Plan Implementation and Policy Development PUBLIC WORKS DEVELOPMENT PROCESS Outline
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A Water Supply Facilities Planning Report PUBLIC PARTICIPATION CONTINUING NATURE OF COMPREHENSIVE
PLANNING PROCESS PROJECT PLANNING SITE PLANNING Site Selection Site Assessment Generally Desirable
Site Features Site Inventory Improvements Needed Site Design LAND SUBDIVISION Subdivision Design Site Selection
and Assessment Alternative Subdivision Design Types Utility Services Fiscal Analysis PROGRAM PLANNING
OPERATIONAL PLANNING Public Health Element of Comprehensive Plan ROLE OF ENGINEERING
ENVIRONMENTAL ASSESSMENT AND IMPACT STATEMENTS ENVIRONMENTAL IMPACT ANALYSIS National
Environmental Policy Act (NEPA) Terminology Scoping Recommended Format for Environmental Impact Statement
Content of an Environmental Impact Statement Selection and Analysis of Alternatives Comprehensive Assessment
REFERENCES.

This collection focuses on ferrous and non-ferrous metallurgy where ionic melts, slags, fluxes, or salts play important roles in industrial growth and economy worldwide. Technical topics included are: thermodynamic properties and phase diagrams and kinetics of slags, fluxes, and salts; physical properties of slags, fluxes, and salts; structural studies of slags; interfacial and process phenomena involving foaming, bubble formation, and drainage; slag recycling, refractory erosion/corrosion, and freeze linings; and recycling and utilization of metallurgical slags and models and their applications in process improvement and optimization. These topics are of interest to not only traditional ferrous and non-ferrous metal industrial processes but also new and upcoming technologies.

This book gathers the latest advances, innovations, and applications in the field of construction design and management, as presented by researchers and engineers at the International Conference Industrial and Civil Construction 2021, held in

Belgorod, Russia, on January 18-19, 2021. It covers highly diverse topics, including building materials, building constructions, structural mechanics and theory of structures, industrial and civil construction, environmental engineering and sustainability. The contributions, which were selected by means of a rigorous international peer-review process, highlight numerous exciting ideas that will spur novel research directions and foster multidisciplinary collaborations. . Combustion Engineering & Gas Utilisation is a practical guide to sound engineering practice for engineers from industry and commerce responsible for the selection, installation, designing and maintenance of efficient and safe gas fired heating equipment.

The three volume set LNCS 3496/3497/3498 constitutes the refereed proceedings of the Second International Symposium on Neural Networks, ISSN 2005, held in Chongqing, China in May/June 2005. The 483 revised papers presented were carefully reviewed and selected from 1.425 submissions. The papers are organized in topical sections on theoretical analysis, model design, learning methods, optimization methods, kernel methods, component analysis, pattern analysis, systems modeling, signal processing, image processing, financial analysis, control systems, robotic systems, telecommunication networks, incidence detection, fault diagnosis, power systems, biomedical applications, industrial applications, and other applications.

This volume constitutes the proceedings of the 10th International Conference on Artificial Intelligence and Soft Computing, ICAISC'2010, held in Zakopane, Poland in June 13-17, 2010. The articles are organized in topical sections on Fuzzy Systems and Their Applications; Data Mining, Classification and Forecasting; Image and Speech Analysis; Bioinformatics and Medical Applications (Volume 6113) together with Neural Networks and Their Applications; Evolutionary Algorithms and Their Applications; Agent System, Robotics and Control; Various Problems of Artificial Intelligence (Volume 6114).

This book equips a reader with knowledge necessary for critical analysis of innovations in electric arc furnaces and helps to select the most effective ones and for their successful implementation. The book also covers general issues related to history of development, current state and prospects of steelmaking in Electric Arc Furnaces. Therefore, it can be useful for everybody who studies metallurgy, including students of colleges and universities. The modern concepts of mechanisms of Arc Furnace processes are discussed in the book at the level sufficient to solve practical problems: To help readers lacking knowledge required in the field of heat transfer as well as hydro-gas dynamics, it contains several chapters which provide the required minimum of information in these fields of science. In order to better assess different innovations, the book describes experience of the application of similar innovations in open-hearth furnaces and oxygen converters. Some promising ideas on key issues regarding intensification of the heat, which are of interest for developers of new processes and equipment for Electric Arc Furnaces, are also the concern of the book. It should be noted, that carrying out the simplified calculations as distinct from using "off the shelf" programs greatly promotes comprehensive understanding of physical basics of processes and effects produced by various factors. This book gives numerous examples of such calculations performed by means of simplified methods and formulas. Getting familiar with material in this book will allow the reader to perform required calculations on his / her own without any difficulties.

This book gathers the best peer-reviewed papers presented at the Italian Concrete Days national conference, held in Lecco, Italy, on June 14-15, 2018. The conference topics encompass the aspects of design, execution, rehabilitation and control of concrete structures, with particular reference to theory and modeling, applications and realizations, materials and investigations, technology and construction techniques. The contributions amply demonstrate that today's structural concrete applications concern not only new constructions, but more and more rehabilitation, conservation, strengthening and seismic upgrading of existing premises, and that requirements cover new aspects within the frame of sustainability, including environmental friendliness, durability, adaptability and reuse of works and / or materials. As such the book represents an invaluable, up-to-the-minute tool, providing an essential overview of structural concrete, as well as all new materials with cementitious matrices.

This Special Issue delivered 16 scientific papers, with the aim of exploring the application of carbon capture and storage technologies for mitigating the effects of climate change. Special emphasis has been placed on mineral carbonation techniques that combine innovative applications to emerging problems and needs. The aim of this Special Issue is to contribute to improved knowledge of the ongoing research regarding climate change and CCS technological applications, focusing on carbon capture and storage practices. Climate change is a global issue that is interrelated with the energy and petroleum industry.

The book covers innovative research and its applications in infrastructure development and related areas. This book discusses the state-of-art development, challenges and unsolved problems in the field of infrastructure/smart development, control engineering, power system infrastructure, smart infrastructure, waste management and renewable energy. The solutions discussed in this book encourage the researchers and IT professionals to put the methods into their practice.

Artificial Intelligence and Soft Computing – ICAISC 2008 9th International Conference Zakopane, Poland, June 22-26, 2008, Proceedings Springer Science & Business Media

This book presents the proceedings of the International Conference on Emerging Research in Electronics, Computer Science and Technology (ICERECT) organized by PES College of Engineering in Mandya. Featuring cutting-edge, peer-reviewed articles from the field of electronics, computer science and technology, it is a valuable resource for members of the scientific research community.

This collection gives broad and up-to-date results in the research and development of materials characterization and processing. Coverage is well-rounded from minerals, metals, and materials characterization and developments in extraction to the fabrication and performance of materials. In addition, topics as varied as structural steels to electronic materials to plant-based composites are explored. The latest research presented in this wide area make this book both timely and relevant to the materials science field as a whole. The book explores scientific processes to characterize materials using modern technologies, and focuses on the interrelationships and interdependence among processing, structure, properties, and performance of materials. Topics covered include ferrous materials, non-ferrous materials, minerals, ceramics, clays, soft materials, method development, processing, corrosion, welding, solidification, composites, extraction, powders, nanomaterials, advanced materials, and several others.

This Special Issue "Sustainable Designed Pavement Materials" has been proposed and organized as a means to present recent developments in the field of environmentally-friendly designed pavement materials. For this reason, articles included in this special issue relate to different aspects of pavement materials, from industry solid waste recycling to pavement materials recycling, from pavement materials modification to asphalt performance characterization, from pavement defect detection to pavement maintenance, and from asphalt pavement to cement concrete pavement.

The hot rolling technology is the most widely used method of shaping metals and is particularly important in the manufacture of steel for use in construction and other industries. In metalworking, rolling is a metal forming process in which metal stock is passed through a pair of rolls. Rolling is classified according to the temperature of the metal rolled. If the temperature of the metal is above its re crystallization temperature, then the process is termed as hot rolling. The hot mills using plain rolls were already being employed by the end of the seventeenth century. But the industrial revolution in the nineteenth century saw a new horizon in steel making process, with the considerably expanded markets for rods, rails and structural section, provided further impetus to the development of hot rolling. The basic use of hot rolling mills is to shape up the larger pieces of billets and slabs into narrow and desired forms. These metal pieces are heated over their re crystallization temperature and are then moved between the rollers so as to form thinner cross sections. Hot rolling mill thus helps in reducing the size of a metal thereby molding it into the desired form and shape. Rolling mills perform the function to reform the metal pieces such as billet and ingot whilst maintaining its well equipped micro structure into bar, wire, sheet, strip, and plate. Hot rolled products are frequently categorized into plain carbon, alloy, high strength alloy, dual phase, electrical and stainless steels. This book provides a descriptive illustration of pre treatment of hot metal, the basic principles of heat treatment, types of hot rolled products, principles of measurement of rolling parameters, steel making refractories, performance characteristics of transducers, causes of gauge variation , main factors affecting gauge performance, gauge control sensors and actuators, automatic gauge control systems, strip tension control system in cold mills, flat rolling practice cold rolling, pack rolling, steelmaking refractories, refining of stainless steels, special considerations in refining stainless steels etc. This book is a unique compilation and it draws together in a single source technical principles of steel making by hot rolling process up to the finished product. This handbook will be very helpful to its readers who are just beginners in this field and will also find useful for upcoming entrepreneurs, engineers, personnel responsible for the operation of hot rolling mills, existing industries, technologist, technical institution etc. TAGS Steel Hot Rolling, Hot Rolling of Steel, Metal Rolling, Metal Forming Process, Steel Rolling Process, Metalworking, Flat Rolling Fundamentals, Physical Metallurgy, Hot Rolled Steel, Rolling Mills, Pre-Treatment of Hot Metal, Heat Treatments for Hot-Rolled Products, Steelmaking Refractories, Refining of Stainless Steels, Steel Heating for Hot Rolling, Oxygen Steelmaking Processes, Best small and cottage scale industries, Business guidance for steel rolling industry, Business Plan for a Startup Business, Business plan for steel rolling mill, Business start-up, Fusion welding processes, Great Opportunity for Startup, Hot rolled steel properties, Hot rolling mill process, Hot Rolling Mill, Hot Rolling mill, Hot Strip Mill, How is Steel Produced, How to Start a Steel Production Business, How to start a successful steel rolling business, How to start steel mill industry, How to Start Steel rolling Industry in India, How to start steel rolling mill, Indian Steel Industry, Industrial steel rolling mill, Modern small and cottage scale industries, Modern steel making technology, Most Profitable Steel Business Ideas, New small scale ideas in Steel rolling industry, Opportunity Steel Rolling Mill, Plate Mill, Process & Applications, Process of steelmaking, Profitable small and cottage scale industries, Progress and Prospect of Rolling Technology, Project for startups, Rod and Bar Rolling, Rod and bar rolling, Rolling Metalworking, Rolling Mill for Steel Bars, Rolling process, Setting up and opening your steel rolling Business, Small scale Commercial steel rolling business, Small Scale Steel rolling Projects, Small Start-up Business Project, Start a Rolling Mill Industry, Start steel rolling mill in India, Start up India, Stand up India, Starting a Steel Business, Starting a Steel rolling Business, Starting Steel Mini Mill, Start-up Business Plan for steel rolling, Startup Project for steel rolling business, Startup project plan, Startup Project, Steel and hot rolling Business, Steel Based Profitable Projects, Steel Based Small Scale Industries Projects, Steel business plan, Steel hot rolling process, Steel Industry in India, Steel making and rolling, Steel making Projects, Steel making technology, Steel Making, Steel manufacturing process, Steel mill process, Steel mill, Steel production process, Steel rerolling mill feasibility start up, Steel rolling Industry in India, Steel rolling machine factory, Steel rolling mill industry demand, Steel rolling mill industry overview, Steel rolling mill industry, Steel rolling mill market forecast, Steel rolling mill market growth, Steel rolling mill market, Steel rolling mill size, Steel rolling mill starts production, Steel rolling mill, Steel Rolling Technology, Steelmaking, Steelmaking Processes, Types of rolling mills

Combustion technology has traditionally been dominated by air/fuel combustion. However, two developments have increased the significance of oxygen-enhanced combustion—new technologies that produce oxygen less expensively and the increased importance of environmental regulations. Advantages of oxygen-enhanced combustion include less pollutant emissions as well as increased energy efficiency and productivity. Oxygen-Enhanced Combustion, Second Edition compiles information about using oxygen to enhance industrial heating and melting processes. It integrates fundamental principles, applications, and equipment design in one volume, making it a unique resource for specialists implementing the use of oxygen in combustion systems. This second edition of the bestselling book has more than doubled in size. Extensively updated and expanded, it covers significant advances in the technology that have occurred since the publication of the first edition. What's New in This Edition Expanded from 11 chapters to 30, with most of the existing chapters revised A broader view of oxygen-enhanced combustion, with more than 50 contributors from over 20 organizations around the world More coverage of fundamentals, including fluid flow, heat transfer, noise, flame impingement, CFD modeling, soot formation, burner design, and burner testing New chapters on applications such as flameless combustion, steel reheating, iron production, cement production, power generation, fluidized bed combustion, chemicals and petrochemicals, and diesel engines This book offers a unified, up-to-date look at important commercialized uses of oxygen-enhanced combustion in a wide range of industries. It brings together the latest knowledge to assist those researching, engineering, and implementing combustion in power plants, engines, and other applications.

This book covers virtually all technical aspects related to the selection, processing, use, and analysis of superalloys. The text of this new second edition has been completely revised and expanded with many new figures and tables added. In developing this new edition, the focus has been on providing comprehensive and practical coverage of superalloys technology. Some highlights include the most complete and up-to-date presentation available on alloy melting. Coverage of alloy selection provides many tips and guidelines that the reader can use in identifying an appropriate alloy for a specific application. The relation of properties and microstructure is covered in more detail than in previous books.

The two volume set LNCS 5506 and LNCS 5507 constitutes the thoroughly refereed post-conference proceedings of the 15th International Conference on Neural Information Processing, ICONIP 2008, held in Auckland, New Zealand, in November 2008. The 260 revised full papers presented were carefully reviewed and selected from numerous ordinary paper submissions and 15 special organized sessions. 116 papers are published in the first volume and 112 in the second volume. The contributions deal with topics in the areas of data mining methods for cybersecurity, computational models and their applications to machine learning and pattern recognition, lifelong incremental learning for intelligent systems, application of intelligent methods in ecological

informatics, pattern recognition from real-world information by svm and other sophisticated techniques, dynamics of neural networks, recent advances in brain-inspired technologies for robotics, neural information processing in cooperative multi-robot systems.

The Special Issue presents almost 40 papers on recent research in modeling of pyrometallurgical systems, including physical models, first-principles models, detailed CFD and DEM models as well as statistical models or models based on machine learning. The models cover the whole production chain from raw materials processing through the reduction and conversion unit processes to ladle treatment, casting, and rolling. The papers illustrate how models can be used for shedding light on complex and inaccessible processes characterized by high temperatures and hostile environment, in order to improve process performance, product quality, or yield and to reduce the requirements of virgin raw materials and to suppress harmful emissions.

This volume constitutes the refereed proceedings of the 14th International Software Product Line Conference, SPLC 2010, held on Jeju Island, South Korea, in September 2010.

This two volume set (LNCS 6791 and LNCS 6792) constitutes the refereed proceedings of the 21th International Conference on Artificial Neural Networks, ICANN 2011, held in Espoo, Finland, in June 2011. The 106 revised full or poster papers presented were carefully reviewed and selected from numerous submissions. ICANN 2011 had two basic tracks: brain-inspired computing and machine learning research, with strong cross-disciplinary interactions and applications.

This book reports on innovative research and developments in automation. The chapters spans a wide range of disciplines, including communication engineering, power engineering, control engineering, instrumentation, signal processing and cybersecurity. Emphasis is given to methods and findings aimed at fostering better control and monitoring of industrial and manufacturing processes, and improving safety. Based on the International Russian Automation Conference, held in September 8-14, 2019, in Sochi, Russia, the book provides academics and professionals with a timely overview and extensive information on the state of the art in the field of automation and control systems, and is expected to foster new idea, as well as collaboration between different groups in different countries.

"Originally developed to help staff, clients, and consultants prepare and implement operations supported by the Bank Group, this Handbook updates and replaces the Environmental Guidelines issued in 1988 and reflects changes both in technology and in pollution management policies and practices. It focuses attention on the environmental and economic benefits of preventing pollution and emphasizes cleaner production and good management techniques."--BOOK JACKET.

In Europe, thermoprocessing is the third largest energy consumption sector following traffic and room heating. Its structure is very much diversified and complex. Therefore it is split into a large number of subdivisions, each of them having a high importance for the industrial economy. Accordingly we find the application know-how for the design and the execution of respective equipment represented by a multitude of small but very specialized and significant companies and their experts. As a result there was only little chance to find a comprehensive survey of the practical side of this technology so far. This gap is now filled by the new "Handbook of Thermoprocessing Technologies" based on the contributions of many highly experienced, outstanding engineers working in this field. The main intention of this book is the presentation of practical thermal processing for the improvement of material and parts in industrial application. Additionally, a summary of respective thermal and material science fundamentals is given as well as basic fuel-related and electrical engineering knowledge for this technology and finally design aspects, components and safety requirements for the necessary heating installations are covered. In conclusion, a very wide and competent state of the art description is now available for all manufacturers and users of thermoprocessing equipment. But also specialists from neighbouring fields, students and all those who are generally interested in this important but widely unknown technology will find a quick survey here as well as a very profound expertise.

Contributed articles presented in the International Conference on Advances in the Theory of Ironmaking and Steelmaking; organized by the Dept. of Material Engineering, IISc., Bangalore.

Business-as-usual in terms of industrial and technological development – even if based on a growing fear of pollution and shortages of natural resources – will never deliver sustainable development. However, the growing interest in recent years in the new science of industrial ecology (IE), and the idea that industrial systems should mimic the quasi-cyclical functions of natural ecosystems in an 'industrial food chain', holds promise in addressing not only short-term environmental problems but also the long-term holistic evolution of industrial systems. This possibility requires a number of key conditions to be met, not least the restructuring of our manufacturing and consumer society to reduce the effects of material and energy flows at the very point in history when globalisation is rapidly increasing them. This book sets out to address the theoretical considerations that should be made implicit in future research as well as practical implementation options for industry. The systematic recovery of industrial wastes, the minimisation of losses caused by dispersion, the dematerialisation of the economy, the requirement to decrease our reliance on fuels derived from hydrocarbons and the need for management systems that help foster inter-industry collaboration and networks are among the topics covered. The book is split into four sections. First, the various definitions of IE are outlined. Here, important distinctions are made between industrial metabolism and IE. Second, a number of different industrial sectors, including glass, petroleum and electric power, are assessed with regard to the operationalisation of industrial ecology. Eco-industrial Parks and Networks are also analysed. Third, the options for overcoming obstacles that stand in the way of the closing of cycles such as the separation and screening of materials are considered and, finally, a number of implications for the future are assessed. The contributions to Perspectives on Industrial Ecology come from the leading thinkers working in this field at the crossroads between a number of different disciplines: engineering, ecology, bio-economics, geography, the social sciences and law.

This book presents select peer-reviewed proceedings of the International Conference on Advances in Mechanical Engineering (ICAME 2020). The contents cover latest research in several areas such as advanced energy sources, automation, mechatronics and robotics, automobiles, biomedical engineering, CAD/CAM, CFD, advanced engineering materials, mechanical design, heat and mass transfer, manufacturing and production processes, tribology and wear, surface engineering, ergonomics and human factors, artificial intelligence, and supply chain management. The book brings together advancements happening in the different domains of mechanical engineering, and hence, this will be useful for students and researchers working in mechanical engineering.

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