

Solaredge Monitoring Portal User Guide

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This book presents the state of the art, challenges and future trends in automotive software engineering. The amount of automotive software has grown from just a few lines of code in the 1970s to millions of lines in today's cars. And this trend seems destined to continue in the years to come, considering all the innovations in electric/hybrid, autonomous, and connected cars. Yet there are also concerns related to onboard software, such as security, robustness, and trust. This book covers all essential aspects of the field. After a general introduction to the topic, it addresses automotive software development, automotive software reuse, E/E architectures and safety, C-ITS and security, and future trends. The specific topics discussed include requirements engineering for embedded software systems, tools and methods used in the automotive industry, software product lines, architectural frameworks, various related ISO standards, functional safety and safety cases, cooperative intelligent transportation systems, autonomous vehicles, and security and privacy issues. The intended audience includes researchers from academia who want to learn what the fundamental challenges are and how they are being tackled in the industry, and practitioners looking for cutting-edge academic findings. Although the book is not written as lecture notes, it can also be used in advanced master's-level courses on software and system engineering. The book also includes a number of case studies that can be used for student projects.

Renewable Heating and Cooling: Technologies and Applications presents the latest information on the generation of heat for industry and domestic purposes, an area where a significant proportion of total energy is consumed. In Europe, this figure is estimated to be almost 50%, with the majority of heat generated by the consumption of fossil fuels. As there is a pressing need to increase the uptake of renewable heating and cooling (RHC) to reduce greenhouse gas emissions, this book provides a comprehensive and authoritative overview on the topic. Part One introduces key RHC technologies and discusses RHC in the context of global heating and cooling demand, featuring chapters on solar thermal process heat generation, deep geothermal energy, and solar cooling technologies. Part Two explores enabling technologies, special applications, and case studies with detailed coverage of thermal energy storage, hybrid systems, and renewable heating for RHC, along with case studies in China and Sweden. Users will find this book to be an essential resource for lead engineers and engineering consultants working on renewable heating and cooling in engineering companies, as well as academics and R&D professionals in private research institutes who have a particular interest in the subject matter. Includes coverage on biomass, solar thermal, and geothermal renewable heating and cooling technologies Features chapters on solar thermal process heat generation, deep geothermal energy, solar cooling technologies, and special applications Presents case studies with detailed coverage of thermal energy storage, hybrid systems, and renewable heating for RHC Explores enabling technologies and special applications

#1 NEW YORK TIMES BESTSELLER • “The clearest and best book out there to get you on the path to riches. This one's special!”—Jim Cramer, host of CNBC's Mad Money “Great tools for anyone wanting to dabble in the stock market.”—USA Today Phil Town is a very wealthy man, but he wasn't always. In fact, he was living on a salary of \$4,000 a year when some well-timed advice launched him down a highway of investing self-education that revealed what the true “rules” are and how to make them work in one's favor. Chief among them, of course, is Rule #1: “Don't lose money.” In this updated edition to the #1 national bestseller, you'll learn more of Phil's fresh, think-outside-the-box rules, including: • Don't diversify • Only buy a stock when it's on sale • Think long term—but act short term to maximize your return • And most of all, beat the big investors at their own game by using the tools designed for them! As Phil demonstrates in these pages, giant mutual funds can't help but regress to the mean—and as we've all learned in recent years, that mean could be very disappointing indeed. Fortunately, Rule #1 takes readers step-by-step through a do-it-yourself process, equipping even the biggest investing-phobes with the tools they need to make quantum leaps toward financial security—regardless of where the market is headed.

Transport Revolutions: Moving People and Freight without Oil sets out the challenges to our growing dependence on transport fuelled by low-priced oil. These challenges include an early peak in world oil production and profound climate change resulting in part from oil use. It proposes responses to ensure effective, secure movement of people and goods in ways that make the best use of renewable sources of energy while minimizing environmental impacts. Transport Revolutions synthesizes engineering, economics, environment, organization, policy and technology, and draws extensively on current data to present important conclusions. The authors argue that land transport in the first half of the 21st century will feature at least two revolutions. One will involve the use of electric drives rather than internal combustion engines. Another will involve powering many of these drives directly from the electric grid - as trains and trolley buses are powered today - rather than from on-board fuel. They go on to discuss marine transport, whose future is less clear, and aviation, which could see the most dramatic breaks from current practice. With its expert analysis of the politics and business of transport, Transport Revolutions is essential reading for professionals and students in transport, energy, town planning and public policy.

An optimistic--but realistic and feasible--action plan for fighting climate change while creating new jobs and a healthier environment: electrify everything. Climate change is a planetary emergency. We have to do something now—but what? Saul Griffith has a plan. In Electrify, Griffith lays out a detailed blueprint—optimistic but feasible—for fighting climate change while creating millions of new jobs and a healthier environment. Griffith's plan can be summed up simply: electrify everything. He explains exactly what it would take to transform our infrastructure, update our grid, and adapt our households to make this possible. Billionaires may contemplate escaping our worn-out planet on a private rocket ship to Mars, but the rest of us, Griffith says, will stay and fight for the future. Griffith, an engineer and inventor, calls for grid neutrality, ensuring that households, businesses, and utilities operate as equals; we will have to rewrite regulations that

were created for a fossil-fueled world, mobilize industry as we did in World War II, and offer low-interest “climate loans.” Griffith’s plan doesn’t rely on big, not-yet-invented innovations, but on thousands of little inventions and cost reductions. We can still have our cars and our houses—but the cars will be electric and solar panels will cover our roofs. For a world trying to bounce back from a pandemic and economic crisis, there is no other project that would create as many jobs—up to twenty-five million, according to one economic analysis. Is this politically possible? We can change politics along with everything else.

This Cookbook contains step-by-step instructions for Tableau users to create effective graphics. The book is designed in such a way that you can refer to it chapter by chapter; you can look at the list of recipes and read them in no particular order. You'll gain the most from this book if you have basic understanding of various chart types and of their importance. Knowing when to employ a certain graphic will be equally useful. This book will get you up to speed if you just started using Tableau. You'll find this book useful if you spend a lot of time conducting data analysis and creating reports.

Strategic trends that will influence business, government, education, media and society in the coming year.

Build smart, efficient, and fast enterprise-grade web implementation of the microservices architecture that can be easily scaled. Key Features Write easy-to-maintain lean and clean code with Kotlin for developing better microservices Scale your Microservices in your own cloud with Docker and Docker Swarm Explore Spring 5 functional reactive web programming with Spring WebFlux Book Description With Google's inclusion of first-class support for Kotlin in their Android ecosystem, Kotlin's future as a mainstream language is assured. Microservices help design scalable, easy-to-maintain web applications; Kotlin allows us to take advantage of modern idioms to simplify our development and create high-quality services. With 100% interoperability with the JVM, Kotlin makes working with existing Java code easier. Well-known Java systems such as Spring, Jackson, and Reactor have included Kotlin modules to exploit its language features. This book guides the reader in designing and implementing services, and producing production-ready, testable, lean code that's shorter and simpler than a traditional Java implementation. Reap the benefits of using the reactive paradigm and take advantage of non-blocking techniques to take your services to the next level in terms of industry standards. You will consume NoSQL databases reactively to allow you to create high-throughput microservices. Create cloud-native microservices that can run on a wide range of cloud providers, and monitor them. You will create Docker containers for your microservices and scale them. Finally, you will deploy your microservices in OpenShift Online. What you will learn Understand microservice architectures and principles Build microservices in Kotlin using Spring Boot 2.0 and Spring Framework 5.0 Create reactive microservices that perform non-blocking operations with Spring WebFlux Use Spring Data to get data reactively from MongoDB Test effectively with JUnit and Kotlin Create cloud-native microservices with Spring Cloud Build and publish Docker images of your microservices Scaling microservices with Docker Swarm Monitor microservices with JMX Deploy microservices in OpenShift Online Who this book is for If you are a Kotlin developer with a basic knowledge of microservice architectures and now want to effectively implement these services on enterprise-level web applications, then this book is for you This book provides insights on a broad spectrum of renewable and sustainable energy technologies from the world’s leading experts. It highlights the latest achievements in policy, research and applications, keeping readers up-to-date on progress in this rapidly advancing field. Detailed studies of technological breakthroughs and optimizations are contextualized with in-depth examinations of experimental and industrial installations, connecting lab innovations to success in the field. The volume contains selected papers presented at technical and plenary sessions at the World Renewable Energy Congress, the world's premier conference on renewable energy and sustainable development. Held every two years, the Congress provides an international forum that attracts hundreds of delegates from more than 60 countries.

GN 8 - Earthing and Bonding is of interest to all those who are involved with specifying, designing, installing or verifying electrical installations and it covers this essential additional areas BS 7671. The market includes consulting engineers, electricians, electrical installers, inspectors and technicians and can also serve as a guide for surveyors. Guidance Note 8 - Earthing and Bonding provides a comprehensive guide to this subject. The book is a key is a guide on these aspects BS 7671 (The IET Wiring Regulations), the national standard to which all domestic and industrial wiring must conform. The Guide has been revised to align with the 17th Edition Amendment No 1.

It's said that whatever action you do, it reflects the fate accordingly. But What if you are facing difficulties even after doing everything in limits of Humanity? It leads to huge disappointment and sometimes you can end up choosing the wrong path in despair. This world runs by the laws of God and it never discriminate with anyone. In case of difficulties even after good deeds there can be only two reasons; either there was something very destructive in your destiny which is being converted into negligible pain or nature wants to direct you in a direction where you are needed. Read out how a boy understands the nature's desire through unexpected events in his life.

The report gives a state-of-the-art overview of policies, regulations and incentives for the sustainable use of solar-powered irrigation technologies (SPIS) around the world. SPIS offer a viable, low-tech energy solution for irrigated agriculture, providing a reliable source of energy in remote areas, contributing to rural electrification, reducing energy costs for irrigation and enabling low emission agriculture. Nevertheless, SPIS have a significant initial investment cost and require innovative financing models to overcome this barrier to adoption, especially for small-scale farmers. Technical knowledge and service infrastructure is needed to ensure that the systems run effectively. Moreover, SPIS – if not adequately managed - bear the risk of fostering unsustainable water use as lower energy costs may lead to over-abstraction of groundwater. This report looks at how different countries work to create an enabling environment for SPIS technologies, while managing the risks that come with it.

This generic risk assessment examines the hazards, risks and control measures relating to fire and rescue personnel, the personnel of other agencies, and members of the public dealing with incidents involving electricity. The scope of this generic risk assessment relates to two basic types of incident: (i) Fires in equipment or premises or sites using, distributing or producing electricity; (ii) Rescue of casualties in contact or within close proximity to live electrical equipment

Considers cost and optimization problems from the manufacturer's and the buyer's points of view. The work discusses a variety of warranty policies and the mathematical models for the analysis of related engineering and management issues.

All standard consumer product warranties are covered.

Human Performance and Ergonomics brings together a comprehensive and modern account of how the context of performance is crucial to understanding behavior. Environment provides both constraints and opportunities to individuals, such that external conditions may have reciprocal or interactive effects on behavior. The book begins with an account of research in human factors and engineering, with application of research to real world environments, methodological concerns, and rumination on current and future trends. The book proceeds to how technology has moved from being designed to help human physical survival to helping humans achieve "quality of life" improvements. Real world examples are explored in detail including hearing technology, driving, and aviation. Issues of control, maneuvering, and planning are discussed in conjunction with how intention and expectancy affect behavior. The fit between human and environment is examined as a dynamic interaction, and many chapters address the all important human-machine communication, particularly that between humans and computers. The book closes with a reminder that even our technological environment is filled with other people, with whom we must interact personally or via technology, to achieve our larger goals. Teamwork is thus discussed for its integration of cognitive, behavioral, and affective components toward our achieving desired aims. * Includes the application of research in human factors in engineering to real world environments

* Discussion of both current and future trends is included * Real-world examples of how technology is now helping humans to achieve "quality of life" improvements are explored in detail including hearing technology, driving and aviation

* Many chapters examine the all important human/machine communication, particularly human-computer interaction (HCI)

This book presents selected papers from the 8th International Conference on Information and Communication Technologies in Agriculture, Food and Environment (HAICTA 2017) which examine sustainable rural development in the context of environmental, economic, and the socio-cultural dimension. This book raises awareness of the importance of sustainable management in agriculture using examples of actual industry cases, sustainable management practices, new forms of rural cooperation and entrepreneurship.

Power outages have considerable social and economic impacts, and effective protection schemes are crucial to avoiding them. While most textbooks focus on the transmission and distribution aspects of protective relays, Protective Relaying for Power Generation Systems is the first to focus on protection of motors and generators from a power generation perspective. It also includes workbook constructions that allow students to perform protection-related calculations in Mathcad® and Excel®. This text provides both a general overview and in-depth discussion of each topic, making it easy to tailor the material to students' needs. It also covers topics not found in other texts on the subject, including detailed time decrement generator fault calculations and minimum excitation limit. The author clearly explains the potential for damage and damaging mechanisms related to each protection function and includes thorough derivations of complex system interactions. Such derivations underlie the various rule-of-thumb setting criteria, provide insight into why the rules-of-thumb work and when they are not appropriate, and are useful for post-incident analysis. The book's flexible approach combines theoretical discussions with example settings that offer quick how-to information. Protective Relaying for Power Generation Systems integrates fundamental knowledge with practical tools to ensure students have a thorough understanding of protection schemes and issues that arise during or after abnormal operation.

This book presents an overview of the latest smart transportation systems, IoV connectivity frameworks, issues of security and safety in VANETs, future developments in the IoV, technical solutions to address key challenges, and other related topics. A connected vehicle is a vehicle equipped with Internet access and wireless LAN, which allows the sharing of data through various devices, inside as well as outside the vehicle. The ad-hoc network of such vehicles, often referred to as VANET or the Internet of vehicles (IoV), is an application of IoT technology, and may be regarded as an integration of three types of networks: inter-vehicle, intra-vehicle, and vehicular mobile networks. VANET involves several varieties of vehicle connectivity mechanisms, including vehicle-to-infrastructure (V2I), vehicle-to-vehicle (V2V), vehicle-to-cloud (V2C), and vehicle-to-everything (V2X). According to one survey, it is expected that there will be approximately 380 million connected cars on the roads by 2020. IoV is an important aspect of the new vision for smart transportation. The book is divided into three parts: examining the evolution of IoV (basic concepts, principles, technologies, and architectures), connectivity of vehicles in the IoT (protocols, frameworks, and methodologies), connected vehicle environments and advanced topics in VANETs (security and safety issues, autonomous operations, machine learning, sensor technology, and AI). By providing scientific contributions and workable suggestions from researchers and practitioners in the areas of IoT, IoV, and security, this valuable reference aims to extend the body of existing knowledge.

With the explosive growth in PV (photovoltaic) installations globally, the sector continues to benefit from important improvements in manufacturing technology and the increasing efficiency of solar cells, this timely handbook brings together all the latest design, layout and construction methods for entire PV plants in a single volume. Coverage includes procedures for the design of both stand-alone and grid-connected systems as well as practical guidance on typical operational scenarios and problems encountered for optimum PV plant performance. This comprehensive resource will benefit electrical engineer and other electrical professionals in PV systems, especially designers and installers of PV plants or the product manufacturing and testing supply chain. Advanced students on renewable energy courses will find this useful background reading and it will be an invaluable desk reference for PV plant builders and owners.

"IET Wiring Regulations BS 7671:2008 incorporating amendment number 1:2011"

Guns.

Content.

Distributed Energy Resources in Microgrids: Integration, Challenges and Optimization unifies classically unconnected aspects of microgrids by considering them alongside economic analysis and stability testing. In addition, the book presents well-founded mathematical analyses on how to technically and economically optimize microgrids via distributed energy resource integration. Researchers and engineers in the power and energy sector will find this information useful for combined scientific and economical approaches to microgrid integration. Specific sections cover microgrid performance, including key technical elements, such as

control design, stability analysis, power quality, reliability and resiliency in microgrid operation. Addresses the challenges related to the integration of renewable energy resources Includes examples of control algorithms adopted during integration Presents detailed methods of optimization to enhance successful integration

This book focuses on solar energy conversion systems that can be implemented in the built environment, at building or at community level. The quest for developing a sustainable built environment asks for specific solutions to provide clean energy based on renewable sources, and solar energy is considered one of the cleanest available energy on Earth. The specific issues raised by the implementation location are discussed, including the climatic profile distorted by the buildings, the available surface on the buildings for implementation, etc. This book also discusses the seasonal and diurnal variability of the solar energy resource in parallel with the variability of the electrical and thermal energy demand in the built environment (particularly focusing on the residential buildings). Solutions are proposed to match these variabilities, including the development of energy mixes with other renewables (e.g. geothermal or biomass, for thermal energy production). Specific solutions, including case studies of systems implemented on buildings all over the world, are presented and analyzed for electrical and for thermal energy production and the main differences in the systems design are outlined. The conversion efficiency (thus the output) and the main causes of energy losses are considered in both cases. The architectural constraints are additionally considered and novel solar energy converters with different shapes and colors are presented and discussed. The durability of the solar energy conversion systems is analyzed considering the specific issues that occur when these systems are implemented in the built environment; based on practical examples, general conclusions are formulated and specific aspects are discussed in relation to experimental results and literature data. With renewables implemented in the built environment likely to expand in the near future, this book represents welcome and timely material for all professionals and researchers that are aiming to provide efficient and feasible solutions for the sustainable built environment.

PV power plant integration into the grid has been a relevant topic of interest over the last years. Policies supported by governments, technology maturity, favorable incentives, and cost decreasing have significantly promoted the integration of PV power plants into power systems at the transmission and distribution levels. Nevertheless, some barriers remain in terms of forecasting generation, grid reliability, and power quality, which must be overcome for the massive PV integration into future power systems. Additionally, the ancillary services provided by these generation units are increasingly required by different agents to facilitate grid operation under a high proportion of renewables. Topics of interest for this Special Issue include the following areas: large-scale PV power plants, energy policies related to PV power plants, grid integration and interaction, PV power plant modeling, monitoring and case studies, communication systems for PV power plants integration, economic analyses, PV inverters and sizing analyses, new trends in PV technologies, and reviews.

Biology's focus on inquiry-based learning coupled with its precise writing style, hallmark art program, and integration of text and digital make it the perfect solution for today's AP Biology classroom. Mader's Biology program also provides valuable supplemental materials to help aid student success in the AP Biology Course (sold separately). Biology begins with an introductory chapter that helps to familiarize students with the AP Biology Curriculum by explaining each Big Idea through the use of thought provoking examples. This chapter also introduces students to the science practices to students and reviews the process of science. Each Unit Opener has been written to pinpoint how the chapters in the Unit relate to the AP Curriculum and the Big Ideas while each chapter opener provides the students with Essential Questions to help guide their reading. The features within the text contain content focused either on one of the AP Big Ideas or on the Nature of Science. Includes: Print Student Edition.

This report aims at integrating regional and country experiences and projects with regard to viable groundwater management practices for the future. It compiles and translates best available present scientific and technical knowledge on groundwater resources and their governance, which is often highly specialized, into simpler language and synoptic representations, accessible to a large public of policy and decision makers across development sectors. It serves as a technical basis for the visioning process, and for the definition of the Framework for Action on groundwater governance. This is one of 3 outputs of project GCP/GLO/277/GEF expected to be published under the names of its 5 partner organizations and widely circulated to policy and decision-makers in countries, as well as other stakeholders of groundwater governance and practitioners around the world. This outputs provides the technical basis for the other two: A Global Vision for Groundwater Governance 2030 and Global Framework for Action to Achieve the Vision on Groundwater Governance.

Sorenson, Wisconsin's deputy coroner Mattie Winston takes on the murder of Bernie Chase, the president of Twilight Nursing Home's board of directors, who was found with a mysterious substance on his body and had been suspected by some of offing the home's more expensive residents. Original.

Clutter impacts on our productivity, stresses us out and keeps us stuck. Why do we let our stuff stand in the way of the lives we dream about? Decluttering is great for our mental wellbeing, and when done right, it can be good for the planet too. When we rehome, repurpose or recycle the things we no longer need, we free up existing resources for others and reclaim our homes with less guilt. Less Stuff is a guide for people who find it difficult to declutter and who don't want to see things go to waste. Step by step, you'll explore finding your 'enough', learn how to let go of your old possessions without sending them to landfill, and eventually break the cycle of stuff. The end result is a planet with less strain, a home with more peace and a life with more meaning.

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