MCGRAW-HILL'S GUIDE TO UK WIRING STANDARDS FOR EARTHING & BONDING

David R. Stockin

A complete guide to the earthing and bonding requirements of the latest IET codes.

This on-the-job reference offers complete coverage of all technical aspects of electrical earthing and bonding. The book provides readers with the commentary and guidance they need to interpret and apply the earthing and bonding requirements of the 17th Edition of the IET wiring regulations (BS 7671:2008 incorporating Amendment No. 3:2015) - the electrical code used throughout the United Kingdom.

McGraw-Hill's Guide to UK Wiring Standards for Earthing & Bonding features in-depth discussions of each of the code’s standards, section by section, along with clear explanations and real-world examples. The handbook fully explains below-grade earthing, above-grade grounding/bonding and earthing, and earthing calculations.

- Written by a full-time electrical grounding/earthing engineer
- Includes answers to frequently asked questions
- Examples and illustrations throughout provide a clear understanding of each section of the code

David R. Stockin is manager of engineering at E&S Grounding Solutions. He was the lead electrical grounding/earthing engineer for Google Data Centers in America, Asia, and Europe. David has authored numerous publications on electrical grounding and earthing, including McGraw-Hill’s National Electrical Code 2014 Grounding & Earthing Handbook.
VLSI ANALOG CIRCUITS: ALGORITHMS, ARCHITECTURE, MODELING, AND CIRCUIT IMPLEMENTATION
Dr. Hongjiang Song

Complete coverage of VLSI signal processing circuits - from scientific theory to design and practical applications.

This comprehensive electrical engineering textbook offers in-depth discussions on the analysis, design, and application of VLSI analog filters and circuits in microelectronic systems and signal processing environments. The book shows how VLSI circuit techniques can be applied to solve real-world design problems that demand the scaling down of device geometries while meeting cost, power, function, reliability, and other constraints.

VLSI Analog Circuits: Algorithm, Architecture, Modeling, and Circuit Implementation has evolved from a course the author teaches at Arizona State University, where the material presented in the book has been classroom tested for more than 10 years. After a detailed overview of VLSI technology, readers will learn how to build accurate circuit models solve practical design problems.

- Mixed-mode circuit configurations RF signal processing and digital-based analog signal processing circuits are thoroughly covered
- In-depth coverage makes this book highly suitable both as a textbook and a professional reference
- Instructor materials include lecture PowerPoint slides and homework/project assignments
- Written by an experienced electrical engineering educator and expert in the field

Dr. Hongjiang Song is a lecturer with the School of Electrical, Computer, and Energy Engineering at Arizona State University, where he has taught a series of circuit design courses in VLSI Analog Signal Processing, VLSI High-Speed I/O Circuits, and Structural VLSI Analog Circuits since 2002. Dr. Song earned his PhD from ASU and has been working in the VLSI circuit industry as a senior design engineer with Intel Corporation since 1994.
LANGE'S HANDBOOK OF CHEMISTRY, 17/E
James G. Speight

The Go-To Reference for Chemists for More Than 70 Years – Completely Updated to Include Today’s Essential Topics.

Lange’s Handbook of Chemistry, 17/e is written to provide a reliable one-stop source of factual information for today’s working chemist. Within its pages, you will find an unmatched compilation of facts, data, tabular material, and experimental findings that span every area of chemistry. Included in this fully updated Seventeenth Edition are listings of the properties of more than 4,000 organic and 1,400 inorganic compounds.

The Seventeenth Edition is enhanced by the addition of an all-new section on Naturally Occurring Chemicals and Chemical Sources. This timely new content includes descriptions of coal, crude oil, natural gas, tar sand and tar sand bitumen, oil shale, biomass and biofuels, and minerals.

Dr. James G. Speight earned his D.Sc. and PhD degrees from the University of Manchester in England. He also holds a DSC in the Geological Sciences and a PhD in Petroleum Engineering. Dr. Speight is the author and co-author of more than 60 books, databases, conference proceedings, and scientific papers in petroleum science, petroleum engineering, and environmental sciences.
OPERATION OF WATER
RESOURCE RECOVERY
FACILITIES MANUAL OF
PRACTICE NO. 11, 7/E

Water Environment Federation

The water quality industry’s cornerstone text – the definitive reference on water resource recovery facility operations.

Operation of Water Resource Recovery Facilities (MOP 11), 7/e focuses on the operation, processes, and maintenance of water resource recovery facilities. Now presented in one single volume, this flagship book delivers up-to-date coverage of the transition from wastewater treatment plants to water resource recovery facilities, and also features a greater emphasis on the principles of WRRF management, troubleshooting, and preventive maintenance. This acclaimed resource represents the most complete, authoritative, and up-to-date reference available to the water treatment industry.

The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of 33,000 individual members and 75 affiliated Member Associations representing water quality professionals around the world. Since 1928, WEF and its members have protected public health and the environment. As a global water sector leader, our mission is to connect water professionals; enrich the expertise of water professionals; increase the awareness of the impact and value of water; and provide a platform for water sector innovation.
GREEN ELECTRICAL ENERGY STORAGE: SCIENCE AND FINANCE FOR TOTAL FOSSIL FUEL SUBSTITUTION

Gabriele Zini

A concise guide to renewable energy storage technologies, methods, and applications?

This practical resource provides comprehensive coverage of electrical energy storage with a focus on renewable energy integration. The book fully explains current processes, methodologies, and technologies as well as the financial analysis, risk analysis, simulation, and business law tools needed make sustainable energy storage happen.

Green Electrical Energy Storage: Science and Finance for Total Fossil Fuel Substitution shows, step-by-step, how to choose appropriate technologies and design effective, carbon-neutral energy storage systems. Readers will learn to understand business law contracts, economic valuations, and financing to transform their designs into real-world, efficiently operating assets. Methods for maximizing grid stability and renewable energy penetration while reducing the impact of fossil fuels are also thoroughly explained.

- Features clear descriptions of the latest technologies and applications
- Offers real-life discussions of economic concerns and financial feasibility issues
- Written by an expert with experience in both the technical and financial aspects of green energy

Gabriele Zini is chief technology officer for Amplio Energy, an international developer and operator of large scale power plants from renewable energy sources, particularly solar. He has worked for multinational companies, universities, and public organizations in the industrial and energy sector. Dr. Zini is a frequent speaker at international conferences and has published more than 20 papers and chapters in international journals and books.
NALCO CHAMPION FUEL
FIELD MANUAL, 3/E
Kim B. Peyton

This fully updated, practical reference features comprehensive, easy-to-find solutions for fuel-related problems.

This third edition of the Nalco Champion Fuel Field Manual is a concise collection of organized facts and information that can be used to identify and solve common fuel issues, including contamination, additive, and operational problems. This completely revised new edition focuses directly on issues specific to gasoline, kerosene, jet fuel, diesel fuel, heating oil, and residual fuel oil performance.

Updated chapters present new technical information and fix out-of-date discussions, graphics, and tables. Useful to a wide range of technical personnel within the petroleum industry, this new edition examines the wide range of problems encountered during refining, testing, storage, transportation, delivery, and combustion of fuel. Nalco Champion Fuel Field Manual, Third Edition offers quick answers to difficult questions, taking the reader easily from problem to solution.

- Provides troubleshooting tactics and safety and hazard management techniques
- Offers detailed sketches of fuel refining units pumps and ASTM testing equipment
- Features fully up-to-date time-saving charts describing fuel specification

Kim B. Peyton is the research group leader for Nalco Champion.
JURAN'S QUALITY HANDBOOK: THE COMPLETE GUIDE TO PERFORMANCE EXCELLENCE, 7/E
Joseph A. Defeo

A thorough revision of the bestselling handbook that has defined quality management and operational excellence for more than 50 years.

This “compendium of knowledge” for the science of quality control and management has been updated to meet the needs of today’s business and quality professionals. Featuring the latest methods, research, and tools, this authoritative resource shows how to apply universal methods for delivering superior results and excellence in any organization, industry, country, or process.

Juran’s Quality Handbook, 7/e provides readers with a roadmap to developing the discipline to know where they are in the process and what they need to do to get to the next level. The book offers complete coverage - from key concepts, methods, and tools to practical applications on the job. All regulations and regulatory coverage has been revised, and all out-of-date information has been cut.

- New information on risk and quality
- Case studies throughout demonstrate how to apply the methods and tools covered
- Features new statistical tables charts and data
- New coverage of pharmaceutical quality by design and healthcare risks and regulations

Joseph A. Defeo is a leading quality management practitioner and successor to Dr. Juran as Chairman and CEO of Juran Global, Inc. He is recognized worldwide for his expertise in enabling organizations to achieve organizational excellence.
THE BIG BOOK OF MAKERSPACE PROJECTS: INSPIRING MAKERS TO EXPERIMENT, CREATE, AND LEARN
Colleen Graves, Aaron Graves

Start-to-finish, fun projects for makers of all types, ages, and skill levels!

Written by two school librarians obsessed with making stuff, this easy-to-follow guide is full of hands-on, low-cost makerspace projects that will inspire inventors and makers of all ages. The Big Book of Makerspace Projects: Inspiring Makers to Experiment, Create, and Learn features practical tips for beginners and open-ended challenges for advanced makers.

The book features dozens of classroom-tested, hands-on DIY projects and challenges. Each project features clear, non-technical step-by-step instructions with photos and illustrations to ensure success, expand the imagination, and foster innovation. Readers will explore recyclables hacks, smartphone tweaks, paper circuits, e-textiles, musical instruments, coding and programming, 3-D printing, and much, much more!

Colleen Graves brings a passionate artistic energy to the school library world; this passion earned her the School Library Journal/Scholastic School Librarian of the Year Co-Finalist Award in 2015.

Aaron Graves is a school librarian with 15 years of experience. He is a mash-up of robot geek, book lover, and tech wizard. Aaron gained his perseverance for projects through collaborative and interactive art experiences as a member of the Good/Bad Art Collective.
Fully updated state-of-the-art semiconductor design and manufacturing information.

This fully updated handbook provides cutting-edge technologies and state-of-the-art processes needed to design and fabricate IC chips, MEMS, sensors, and other electronic devices. The book lays out the electronics fundamentals and techniques that are required to understand and accelerate the pace of innovation.

*Semiconductor Manufacturing Handbook, 2/e* consolidates many complex engineering and manufacturing disciplines into one volume, enabling the quick look up of specific reference data. Readers will get complete details on semiconductor fundamentals and basic materials, front-end of line processes, back-end of line processes, nanotechnology, MEMS, photovoltaics, gases and chemicals, and fab yield, operations and facilities.

**Hwaiyu Geng, CMfgE, P.E.,** is a principal at Amica Research, promoting green engineering programs. He has had over 40 years of diversified engineering and management experience, working with Applied Materials, Hewlett-Packard, Intel, and Juniper Networks on international high-tech projects. He has written and presented numerous technical papers at international conferences. Mr. Geng is also the author of McGraw-Hill's *Manufacturing Engineering Handbook*. He is a patent holder.
STEAM PLANT OPERATION, 10/E
Everett B. Woodruff, Herbert B. Lammers, Thomas F. Lammers

The definitive guide for steam power plant systems and operation fully updated.

For more than 80 years, this book has been a trusted source of information on steam power plants, including the design, operation, and maintenance of major systems. *Steam Plant Operation, 10/e* emphasizes the importance of a comprehensive energy plan utilizing all economical sources of energy, including fossil fuels, nuclear power, and renewable energy sources. The book continues to describe the important role that steam plays in our power production and it identifies the associated risks and potential problems for each source of energy.

This practical guide provides common power plant calculations such as plant heat rate, boiler efficiency, pump performance, combustion processes, and the systems necessary to control plant emissions. Numerous illustrations and clear presentation of the material will assist in preparing for an operator’s license exam. Throughout, real-world examples demonstrate each topic.

- Engineering students will find a detailed introduction to steam power plant technology
- Offers concise explanations of concepts from fundamentals through advanced design and operation

**Everett B. Woodruff** was a Project Engineer at A. M. Kinney, Inc., a leading architectural, engineering, and design process firm. He was involved in the design of industrial and utility power plants and provided consultation in steam plant operation and maintenance; in plant performance test requirements; and in the development of overall power plant specifications.

**Herbert B. Lammers** was a consultant for various industries which were dependent upon steam power plants for their reliable source of power. He provided expertise in the efficient combustion of various fuels and in the economic operation and maintenance of boilers and various power plant systems.

**Thomas F. Lammers** was a Senior Project Manager with Babcock & Wilcox Co., one of the world’s leading designers and suppliers of steam generating systems and related power plant equipment.
MCGRAW-HILL’S NATIONAL ELECTRICAL SAFETY CODE 2017 HANDBOOK
David J. Marne

Up-to-date, step-by-step clarification of every requirement in the 2017 NESC.

This hands-on guide thoroughly explains how to apply and meet the NESC rules for electrical supply stations and equipment, as well as overhead and underground electric supply and communications lines. The book offers concise summaries of complicated and sometimes controversial issues. Hundreds of diagrams, photos, and practical examples are contained in this comprehensive resource.

Designed to be used as a companion to the code itself, McGraw-Hill's National Electrical Safety Code® (NESC) 2017 Handbook has been fully updated to reflect the record number of change proposals for the 2017 NESC. Readers will gain access to straightforward, ready-to-apply code clarification, enabling them to work safely and efficiently and achieve full compliance. The book also covers current OSHA standards.

- Offers a comprehensive rule-by-rule overview of the 2017 NESC
- Includes examples of code application including 50 examples new to this edition
- Written by an experienced electrical engineer and NESC expert

David J. Marne, P.E., B.S.E.E., is a nationally recognized speaker on the National Electrical Safety Code (NESC). He serves on multiple NESC technical subcommittees and is president and senior electrical engineer for Marne and Associates, Inc., where he specializes in NESC training and expert witness services. Mr. Marne has more than 30 years of experience in the utility industry and is a senior member of the IEEE.
THE COMPLETE BOOK OF LOCKS AND LOCKSMITHING, 7/E
Bill Phillips

Fully updated, illustrated coverage of locks and keys from a master locksmith.

The Complete Book of Locks and Locksmithing, 7/e offers complete, up-to-date information on locks and keys - from old-fashioned designs to modern electromagnetic locks. This new edition has been thoroughly revised to include details not found in general circulation locksmithing books, including new instruction on unlocking today’s cars, installing and servicing smart locks, and opening locked doors.

Written by a seasoned locksmith and experienced author, this all-new edition is the most comprehensive and current locksmithing book available. The book features the latest techniques for lockpicking and fixing, safe opening and servicing, auto lock releasing, and electronic and high-security mechanical lock maintenance. Readers will learn how to conduct a home security survey, get hired as a professional locksmith - even start up and run a locksmithing business.

- Ideal for casual reading self-study or classroom instruction
- Includes a brand-new chapter on frequently asked questions
- Contains a free-of-charge registered professional locksmith exam

Bill Phillips is the leading author of locksmithing books, including all previous editions of this best-selling classic. He also wrote McGraw-Hill's Locksmithing, a part of the Craftmaster series, and the Complete Book of Electronic Security, also from McGraw-Hill. Mr. Phillips has written hundreds of security-related articles for professional and general-circulation periodicals. He is president of the International Association of Home Safety and Security Professionals.
COMMUNICATIONS RECEIVERS: PRINCIPLES AND DESIGN, 4/E
Ulrich L. Rohde, Jerry C. Whitaker

This classic guide to communications receivers has been fully revised to give readers the complete picture, including the state-of-the-art in communications technologies.

The latest, fully updated edition of this landmark volume thoroughly examines the underlying technology of radio receivers that are in common use today, giving the reader a look at the entire range of systems and standards. Throughout, topics are illuminated with technical illustrations, schematic diagrams, and basic mathematical equations.

Written by a pair of telecommunications experts, Communications Receivers: Principles and Design, 4/e explains the science behind each technology and teaches how each component is put to work in real-world systems. Readers will learn about radio system planning, antennas and antenna coupling, amplifiers and gain control, cellular and digital communication, and the latest Software Defined Radio (SDR) technology. From there, readers will get detailed instruction on developing, designing and constructing custom receivers

- Features updated coverage of antennas filters and measurement techniques
- Contains information on cutting-edge Software Defined Radio (SDR) technology
- Technical illustrations and schematic diagrams are provided throughout

Ulrich L. Rohde is the chairman of Synergy Microwave Corp. president of Communications Consulting Corporation, and a partner in Rohde & Schwarz, Munich, Germany. Dr. Rohde is past member of the board of directors and a former executive vice president of Ansoft Corporation. He is an IEEE Fellow.

Jerry C. Whitaker is a vice president at the Advanced Television Systems Committee. A fellow of the Society of Broadcast Engineers and the Society of Motion Picture and Television Engineers, he is the author and editor of more than 40 books on technical topics.
ENVIRONMENTAL NANOTECHNOLOGY: APPLICATIONS AND IMPACTS OF NANOMATERIALS, 2/E
Mark R. Wiesner, Jean-Yves Bottero

Featuring 75% new material, this timely, advanced textbook and professional reference for environmental, chemical, and materials engineers covers the impacts of nanomaterials on organisms and ecosystems and their applications within industry.

Co-written by leaders of two of the most prominent research groups in the world considering the effects of nanomaterials on the environment, the second edition of Environmental Nanotechnology addresses the cutting-edge advances in this area. There is now much more known about the impacts of nanomaterials on organisms and ecosystems. Methods have been developed where there were few accepted procedures in the past. Thinking has evolved to consider the life cycle effects of nanomaterial production, and tools for risk forecasting are now under development.

There has also been some experience among academics in using this book as the basis for new courses on Environmental Nanotechnology. The experience gained from teaching these courses informs many of the changes in this revision.

Mark R. Wiesner, professor of Civil & Environmental Engineering at Duke University, has been a pioneer in the applications of nanomaterials to membrane science and water treatment and in examining possible risks posed by these materials to human health and the environment. He serves as Director of the National Science Foundation/USEPA funded Center for the Environment Implications of NanoTechnology (CEINT).

Jean-Yves Bottero leads the International Consortium for the Environmental Implications of NanoTechnology (iCEINT) and associated French-sponsored eight-year effort on the topic, SERENADE. He is head of France’s Geoscience and Environmental Laboratory and specializes in the physical chemistry of organic, inorganic, and heterogeneous contaminants; the physicochemical.
PROGRAMMING FPGAS: GETTING STARTED WITH VERILOG

Simon Monk

Add interesting FPGA and Verilog functions to your Arduino and Raspberry Pi creations!

This hands-on guide is for makers who have been working with Raspberry Pi or Arduino and want to take their projects to the next level with Field Programmable Gate Arrays (FPGAs) and Verilog. Electronics guru Simon Monk follows his best-selling approach - assuming very little, starting slowly with easy, DIY examples, and gradually introducing more complex ideas.

Programming FPGAs: Getting Started with Verilog is full of well-illustrated examples and step-by-step instructions. The book clearly explains the use of several popular FPGA boards, enabling readers to pick and choose hardware that best fits their needs. Readers will learn about modular design, PWM and servo pulse generation, display drivers - even audio and video!

- Serves both as a hobbyists’ guide and as an introduction for professional developers
- All source code and example project files are available for download
- Written in the clear style that electronics guru Simon Monk is famous for

Simon Monk has a bachelor's degree in cybernetics and computer science and a Ph.D. in software engineering. He is now a full-time writer and has authored numerous books, including Programming Arduino, 30 Arduino Projects for the Evil Genius, Hacking Electronics, and Fritzing for Inventors. Dr. Monk also runs the website monk.makes.com, which features his own products.
PYTHON FOR MICROCONTROLLERS: GETTING STARTED WITH MICROPYTHON AND PYBOARD

Donald Norris

Build and program your own electronics projects with MicroPython in no time!

This practical guide offers a hands-on introduction to Python-based microcontroller programming with MicroPython and the open-source Pyboard hardware platform. The book shows, step-by-step, how to set up and interface with the board, install the necessary software, and develop custom MicroPython programs.

Written by an experienced hobbyist, Python for Microcontrollers: Getting Started with MicroPython and Pyboard features start-to-finish, DIY projects that clearly demonstrate each technique. Readers will learn how to use the built-in sensor, store data to an SD card, control the LCD and matrix keyboard, interface with the Web - even build a cool robotic car! From there, readers will discover how to assemble, program, and troubleshoot all kinds of entertaining and practical projects of their own.

- Serves both as a hobbyists’ guide and as an introduction for engineers and techs
- Features clear explanations well-illustrated examples and hands-on projects
- Written in clear easy-to-follow language by an experienced maker

Donald Norris is an avid electronics hobbyist and maker. He is an engineer by formal training but has acquired a comprehensive background in software development in the past 20 years. Don is also an adjunct professor at Southern New Hampshire University and the author of Raspberry Pi Projects for the Evil Genius, Programming the Intel Edison: Getting Started with Processing and Python, and three other TAB books.
Get started programming your own fun electronics projects - no experience required!

This hands-on guide offers a clear introduction to programming the Intel Galileo using Arduino Software. The book explains Intel Galileo hardware fundamentals and shows, step-by-step, how to write well-crafted sketches using easy-to-follow examples that move from basic to more advanced programming concepts.

**Programming the Intel Galileo: Getting Started with the Arduino-Compatible Development Board** shows how to set up, connect, and quickly start programming the Intel Galileo. Readers will discover how to work with the board’s inputs and outputs, use libraries, and connect to the Internet. From there, readers will learn to program their own Galileo-based creations using Arduino’s modified C language.

- Serves both as a makers’ guide and as an introduction for techs, developers, and engineers
- Features a series of hands-on projects along with screenshots diagrams and source code
- Written by a dedicated hobbyist and experienced author

**Christopher Rush** has a degree in computer science and has spent the last 10 years working for an electronics distribution company as a product manager for single-board computing. Mr. Rush is the author of *30 BeagleBone Black Projects for the Evil Genius* and *Programming the Photon: Getting Started with the Internet of Things*, also published by McGraw-Hill Education.
HANDBOOK OF STRUCTURAL STEEL CONNECTION DESIGN AND DETAILS, 3/E
Akbar R. Tamboli

The definitive guide to steel connection design - fully revised to cover the latest advances.

Featuring contributions from a team of industry-recognized experts, this up-to-date resource offers comprehensive coverage of every type of steel connection. The book explains leading methods for connecting structural steel components - including state-of-the-art techniques and materials - and contains new information on fastener and welded joints.

Thoroughly updated to align with the latest AISC and ICC codes, Handbook of Structural Steel Connection Design and Details, 3/e features brand-new material on important structural engineering topics that are hard to find covered elsewhere. Readers will get complete details on fastener installation, space truss connections, composite member connections, seismic codes, and inspection and quality control requirements. The book also includes LRFD load guidelines and requirements from the American Welding Society.

• Distills ICC and AISC 2016 standards and explains how they relate to steel connections
• Features hundreds of detailed examples photographs and illustrations
• Each chapter is written by a leading expert from industry or academia

Akbar R. Tamboli is senior vice president and principal at Thornton-Tomasetti structural engineers, one of the foremost structural engineering firms. A fellow of the American Society of Civil Engineers and a Professional Engineer, Tamboli is the editor of both previous editions of Steel Design Handbook; LRFD Method and Handbook of Steel Connection Design and Details.