Sci-Tech News

Volume 66 | Issue 2 Article 14

May 2012

Sci-Tech Book News Reviews

Susan Fingerman
American Public University System, smfinfo@verizon.net

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Recommended Citation
Fingerman, Susan (2012) "Sci-Tech Book News Reviews," *Sci-Tech News*: Vol. 66: Iss. 2, Article 14.
Available at: http://jdc.jefferson.edu/scitechnews/vol66/iss2/14

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Sci-Tech Book News Reviews Susan Fingerman, Selector

The following section consists of 100 book reviews selected from *Sci-Tech Book News*, reprinted with the permission of Book News Inc. This review journal is published four times a year, each issue reviewing over 2,000 new titles in the physical and biological sciences, mathematics, engineering, computer science, technology, and agriculture. For a sample issue and subscription information, contact Book News Inc. at 5739 NE Sumner Street, Portland, OR 97218. Phone: (503)281-9230; Fax: (503)287-4485; E-mail: booknews@booknews.com.

PRODUCTION, INDUSTRY, LABOR

HD45 2011-031959 978-1-61350-341-6
Open innovation in firms and public administrations; technologies for value creation.
Title main entry. Ed. by Carmen de Pablos Heredero and David López.
Information Science Reference, ©2012 302 p. $185.00
Offering a multi-disciplinary perspective, international contributors in management information systems, business administration, technology, and engineering shed light on techniques and applications of open innovation and knowledge sharing in business. Cases describe successful experiences in different industries, such as the automobile industry, the telecommunications industry, and university-industry collaboration; many cases are from Spain. The book begins with an overview of the main perspectives on collaborative knowledge sharing within established theories of economic organization and strategic management. Later chapters cover topics such as modes of open innovation in service industries, intellectual property and licensing strategies in open collaborative innovation, the influence of open innovation in R&D environments, and organizational culture and its effects on innovation within ERP systems. De Pablos Heredero teaches business administration at the Rey Juan Carlos University, Spain. López is affiliated with the Department of Operations and Technology at I. E. Business School.

HD49 978-1-84334-647-0
Crisis information management; communication and technologies.
Title main entry. Ed. by Christine Hagar. (Chandos information professional series)
Chandos Publishing, ©2012 197 p. $85.00 (pa)
For library and information science practitioners, researchers, policy makers, and others, Hagar (library and information science, Dominican U.) brings together a group of information science and technology professionals from the US, Europe, and Indonesia for 10 chapters that address research and practice by those engaged in designing information infrastructures and systems to support crisis and emergency information management. They discuss how technology can enable resilience during war, the use of Twitter by law enforcement agencies as a crisis communication tool and in various crisis events, how technologies can support legacies of crisis events, and information and communication problems due to crises of isolation caused by SARS, H1N1, and Avian flu. They also consider the role of the company Ericsson in partnership with the UN in information and communication initiatives; how information environments can better support work activities, organization, and situation awareness; and how community radio and libraries can affect the spread of information during critical situations. Distributed in the US by Neal-Schuman.

HD49 2011-038350 978-1-61350-507-6
Information assurance and security technologies for risk assessment and threat management; advances.
Title main entry. Ed. by Te-Shun Chou.
Information Science Reference, ©2012 353 p. $195.00
Electrical engineers and computer and information scientists review current trends in assuring the integrity of information on computer networks. Their approaches are attacks and vulnerabilities, security technologies, risk assessment and management, and strategic planning of information security. Among the topics discussed are wireless security, forensic challenges for mobile phone security, audio visual systems for large-scale people authentication and recognition over Internet Protocol, firewall, assessing risk and identifying real-time vulnerability in information technology environments, and combining security and privacy in requirements engineering.

HD9560 2011-033600 978-1-118-01299-4
An introduction to petroleum technology, economics, and politics.
Speight, James G.
Scrivener/Wiley, ©2011 320 p. $79.95
Speight (senior fuel consultant and visiting professor, U. of Trinidad and Tobago, and adjunct, chemical and fuels engineering, U. of Utah) offers an introduction to the petroleum industry for both lay readers and engineers. He examines the history and terminology of crude

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oil, its origins, oil prices and the crude oil market, the petroleum culture, and oil supply as well as exploration, recovery, and transportation. In the final chapter, he addresses the future of the industry in terms of undiscovered supplies and energy independence and security. Scrivener is now owned by Wiley.

SOCIOLOGY

HM742 2011-038347 978-1-61350-513-7
Social network mining, analysis, and research trends; techniques and applications.
Title main entry. Ed. by I-Hsien Ting et al.
Information Science Reference, ©2012 407 p. $175.00
Mostly computer scientists, but also social scientists and business scholars summarize the current research trends in analyzing and mining social networks. They cover general topics; measures, methods, and techniques; and applications and case studies. Among the discussions are sociocognitive inquiry, detecting pharmaceutical spam in microblog messages, modeling customer behavior with analytical profiles, a social network model for understanding technology use for knowledge-intensive workers, and semantic awareness for a useful digital life.

HM851 2011-032444 978-0-313-39287-0
Beyond the blogosphere; information and its children.
Barlow, Aaron and Robert Leston.
Praeger, ©2012 269 p. $48.00
What happens when information extends beyond any individual human's ability to conceive of it, let alone make use of it? In this book for general readers, Barlow and Leston, both teachers of English at New York City College of Technology, draw on Tim Wu's cyclic patterns of technology development and on the ideas of thinkers such as McLuhan and Jung, user-centered design expert Donald Norman, technology critic Friedrich Kittler, Internet critic Evgeny Morozov, and Kevin Kelly, founding executive editor of *Wired* magazine. Using a readable, conversational writing style with plenty of pop culture references, the authors examine the role and features of the Internet in the blog and social networking era, when the boundaries between fact and fiction, public and private, individual rights and group powers, have become increasingly permeable.

HM851 2011925754 978-1-84980-422-6
The power of networks; organizing the global politics of the Internet.
Flyverbom, Mikkel.
Edward Elgar Publishing, ©2011 193 p. $110.00
This interesting, timely, and unique study of global Internet governance explores the role of the United Nation in the development of a system of political governance and standards surrounding emerging forums for political activity afforded by the widespread availability of networked communications. Topics discussed include ordering and governance in global politics, engaging social users as stakeholders, organizing hybrid forums, and shaping the global politics of the digital revolution. Flyverbom is a professor of communication at Copenhagen Business School, Denmark.

KF2995 2011-027604 978-0-8389-1092-4
Copyright law for librarians and educators: creative strategies and practical solutions, 3d ed.
Crews, Kenneth D.
Am. Library Association, ©2012 192 p. $57.00 (pa)
Crews (Columbia University) explains the application of copyright law and the provisions of fair use in this guide for educators, librarians, researchers, and students. This third edition reflects changes in the law, new technologies, and the growth of the Creative Commons or open access movement. Material is organized in sections on the reach of copyright, rights of ownership, fair use, education, and libraries. The plain layout reaches toward reader friendliness with margin boxes on legal milestones, margin definitions, key points, and b&w photos. The book includes about 30 pages of appendices, plus recommended books in many categories.

SCIENCE (GENERAL)

Q183 2011-032075 978-1-61350-116-0
Handbook of research on computational science and engineering; theory and practice; 2v.
Title main entry. Ed. by Joanna Leng and Wes Sharrock.
Engineering Science Reference, ©2012 644 p. $495.00
Countering the heavy bias towards purely technical skills in computer science and engineering, the studies here explore fundamental science aspects, reviewing recent research and the current status in hardware and software, applications, and organizational and practical issues. The topics include high performance computing for the theoretical study of nanoscale and molecular interconnects, a framework for testing code in computational applications, some illustrations of information geometry applications in biology and physics, artificial neural network modeling of sequencing batch reactor performance, and integrating data management and collaborative sharing with computational science research processes. The two volumes are paged consecutively; the unified index appears in each. Engineering Science Reference is an imprint of IGI Global.

Q334 978-1-60750-841-0
Artificial intelligence research and development; proceedings. Int'l Conference on the Catalan Association for Artificial...(14th: 2011: Lleida, Spain) Ed. by César Fernández et al. (Frontiers in artificial intelligence and applications; v.232)
IOS Press, ©2011 239 p. $174.00
This collection of 24 papers from an October

2011 conference held at the University of Lleida highlights recent work in the field of artificial intelligence (AI), conducted by researchers and scientists in Catalonia. Major themes include evolutionary computing, machine learning, reasoning models, robotics, and multi-agent systems. Some specific topics are MaxClique problems, MaxSAT evaluation, methods for quality-of-life assessment in people with intellectual disabilities, probabilistic appearance-based mapping and localization using the feature stability histogram, and efficient use of resources in all-optical networks. Other subjects include a distributed norm compliance model, an ontology-based record linkage method for textual microdata, biologically inspired turn control for autonomous mobile robots, and self-supervised clustering for codebook construction. The book includes b&w images and process diagrams. Fernandez is affiliated with the University of Lleida.

Q335 2010-054421 978-1-60960-165-2
Decision theory models for applications in artificial intelligence; concepts and solutions.
Title main entry. Ed. by L. Enrique Sucar et al.
Information Science Reference, ©2012 428 p. $180.00
Different types of decision theory techniques are illustrated and their application illustrated in artificial intelligence. The topics include Bayesian networks and influence diagrams, inference strategies for solving semi-Markov decision processes, relational representation and traces for efficient reinforcement learning, an intelligent assistant for power plant operation and training based on decision theory planning, and task coordination for service robots based on multiple Markov decision processes.

MATH, COMPUTERS

QA76.27 2011-031078 978-1-56881-468-1
Experimental design; from user studies to psychophysics.
Cunningham, Douglas W. and Christian Wallraven.
CRC Press, ©2012 393 p. $59.95
The authors explain in their preface that computer scientists are increasingly confronting the need to test their work with human beings to see if what they've designed or are designing meets their goals. Designing such experiments is intricate and has been the domain of cognitive psychologists, or psychophysicists, expert in exploring the "functional relationship between variations in the physical world and the resulting variations in the psychological (or perceptual) world." This text offers computer scientists and others the basics of design, execution, and analysis. Background requirements include only basic math and logic skills and some basic calculus. The editors are affiliated as follows: Douglas W. Cunningham (U. of Tübingen, Germany) and Christian Wallraven (Max Planck Institute for Biological Cybernetics, Germany).

QA76.54 2011-021433 978-0-470-76864-8
Real-time systems design and analysis; tools for the practitioner, 4th ed.
Laplante, Phillip A. and Seppo J. Ovaska.
Wiley-IEEE Press, ©2012 560 p. $130.00
Laplante (software engineering, Pennsylvania State U.) and Ovaska (electrical engineering, Aalto U., Finland) update again their introductory textbook on designing software systems in which timeliness is crucial. Writing for upper division and graduate students of computer science and engineering, and electrical engineering as well as practicing software, systems, and computer engineers, they discuss computer architecture, and organizations, systems and software engineering, and performance analysis and optimization techniques. About the only prerequisite is being able to program in one of the more popular languages, though some familiarity with discrete mathematics would be helpful in understanding some of the formalizations. The first edition was published in 1992, and the third in 2004.

QA76.575 2011-031136 978-1-61350-135-1
Information technology for intellectual property protection; interdisciplinary advancements.
Title main entry. Ed. by Hideyasu Sasaki.
Information Science Reference, ©2012 349 p. $295.00
Researchers and practitioners in computer science and electrical engineering, media and information, and law offer professionals and students in information technology a reference to various issues regarding intellectual property protection and its proper solutions from technical perspectives. Among their topics are a distributed multi-resolution transform-based framework for watermarking, multimedia content encryption for secure multimedia communication, access control on semantic web data using query rewriting, legal protection of a web page, and managing collective intelligence in semantic communities of interest.

QA76.575 2011-027682 978-1-61350-126-9
Intelligent multimedia databases and information retrieval; advancing applications and technologies.
Title main entry. Ed. by Li Yan and Zongmin Ma.
Information Science Reference, ©2012 320 p. $195.00
A few electrical engineers, but mostly researchers in computer science, information, mathematics, and similar soft fields explore the storage, manipulation, and retrieval of multimedia data comprised of images, audio, and video. They look first at the features and semantics of multimedia data and its use in multimedia information retrieval. Then they turn to database and intelligence technology for managing multimedia data. The topics include profiling user color perception for image retrieval, an image retrieval model combining ontology and probabilistic ranking, extracting sport video semantics, a dynamic semantic and complex relationship modeling of multimedia data, and

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latent semantic analysis for text mining and beyond.

QA76.585 2011-035136 978-1-4398-5641-3
Cloud computing; methodology, system, and applications.
Title main entry. Ed. by Lizhe Wang et al.
CRC Press, ©2012 805 p. $99.95
This collection of twenty-seven articles on cloud computing showcases current scholarship in several important areas of distributed computing technologies. Divided into sections covering fundamental concepts and methodologies, cloud functionalities and provisioning, and cases studies, applications, and research opportunities, chapters address such topics as interoperability in infrastructures-as-a-service (IaaS) frameworks, open source IaaS middleware, trust enhanced secure cloud storage, leasing video streaming resources on hybrid clouds, and cloud security analysis and policy development. Chapters include individual tables of contents, illustrations, tables, code examples, and notes. Contributors are academics, researchers, and engineers with universities and research institutions around the world.

QA76.585 2011-038277 978-0-12-385880-1
Distributed and cloud computing; from parallel processing to the internet of things.
Hwang, Kai et al.
Morgan Kaufmann Pub., Inc., ©2012 648 p. $89.95 (pa)
This large volume on distributive computing showcase current research and future direction in software, hardware, and network technologies for developing applications and infrastructure for clustering, parallel computing and cloud based services. The work is divided into sections covering systems modeling, clustering, and virtualization, Computing clouds, service-oriented architecture, and programming, and grids, peer-to-peer, and future of the internet, and individual chapters discuss topics such as scalable parallel computing, cloud programming and software environments, and P2P and overlay networks. The work includes illustrations and code examples. Hwang is a professor of computer science at the University of Southern California, Fox is a professor of informatics, computing, and physics at Indiana University and Dongarra is a professor of electrical engineering at the University of Tennessee.

QA76.585 2011-042034 978-1-59749-725-1
Moving to the cloud; developing apps in the new world of cloud computing.
Sitaram, Dinkar and Geetha Manjunath. Technical ed. by David R. Deily.
Syngress Media, Inc., ©2012 448 p. $59.95 (pa)
Intended for experienced programmers, IT stake holders and system architects, this volume on cloud computing technologies showcases the state of the art through an exploration of major distributive computing technologies available today, and examines new methodologies and paradigms for programming for the future of the cloud. Topics discussed include infrastructure, platform, and software as services, challenges for cloud application programming, security in the cloud, remote IT management, and emerging technologies and new trends in distributed computing. Chapters cover both theoretical and specific technical topics and applications, and numerous illustrations and code examples are provided. Sitaram is a technologist for Hewlett-Packard's Systems Technology and Software Division, and Manjunath is a researcher for Hewlett-Packard, Bangalore.

QA76.585 2011-038616 978-0-12-384919-9
Private cloud computing; consolidation, virtualization, and service-oriented infrastructure.
Smoot, Stephen R. and Nam K. Tan.
Morgan Kaufmann Pub., Inc., ©2012 399 p. $59.95 (pa)
This detailed volume on the planning and implementation of enterprise cloud computing infrastructures examines problems and solutions in wide area network (WAN) optimization, modern data center technologies, and server virtualization for private cloud computing systems. Topics discussed include next generation WAN and service integration, session interception design and deployment, WAN optimization, IP storage, and cloud infrastructure as a service. Chapters include detailed schematics, code examples and illustrations, and a glossary of acronyms and terms is provided. The volume is for experienced IT and network professionals and examples are based around Cisco networking products and VMware virtualization software. Smoot and Tan are engineers for Riverbed, a Wan optimizations technology firm.

QA76.5913 2011-031983 978-1-60960-126-3
Semantic technologies for business and information systems engineering; concepts and applications.
Title main entry. Ed. by Stefan Smolnik et al.
Business Science Reference, ©2012 377 p. $180.00
Researchers in information systems consider the potential of semantic technologies for business and information systems engineering. Their topics include an ontology-based method to construct a reference model catalogue for the energy sector, heterogeneous text and numerical data mining with possible applications in business and financial sectors, prospects and limitations for the semantic verification of business process models, the semantic annotation of business process templates, and semantic-enabled compliance management.

QA76.5915 2011-034287 978-1-4200-5109-4
Pervasive communications handbook.
Title main entry. Ed. by Syed Ijlal Ali Shah et al.
CRC Press, ©2012 500 p. $129.95
Shah, a systems architect, et al. provide a 21-chapter guide for designers and developers, researchers, and graduate students to pervasive communications technology, its architecture, and applications. Engineers and computer scientists

from North America, Europe, Asia, and the Middle East address quality of service routing in mobile networks, medium access control protocols, low power design for smart dust networks, security and reliability and positioning and location tracking in wireless sensor networks, power-aware video compression for mobile environments, and other technology. They also discuss peer-to-peer-based video-on-demand architecture, using universal plug-n-play for device communication, and interoperability as well as applications to health care, home automation and telecare, social networks, energy companies, and other areas.

QA76.6 978-0-596-80229-5
The art of readable code.
Boswell, Dustin and Trevor Foucher.
O'Reilly Media, Inc., ©2012 190 p. $34.99 (pa)
This small volume on writing clear and readable computer programming code provides a collection of best practices for producing software products that are easy to understand, improve and debug. The work is divided into sections covering surface level improvements, aesthetics, simplified loops and logic, code organization, and testing and readability. Chapters provide detailed examples of bad code and solutions for presenting the same processes in readable and organized forms. Boswell and Foucher are former Google software engineers.

QA76.6 978-0-12-385963-1
GPU computing gems, jade ed.
Title main entry. Ed. by Wen-mei W. Hwu. (Applications of GPU computing series)
Morgan Kaufmann Pub., Inc., ©2012 541 p. $74.95
The series presents guides for researchers, engineers, students, and supercomputing professionals to graphics processing units (GPU), which have become ubiquitous in handhelds, laptops, desktops, and supercomputing clusters. People using the units in a wide range of fields end up solving similar algorithms, and these volumes are designed to share solutions<-->gems<-->across disciplinary and professional boundaries. The areas covered here are parallel algorithms and data structures, numerical algorithms, engineering simulations, interactive physics and artificial intelligence for games and engineering simulation, computational finance, and programming tools and techniques.

QA76.6 2011-038369 978-1-4398-5166-1
Software maintenance success recipes.
Reifer, Donald J.
CRC Press, ©2012 315 p. $79.95
Drawing of field research in modern software development firms and professionals who service users of legacy software, this guide to professional practices in software maintenance showcases the modern roles of software maintenance teams and highlights the ways in which these professional redevelopment and troubleshooting teams play an essential role in the life cycle of software products. Topics discussed include maintenance management infrastructures, planning for turnover, developing responsive user support systems, regression testing, release scheduling, and prudent product retirement. Reifer is an experienced software engineer.

QA76.76 2011-038341 978-1-61350-438-3
Emerging technologies for the evolution and maintenance of software models.
Title main entry. Ed. by Jorg Rech and Christian Bunse.
Information Science Reference, ©2012 462 p. $195.00
Computer scientists, software engineers, and related professionals explore methods for maintaining and revising a model that was devised to develop software after the software itself has been released into the world. Their topics include the interplay of security requirements engineering and reverse engineering in maintaining undocumented software, model evolution leads by users interactions, model-driven re-engineering, the state-based evolution management of risk-based systems tests for service-centric systems, and the benefit of a model-based design of embedded software system in the car industry.

QA76.76 2011-040253 978-0-321-71833-4
Software systems architecture; working with stakeholders using viewpoints and perspectives, 2d ed.
Rozanski, Nick and Eoin Woods.
Addison Wesley Professional, ©2012 678 p. $59.99
Veteran software architects Rozanski and Woods offer a broad reference to the practice, which is becoming more important in software projects. This second edition takes account of changes over the 10 years since the first. They write primarily for other architects, but also for others in information technology. They cover architectural fundamentals, the process of software architecture, a viewpoint catalog, the perspective catalog, and putting it all together. Among the topics are the role of the software architect, identifying and engaging stakeholders, using styles and patterns, the functional viewpoint, the security perspective, and working as a software architect.

QA76.76 2011-039611 978-1-84821-320-3
Static analysis of software; the abstract interpretation.
Title main entry. Ed. by Jean-Louis Boulanger.
ISTE/Wiley, ©2012 331 p. $165.00
In the first of four volumes on the formal verification of software, industrial programmers provide feedback on formal techniques based on static analysis such as abstract interpretation. They cover formal techniques for verification and validation, Airbus: formal verification in avionics, Polyspace, software robustness with regards to dysfunctional values from static analysis, CodePeer<-->beyond bug-finding with static analysis, formal methods and compliance to the DO-178C/ED-12C standard on aeronautics, an efficient method developed by Thales for evaluating the safety of real-to-integer

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discretization and overflows in SIL4 software.

QA76.9 2011-043675 978-1-61350-474-1
Exploring advances in interdisciplinary data mining and analytics; new trends.
Title main entry. Ed. by David Taniar and Lukman Hakim Iwan.
Information Science Reference, ©2012 325 p. $195.00
International contributors in computer science, management, and information systems detail the latest perspectives on data mining and analytics. A preface reviews data mining techniques for spatio-temporal data. The rest of the book's 15 chapters explore topics such as investigating the properties of a social bookmarking and tagging network, the dynamics of content popularity in social media, detecting trends in social bookmarking systems, and graph-based modeling of concurrent sequential patterns. Other areas described include user-centric similarity and proximity measures for spatial personalization, estimating semi-parametric missing values with iterative imputation, constrained cube lattices for multidimensional database mining, an arbitrary shaped clustering method with compatible nucleoids, and empirical likelihood for incomplete data analysis. Taniar is affiliated with Monash University, Australia. Iwan is affiliated with RMIT University, Australia.

QA76.9 2011-026203 978-1-61350-098-9
Gaze interaction and applications of eye tracking; advances in assistive technologies.
Title main entry. Ed. by Paivi Majaranta et al.
Medical Information Science Reference, ©2012 398 p. $245.00
This collection of twenty five articles on adaptive technologies for disabled users showcases current scholarship in the development of eye tracking hardware and software for communications and motive applications. The volume is divided into sections covering user assessments, interface design, attentive and gaze-aware interfaces, application metrics and evaluation, and practical construction of eye tracking hardware. Individual essays address such topics as communications and text entry by gaze, brain-computer interfaces for attentive applications, gaze data analysis, and safety parameters and infrared light. Works include abstracts, illustrations, and tables, and a volume-wide listing of reading resources is provided. The contributors are academics in computer science and engineering from institutions around the world.

QA76.9 2011-016571 978-0-470-59244-1
Large-scale computing.
Title main entry. Ed. by Werner Dubitzky et al. (Wiley series on parallel and distributed computing; 80)
Wiley-IEEE Press, ©2012 196 p. $99.95
This collection of nine essays on large scale computing and modeling explores current research and emerging technologies in supercomputing and distributed computing for complex simulations. Topics discussed include global infrastructures for distributed computing, many-core GPU computing for astrophysics, the SimWorld agent-based grid experimentation system, large-scale data intensive computing, topology aware systems, and the QosCosGrid e-science infrastructure. Chapters include numerous charts and tables illustrating sample experiments and simulation architectures. The contributors are academics and researchers in computer science and engineering from primarily European institutions.

QA76.9 2011932732 978-1-60750-798-7
Modular ontologies; proceedings.
International Modular Ontologies Workshop (5th: 2011: Bremen, Germany) Ed. by Oliver Kutz and Thomas Schneider. (Frontiers in artificial intelligence and applications; v.230)
IOS Press, ©2011 129 p. $131.00 (pa)
Contributors from a wide range of physical, biological, and social sciences consider modularity in ontologies from both theoretical and practical perspectives. Among their topics are modularity issues in biomedical ontologies, applying community detection algorithms, atomic decomposition and module count, exploiting modularity for ontology verification, modeling the diversity of spatial information by using modular ontologies and their combinations, and theories of time intervals as a case study of constructing an ontology repository.

QA76.9 2011-027134 978-1-60960-881-1
Quantitative semantics and soft computing methods for the Web; perspectives and applications.
Title main entry. Ed. by Ramon F. Brena and Adolfo Guzman-Arenas.
Information Science Reference, ©2012 281 p. $180.00
For professionals and researchers in information and knowledge related technologies, Brena (distributed knowledge and multiagent systems, Tecnologico de Monterrey, Mexico) and Guzmán-Arenas (computer science, Centro de Investigación en Computación, Instituto Politécnico Nacional, Mexico) compile 11 articles that consider how to model the semantics of online documents and how to extract useful knowledge from them. Computer science and engineering researchers from South America, Europe, and Asia discuss a software system for topic discovery and document tagging, text representation models, query based topic modeling, a semantic relatedness measure, web search results discovery using multi-granular graphs, methods for learning argument preferences, a semantic evaluation framework to evaluate search systems, an approach to discovering and describing thematically related topics by graph clustering, and other topics.

QA182 2011-020554 978-0-8218-5360-3
Non-commutative cryptography and complexity of group-theoretic problems.
Myasnikov, Alexei G. et al. (Mathematical surveys and monographs; v.177)
American Mathematical Society, ©2011 385 p. $105.00
Myasnikov (City College of New York) et al. apply the complexity of non-commutative groups to

public key cryptography, assess the generic-case performance of various algorithms, and explore the asymptotically dominant properties of infinite groups used in public key cryptography. The second half of the book develops algorithms for word search and conjugacy search problems, a decision algorithm for the work problem in free solvable groups, and a polynomial time algorithm based on a straight line program. An appendix links probability theory and cryptanalysis.

QA808 2011-020576 978-0-470-97080-5
Computational mechanics of discontinua.
Munjiza, Antonio A. et al. (Wiley series in computational mechanics)
John Wiley & Sons, ©2012 267 p. $135.00
As modern science, industry, and engineering problems become increasingly complex, it has become more important to take into account the discontinuous character of the materials involved<-->a reality that has generated the relatively new discipline of Mechanics of Discontinua. This introductory overview will interest undergraduate and graduate students as well as engineers. A sampling of subjects addressed includes: methods, contact interactions in 2D and 3D, rock joints, MR contact detection algorithms for bodies of similar and different sizes, algorithms for complex shapes, parallelization, and more. The book is technical but clearly written and includes plentiful illustrations and figures. Editors are Munjiza (U. of London, UK) and Knight and Rougier (Los Alamos National Laboratory).

PHYSICS

QC20 2009-041376 978-1-61520-666-7
Particle swarm optimization and intelligence; advances and applications.
Parsopoulos, Konstantinos E. and Michael N. Vrahatis.
Information Science Reference, ©2010 310 p. $180.00
While this book is not about numerical optimization or evolutionary and swarm intelligence algorithms in general, it does provide a rough sketch of established theoretical analyses and their impact on the established variants of the algorithms. The book presents recent significant developments in particle swarm optimization (PSO) for novice and experienced PSO users and researchers. The first part of the book offers an overview of optimization, evolutionary computation, and swarm intelligence, reviews the development of PSO, and covers theoretical derivations. The second section describes real-world PSO applications. Appendices provide test problems and an example implementation of PSO in MATLAB. A list of web resources is also provided. Parsopoulos is affiliated with the University of Ioannina, Greece. Vrahatis is affiliated with the University of Patras, Greece.

QC174 2011-414042 978-0-470-29452-9
Quantum physics for scientists and technologists; fundamental principles and applications for biologists, chemists, computer scientists, and nanotechnologists.
Sanghera, Paul.
John Wiley & Sons, ©2011 501 p. $115.00
Educator, scientist, technologist, and entrepreneur Sanghera offers a thorough review of quantum physics for professional and technical audiences. A sampling of topics includes classical physics, particle behavior of waves and wave behavior of particles, atom anatomy, principles and formalism of quantum mechanics, anatomy and physiology of an equation, quantum mechanics of an atom and molecules, and statistical quantum mechanics. The author explains complex concepts and phenomena in a very accessible manner, in language that non-physicists and non-physics majors can readily comprehend.

QC374 2011-027775 978-1-4200-9218-9
Tutorials in metamaterials.
Title main entry. Ed. by Mikhail A. Noginov and Viktor A. Podolskiy. (Series in nano-optics and nanophotonics)
CRC Press, ©2012 293 p. $79.95
Metamaterials are composite media with optical properties that go beyond those of otherwise natural materials, like super resolution and optical cloaking. This text brings together nine chapters of tutorials explaining different aspects of metamaterials, as well as how to produce and work with them. Chapters have an introduction and summary, are organized into numerical sections and sub-sections, and packed with diagrams, tables, mathematical formulas and mostly black-and-white photographs. This text is written for advanced undergraduate and graduate students, as well as experts in physics and engineering. The contributors are mostly American academics and researchers with backgrounds in electrical and computer engineering, nanotechnology, physics, optics and mathematics.

QC495 2011-018730 978-1-119-97537-3
Measuring colour, 4th ed.
Hunt, R.W.G. and M.R. Pointer. (The Wiley-IS&T series in imaging science and technology)
John Wiley & Sons, ©2011 469 p. $110.00
Hunt (independent color consultant, UK), now joined by author Pointer (independent color consultant, visiting professor, U. of Leeds, UK) offers a fourth edition of this reference on color measurement. New to this edition are chapters on color rendering of light sources, colorimetry with digital cameras, elements affecting the appearance of colored objects, and an examination of new color appearance models based on the most current International Commission on Illumination (CIE) recommendations. The authors approach color measurement as more than engineering and instrumentation, but also include physiological and psychological perspectives of the human observer. A sampling of topics includes relations between color stimuli, light sources, metamerism and color constancy, RGB colorimetry, colorant mixtures, and models of color appearance for stimuli of different sizes. Subject treatment is thorough and the text is well-supported by

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detailed illustrations.

QC596 2011-035048 978-1-84821-313-5
Ferroelectric dielectrics integrated on silicon.
Title main entry. Ed. by Emmanuel Defa<:y>.
ISTE/Wiley, ©2011 448 p. $195.00
In 2008 scientists investigating materials of the perovskite family thought a compendium of research findings to date would be handy, and began conscripting specialists in different aspects. The project bifurcated into two volumes at one stage. *Piezoelectric Materials Integrated on Silicon* was published in 2011 and focuses on thin piezoelectric films. This volume is more oriented to technological aspects, and considers dielectrics with very high permittivity and ferroelectrics. Among the topics are the thermodynamic approach, deposition and patterning technologies, radio frequency characterization, integrated capacitors, and ferroelectric tunable capacitors.

CHEMISTRY

QD95 2010-041044 978-0-470-47017-6
Computational strategies for spectroscopy; from small molecules to nano systems.
Title main entry. Ed. by Vincenzo Barone.
John Wiley & Sons, ©2012 594 p. $125.00
The primary intent of this book is to present and analyze numerous examples of the current state of computational spectroscopy techniques for medium-to-large molecular systems in the gas phase as well as in more complex environments. Theoretical models get particular attention, and the central focus is on approaches that are readily accessible to non-specialists. The book includes an introduction to electron paramagnetic resonance and covers the challenge of optical spectroscopies and the search for accurate models. Sections address electronic and spin states and effects related to nuclear motions in time-independent and time-dependent models. While the text is technical, it is written in a direct manner to accommodate non-specialists. Extensive references and detailed illustrations are included. Editor Barone (Scuola Normale Superiore, Italy) and 27 contributors provided content.

QD380 978-3-03785-211-8
Key engineering materials and computer science; proceedings.
International Conference on Key Engineering Materials and Computer Science (2011: Dalian, China) Ed. by Jun Hu and Qi Luo. (Advanced materials research; v.320)
Trans Tech Publications, ©2011 678 p. $276.00 (pa)
The proceedings of the inaugural August 2011 conference gathers 120 papers on materials engineering, manufacturing processes, material testing, design techniques, and microcontrollers. Four papers from the National Yunlin University of Science and Technology report on growth of zinc oxide nanowires, aluminum doped zinc oxide thin film deposition, polycrystalline flakes, and zinc oxide coatings on silicon oxide spheres. A pair of papers from Gunma University investigate changes in wall thickness due to pipe compression and the effect of tool shape on sheet metal thickness during drawing and ironing. Other topics include atomistic simulation of heat transport in carbon nanotubes, nanoscale particle enhanced gold plating, an imaging system for detecting defects on navel oranges, and oil shale extraction. B&w images are provided.

QD401 978-3-527-33038-6
Terpyridine-based materials; for catalytic, optoelectronic and life science applications.
Schubert, Ulrich S. et al.
Wiley-VCH, ©2011 522 p. $195.00
Schubert (organic and macromolecular chemistry), Andreas Winter (both Friedrich-Schiller-U., Jena, Germany), and George R. Kewkome (polymer science and chemistry, U. of Akron, US) survey applications of one of the most prominent examples of materials that combine transition metal ions with nitrogen hetero-aromatics as ligands. Terpyridine was discovered in 1931, they say, and has been shown to lend itself to the construction of specific, stable metal complexes with unique properties that can easily be tuned by the choice of the metal ion and/or the structural modification. They compile key examples in each field to inform and inspire other researchers. Their topics include chemistry and properties of terpyridine transition metal ion complexes, metallo-supramolecular architectures based on terpyridine complexes, functional polymers incorporating terpyridine-metal complexes, biomedical relevance, and nanostructures.

TECHNOLOGY (GENERAL)

T57 2011-020649 978-0-470-74002-6
Simplicity, complexity, and modelling.
Title main entry. Ed. by Mike Christie et al. (Studies in practice)
John Wiley & Sons, ©2011 205 p. $115.00
Scientists in a number of fields explore how uncertainty impacts modeling and the resulting assessment and decision making. Among the fields are drug development, climate change, water distribution systems, flood risk management, oil reservoirs, and radioactive waste disposal. Statistical model selection and issues for modelers are also discussed. The editors' affiliations are Christie (petroleum engineering, Heriot Watt U., Edinburgh, UK), Cliffe (mathematical sciences, U. of Nottingham, UK), Dawid (mathematical sciences, U. of Cambridge, UK), and Senn (statistics, U. of Glasgow, UK).

T174 978-1-60750-953-0
Quantum engagements; social reflections of nanoscience and emerging technologies; proceedings.

Society for the Study of Nanoscience and Emerging Technologies Conference (2d: 2010: Darmstadt, Germany) Ed. by Torben B. Zülsdorf et al.
IOS Press, ©2011 248 p. $87.00
Contributors from the social sciences and the humanities explore social dimensions of nanoscience and other emerging technologies, and products being developed and released that result from them. The 16 papers include discussions of distrust and the pharmacology of transformational technologies, governing nano by dialogue, issues in India on public engagement in emerging technologies, distinguishing risk and uncertainty in risk assessments of emerging technologies, and cyclodextrins entering the nano-realm. There is no index.

ENGINEERING (GENERAL, CIVIL)

TA168 2011-032507 978-1-84821-253-4
Complex systems and systems of systems of systems engineering.
Title main entry. Ed. by Dominique Luzeaux et al.
ISTE/Wiley, ©2011 449 p. $195.00
While systems engineering has been around for a while, it is now becoming more widespread and being adopted by engineers who view it as a unifying and multidisciplinary way of working with complex systems. Among the subjects the authors address are: engineering large-scale complex systems, a case study of management of emergency situations, finding and solving problems, and anticipating integration, verification, and validation. While technical, the book is clearly written and well-illustrated and formatted. Editors Luzeaux (author and educator, systems-of-systems engineering), Ruault (design authority and standardization leader, author), Wippler (systems design, EADS Cassidian), and seven co-authors contributed to the book.

TA169 2011-027204 978-1-4398-4178-5
Machine learning and knowledge discovery for engineering systems health management.
Title main entry. Ed. by Ashok N. Srivastava and Jiawei Han. (Chapman & Hall/CRC data mining and knowledge discovery series)
CRC Press, ©2012 464 p. $99.95
This collection of thirteen articles on machine learning and data discovery systems showcases current scholarship relating to the application of modern data and information technologies in monitoring system resilience and health. The volume is divided into sections covering data-driven systems for health management, physics-based methods for heath management, and practical applications, and papers discuss such topics as Bayesian networks for systems heath management, model based tools for real time system and software health management, and hybrid models for engine health monitoring. Chapters include individual tables of contents, notes and references, Contributors include academics in a variety of engineering fields from universities and research institutions around the world.

TA409 2011937049 978-1-61503-824-4
Relational analysis; guidelines for estimating the high-and low-temperature properties of metals.
Kaufman, J. Gilbert.
ASM International, ©2011 279 p. $179.00
Kaufman, an engineer and consultant in the aluminum and materials information industries, defines and describes the potential use of relational analysis in analyzing and extrapolating the properties of metallic alloys at high temperatures and estimating the properties of those alloys that have little or no available data. He presents a range of high-temperature tensile property data for aluminum alloys, using data generated from a single source and developed using consistent testing procedures, as well as data from steels, magnesium alloys, and titanium alloys, and other potential applications of relational analysis, such as alloy selection for equatorial environments and enhanced recycling rates.

TA418 2011-038916 978-0-470-94307-6
Corrosion chemistry.
Cicek, Volkan and Bayan Al-Numan.
Scrivener/Wiley, ©2011 173 p. $125.00
Chemist and corrosion scientist Cicek and civil and structural engineer Al-Numan (both Ishik U., Iraq) provide a reference for engineers and a textbook for students on corrosion chemistry and corrosion science in general. Corrosion is in essence a chemical process, they say, and the dynamics must be understood from a chemical perspective before any analysis, design, and solutions from an engineering perspective. But the reverse is also the case, that chemists need to know what the engineering concerns and capabilities are in order to know what chemical aspects to focus on. A course taught from the textbook could range from a single semester to a whole year. Their topics include corrosion and its definition, corrosion types based on the media, the cost of corrosion and the use of corrosion inhibitors, current and potential applications of chromate inhibitor replacements, and corrosion in engineering materials. Scrivener is now owned by Wiley.

TA418 2011-035718 978-0-7680-3485-1
Engineered tribological composites; the art of friction material development.
Cox, Roy L.
SAE International, ©2012 505 p. $99.95
Cox, a chemist who has worked in the automotive brake industry, combines simple and advanced analytical techniques to study interactions between surfaces during sliding in order to clarify transitions that occur at the interface. Writing for fellow designers, he describes the basic operation of common braking systems, friction material manufacturing methods, the different types of friction materials, and the five elements of a friction material. Separate

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chapters review the history, chemistry, and use of phenolic resins, binder systems, carbon fiber, inorganic fiber, metallic fiber, abrasives, solid lubricants, and filler materials. References for further reading on a specific material are provided at the end of each chapter.

TA418 2011-938828 978-0-85709-030-0
Machining technology for composite materials; principles and practice.
Title main entry. Ed. by H. Hocheng.
Woodhead Publishing, ©2012 472 p. $265.00
Mechanical engineers, materials scientists, and other researchers examine traditional and non-traditional methods for machining objects that are made of more than one kind of material. Among the topics are analyzing cutting forces in machining processes for polymer-based composites, the electrical discharge machining of composites, laser-based repair for carbon fiber reinforced composites, machining processes for wood-based composite materials, and machining metal matrix composites using diamond tools.

ENVIRONMENTAL TECHNOLOGY

TD445 2011-033594 978-1-118-13715-4
A guide to the economic removal of metals from aqueous solutions.
Sharma, Yogesh C.
Scrivener/Wiley, ©2012 104 p. $79.95
This small technical volume on water purification describes current technologies useful for extracting metals from used industrial waste water. The work discusses the removal of chromium and Nickel from industrial waste, providing a detailed exposition of filtration methods, batch absorption experiments, and measurement instrumentation. A final section details the results of purification experiments and provides a discussion of several result models. Sharma is a professor of applied chemistry at Banaras Hindu University, India. Scrivener is now owned by Wiley.

MECHANICAL ENGINEERING & MACHINERY

TJ163 978-1-60750-825-0
The design of high performance mechatronics; high-tech functionality by multidisciplinary system integration.
Schmidt, Robert Munnig et al.
Delft University Press, ©2011 753 p. $195.00
Schmidt (mechatronic system design), Jan Van Eijk (advanced mechatronics, both Delft U. of Technology), and Goerg Schitter (industrial automation, Vienna U. of Technology) draw on their academic and industrial experience to describe the process of designing systems that combine mechanical and electronic elements. They focus on high precision positioning at very high velocity and acceleration levels, and leave out some areas generally covered, such as robotics and vehicle mechatronics. The textbook and reference is meant to fit any of the disciplines required for mechatronic systems, so little theoretical background in any particular one is assumed. Distributed in the US by IOS Press.

TJ163 978-3-03785-238-5
Mechatronics and materials processing; proceedings; 3v.
International Conference on Mechatronics and Materials Processing (2011: Guangzhou, China) Ed. by Liangchi Zhang et al. (Advanced materials research; vs.328-330)
Trans Tech Publications, ©2011 2486 p. $483.00 (pa)
A November 2011 conference offered a forum for engineers and scientists to present research results and applications in the field of mechatronics and materials processing. All of the peer-reviewed papers presented in this three-volume set have been reviewed by two expert referees. Volume 1 presents the latest work on manufacturing technology and processing. Some specific topics reported include design of integral-shaped milling cutter profiles, a cooperative optimal method for two-level models of a micro device, design and numerical analysis of the internal suction flow heat sink, and a study on the rapid progressive die design of sheet metal with a free-form surface. Volume 2 collects papers on material science and technology, addressing areas such as tribological applications considering roughness effects on grain flow, design of forming dies for a manifold airbag inflator, the effects of microwave drying on dyeing rate of cotton yarn, and preparation of flexible graphite sheets with fine flake graphite. Volume 3 contains papers dealing with mechatronics and automation. Some subjects covered include a broaching-load testing system of a hydraulic broaching machine, adaptive impedance control for a robot based on estimation of environmental parameters, fault diagnosis of a hoist gearbox based on time-domain analysis of EMD and fuzzy clustering, and an open automatic laser engraving system. Zhang is affiliated with the University of New South Wales, Australia.

TJ163 978-3-03785-274-3
Mechatronic systems, mechanics and materials; proceedings.
Special Session on Mechatronic Systems, Mechanics and Materials (2011, Jastrzebia Gora, Poland). Ed. by Zymunt Kitowski et al. (Solid state phenomena; v.180)
Trans Tech Publications, ©2012 374 p. $138.00 (pa)
Aimed at scientists and engineers, this volume collects 44 papers from the Special Session on Mechatronic Systems, Mechanics and Materials, held in October 2011 in Jastrzebia Góra, Poland. Contributed by researchers from universities, research centers, and industry in Poland and the Czech Republic, the papers cover control systems, their design and analysis, architecture, decision-making processes, comparison, and examples such as a virtual driver of a hybrid wheeled vehicle. Other examples include a supervisory controller of a ship propulsion plant, automation of a mobile biodiesel production plant, and advanced flight control systems. They also address robotics, with examples like underwater

robots, an unmanned ground vehicle, and a walking robot for inspection tasks; diagnostics, models, measurement and recording systems, and other topics; and mechatronic systems, modeling, and dynamics of systems such as an anti-aircraft missile launcher, thermal and humidification subsystems of a fuel cell system, marine vehicles, and off-road vehicles.

TJ163 2011-015221 978-0-470-62421-0
Modeling, analysis, and optimization of process and energy systems. (online access included)
Knopf, F. Carl.
John Wiley & Sons, ©2012 462 p. $115.00
Knopf (chemical engineering, Louisiana State U.) establishes a unified platform for improving materials processing by analyzing both the energy demand side<-->the processing plant<-->and the energy supply side<-->available heat and power resources. The material and energy flows in a process must be quantified first, he explains, then the energy needs of the process guide the optimal design of the utility system. He also presents techniques for maintaining the most cost-effective operation. The textbook could be used for a course in an engineering curriculum or in a professional course. Supplementary materials are available free online.

TJ211 2011-008352 978-1-4398-5488-4
Biologically inspired robotics.
Title main entry. Ed. by Yunhui Liu and Dong Sun.
CRC Press, ©2012 324 p. $99.95
Drawn from papers presented at the IEEE International Conference on Robotics and Biomimetics, held in Guilin, China in December 2009, this collection of fifteen articles on biologically inspired robotics examines both the work of engineers in the creation of robots inspired by biological systems, as well as the use of robotic modeling in the study of biological systems. Topics discussed include human inspired hyper dynamic manipulation, brain activity monitoring with optical and electric processes, testing human-likeness of robotic eye movements, and the classification of hand motion using surface EMG signals. Chapters include individual tables of contents, illustrations, and tables, and a volume-wide subject index is provided. Contributors are academics in engineering and bio-sciences from primarily Asian and European institutions.

TJ263 2011-016265 978-0-470-64372-3
Heat transfer applications for the practicing engineer.
Theodore, Louis. (Essential engineering calculations series ; 4)
John Wiley & Sons, ©2011 643 p. $115.00
Consultant, former educator, and author Theodore has written a four-part text on heat transfer fundamentals, applications, and principles for both professional engineers and students. Among the variety of topics addresses are: a history of heat transfer, process variables, conservation and gas laws, steady-state heat conduction, forced and free convection, radiation, refrigeration and cryogenics, double pipe and shell and tube heat exchangers, entropy considerations and analysis, design principles and industrial applications, environmental management, ethics, and economics and finance.

TJ820 2011-036308 978-0-470-97608-1
Onshore and offshore wind energy; an introduction.
Lynn, Paul A.
John Wiley & Sons, ©2012 223 p. $80.00
This technological survey provides an overview of existing and emerging technologies in wind energy generation in both onshore and ocean environments. Beginning with an outline of general wind energy principles, the volume explores wind turbine technologies, mechanical and electrical systems, special circumstances for offshore wind farms, grid integration, and economic and environmental and regulatory concerns facing the wind power industry. Chapters include color illustrations, graphs, and tables, as well as sample calculations for engineering problems. Lynn is a former professor at Imperial College London.

TJ828 2011-013534 978-0-470-69981-2
Innovation in wind turbine design.
Jamieson, Peter.
John Wiley & Sons, ©2011 298 p. $105.00
Wind turbines are becoming ubiquitous in the regions of the world where that resource is plentiful, and has become a critical addition to the energy portfolios of any number of countries working toward sustainable energy supplies and energy independence. Jamieson, a wind technology expert at GL Garrad Hassan, offers a four-part discussion of wind turbine design, technology evaluation, design themes, and examples of innovative technologies. While technical for lay readers, the book will specifically interest wind and power engineers, turbine designers, and consultants, researchers, and academics involved in renewable energy. The text is straightforward and numerous illustrations are included.

TJ1075 2011-036207 978-1-4398-3922-5
Micro- and nanoscale phenomena in tribology.
Title main entry. Ed. by Yip-Wah Chung.
CRC Press, ©2012 210 p. $149.95
Chung (materials science and engineering, Northwestern U.) presents a monograph reviewing the interdisciplinary topic of micro- and nano-scale phenomena in tribology, the study of interacting surfaces in relative motion. Eight chapters discuss the range of contact conditions between macroscale and nanoscale contacts; fundamental continuum treatments of interfacial contact and lubrication under a wide range of conditions, the nature of surface energies and forces in nanoscale structures, adhesion in dry and wet environments, friction measurement and interpretation at the nanoscale, experimental techniques for fabricating micro- and nanotextured surfaces,

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the role of surface chemistry in tribological interfaces, and molecular dynamics simulation.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK3001 978-3-89578-371-5
Planning guide for power distribution plants design, implementation and operations of industrial networks.
Kiank, Hartmut and Wolfgang Fruth.
Publicis Publishing / Siemens, ©2011 427 p. $80.00
Demands on electric power networks are growing steadily because of the rapid development and implementation of decentralized renewable energy resources, interconnection via power electronics and other complex and challenging innovations. This book is intended as a reference for electrical network designers and engineers and technicians working in the energy industry. It also is intended for students with an interest in the topic and for graduates beginning careers in the field. The authors address fundamentals and detailed planning recommendations for low- and medium-voltage systems. Authors are Kiank (power distribution solutions, Siemens Energy Sector) and Fruth (project planning engineer, Siemens Industry Sector). The book is distributed by Wiley.

TK5102 978-1-84919-257-6
Adaptive sampling with mobile WSN; simultaneous robot localisation and mapping of paramagnetic spatio-temporal fields.
Sreenath, Koushil et al. (IET control engineering series; 73)
IET, ©2011 180 p. $120.00
Sreenath (electrical engineering, U. of Michigan-Ann Arbor), M.F. Mysorewala (systems engineering, King Fahd U. of Petroleum and Minerals, Saudi Arabia), D.O. Popa, and F.L. Lewis (both electrical engineering, U. of Texas-Arlington) describe systematic methods for estimating environmental fields using multiple mobile sensors. They emphasize adaptive sampling, in which where to sample next evolves in response to previous measurements. After an introduction, they cover test beds for theory, the adaptive sampling of parametric fields, a case study of forest fire mapping, distributed processing for multi-robot sampling, resource scheduling, and adaptive localization. Distributed in the US by Books International.

TK5103 2011-017933 978-1-61350-150-4
Mobile technology consumption; opportunities and challenges.
Title main entry. Ed. by Barbara Ciaramitaro.
Information Science Reference, ©2012 243 p. $190.00
Ciaramitaro (business, Ferris State U.) assembles 13 chapters by individuals in the mobile industry and academia in the US, Europe, Israel, and Australia on the cost, benefits, individual and social impact, and security risks related to the rapid consumption of mobile technology and their use in education, healthcare, government, entertainment, and emerging economic sectors. They consider mobile technology from the user, technical, and social perspectives; mobile marketing; uses by government, military, and intelligence agencies; more advanced mobile technologies such as augmented reality, radio frequency identification, and Bluetooth; impacts on social and political movements; next generation multimedia on mobile devices; and uses to support integrated, intelligent, and immediate maintenance.

TK5103 2011-038349 978-1-61350-426-0
Resilient optical network design; advances in fault-tolerant methodologies.
Title main entry. Ed. by Yousef S. Kavian and Mark Stephen Leeson.
Information Science Reference, ©2012 348 p. $190.00
This collection of thirteen articles on optical networking showcases current scholarship in several areas of network design with an emphasis on research into system durability and design for restorability. Topics discussed include protection architectures for passive optical networks, fault management, pulse position modulation-based packet-switched routing, dynamic traffic grooming, survivable service provisioning, and self-healing in transparent optical packet-switching networks. Chapters include abstracts, illustrations, and references and a volume-wide compilation of reading references is provided. Contributors are network engineers and academics in computer and communications engineering from institutions around the world.

TK5103 2011-025918 978-0-470-97352-3
Self-organizing networks; self-planning, self-optimization and self-healing for GSM, UMTS, and LTE.
Title main entry. Ed. by Juan Ramiro and Khalid Hamied.
John Wiley & Sons, ©2012 292 p. $110.00
Primarily intended for engineers who manage or optimize mobile networks, this book details the multi-technology of self-organizing networks (SON) for second-generation, third-generation, and long-term evolution networks. The Next Generation Mobile Networks Alliance has established a set of functionalities for the automated self-organizations of long-term evolution networks, so that human intervention is minimized in the planning, deployment, optimization, and maintenance activities of these new networks. The fleshing out of those functionalities into concrete interfaces and procedures is described here.

TK5103 2011-042041 978-1-4666-0017-1
Wireless multi-access environments and quality of service provisioning; solutions and application.
Title main entry. Ed. by Gabriel-Miro Muntean and Ramona Trestian.
Information Science Reference, ©2012 408 p. $190.00
Electrical, computer, and telecommunications

engineers explore the technology and the structures of wireless environments in which many people can interact and access many resources at the same time. Among their topics are mobility challenges and management in the future wireless heterogeneous networks, heterogeneous meshed wireless back-haul network integrating uni-directional technologies, an intelligent fuzzy quality-of-service model in wireless ad hoc networks, packet scheduling in home and business femtocell networks, and adaptive coexistence between cognitive and fiber networks.

TK5105 2011-035143 978-1-4398-1108-5
Delay tolerant networks; protocols and applications.
Title main entry. Ed. by Athanasios Vasilakos et al. (Wireless networks and mobile communications; 19)
CRC Press, ©2012 350 p. $99.95
Delay tolerant networks (DTNs), such as ad-hoc networks and sensor networks, arise as a result of various forms of host and router mobility, and also as a result of disconnections due to power management or interference. International contributors present the latest work on DTNs in this book for researchers, practitioners, and graduate students in networking, wireless, mobile communications, and technology analysis. Some specific subjects examined are DTN routing, an energy-aware routing protocol for DTNs, and a routing-compatible credit-based incentive scheme for DTNs. Other topics explored include mobile peer-to-peer systems over DTNs, delay tolerant monitoring of mobility-assisted WSNs, and message dissemination in vehicular networks. Vasilakos is affiliated with the University of Western Macedonia, Greece.

TK5105 2011-036891 978-1-61350-498-7
Digital identity and access management; technologies and frameworks.
Title main entry. Ed. by Raj Sharman et al.
Information Science Reference, ©2012 404 p. $195.00
Computer scientists, electrical engineers, business scholars and other specialists in computer security describe digital identity and access management (IAM) systems as a framework for protecting online business processes. Their topics include IAM risks during organizational change and other forms of major upheaval, a feasibility and sustainability model for identity management, separating private and business identities, denial of service resilience in authentication systems, authentication in electronic banking, and privacy in identity and access management systems.

TK5105 2011-031924 978-1-61350-432-1
Handbook of research on service-oriented systems and non-functional properties; future directions.
Title main entry. Ed. by Stephan Reiff-Marganiec and Marcel Tilly.
Information Science Reference, ©2012 583 p. $270.00
Functions of service-oriented software generally operate at a business level, a level abstract enough that information technology has rarely seemed appropriate. Over the past decade or so, however, such services have recognized the importance of non-functional features<-->those that make the service more attractive but do not contribute directly to the core service. It is these properties that computer scientists address here. They cover perspectives on non-functional properties, service selection, service contracts, and governance of service-level agreements.

TK5105 2011-019909 978-1-60960-836-1
Privacy, intrusion detection, and response; technologies for protecting networks.
Title main entry. Ed. by Peyman Kabiri.
Information Science Reference, ©2012 279 p. $195.00
Researchers and practitioners in computer network security, but also network administrators might find the recent research reports and reviews useful. Specialists explore such topics as a structured approach to selecting data collection mechanisms for detecting intrusion, using broadcast messaging in a distributed hash table for detecting intrusion, detecting botnet behavior using network synchronism, dimension reduction and its effects on clustering for intrusion detection, and a subspace-based analysis method for detecting anomaly in large and high-dimensional network-connected data streams.

TK5105 2011-039636 978-1-59327-388-0
The tangled web; a guide to securing modern web applications.
Zalewski, Michal.
No Starch Press, ©2012 299 p. $49.95 (pa)
Intended for web developers and application programmers, this interesting volume on web application security provides a detailed overview of fundamental, structural security flaws inherent in current web technologies. The work provides practical fixes for specific security issues while engaging readers with a discussion of necessary paradigmatic shifts in development standards that will need to be adopted by industry professionals in order to provide users and businesses with secure Internet platforms in the future. Chapters provide numerous code examples addressing specific security concerns, and include brief "security engineer cheat sheets" for quick reference. Zalewski is an influential Internet security expert and the author of several books on the subject.

TK5105 2011938834 978-1-60750-827-4
Use of risk analysis in computer-aided persuasion; proceedings.
NATO Advanced Research Workshop on The Use of Risk Analysis... (2011: Antalya, Turkey) Ed. by Ekrem Duman and Amir Atiya. (NATO science for peace and security series; E, Information and communication security ; v.88)
IOS Press, ©2011 337 p. $196.00
The 22 papers in this collection look at ways to detect, counter, and protect against intelligence threats that target computer networks, financial systems, and defense and economic entities.

Among the topics are concealed investment strategy threats, using social networks for on-line credit card fraud analysis, the role of information security in intelligence, an evidential risk graph model for determining safety integrity level, community networks for information sharing, and neural network rule extraction and decision tables for predicting software faults.

TK6592 2011-031426 978-1-118-11511-4
Synthetic aperture radar polarimetry.
Van Zyl, Jakob and Yunjin Kim. (JPL space science and technology series; 2)
John Wiley & Sons, ©2011 288 p. $120.00
Van Zyl and Kim (both Jet Propulsion Laboratory, California Institute of Technology) describe how they apply polarimetric synthetic aperture radar (SAR) in Earth remote sensing in their research at the Laboratory. Their goal is to provide a useful summary of knowledge to serve as a reference for both newcomers and experts in radar polarimetry. They cover SAR imaging basics, basic principles of SAR polarimetry, advanced polarimetric concepts, polarimetric SAR calibration, and applying SAR to measure surface soil moisture.

TK7871 978-1-61503-826-8
Testing and failure analysis; proceedings.
International Symposium for Testing and Failure Analysis (ISTFA 2011) (37th: 2011: San Jose, CA)
ASM International, ©2011 456 p. $179.00 (pa)
Where microelectronics meets material science, testing and failure analysis become essential. This remarkably quick publication of the proceedings from a November 2011 conference sponsored by the Electronic Device Failure Analysis Society (EDFAS) provides comprehensive coverage of the field down to the level of nanoprobing. The volume is filled with black and white photographs and figures, along with two color images on the cover that won first place in the EDFAS 2010 photo contest. Only an author index is provided.

TK7874 978-3-03785-212-5
Information engineering for mechanics and materials science; proceedings; 2v.
Int'l Conference on Information Engineering for Mechanics and Materials (2011: Shanghai, China) Ed. by Linli Xu et al. (Applied mechanics and materials; vs.80-81)
Trans Tech Publications, ©2011 1371 p. $416.00 (pa)
The 260 papers selected for the August 2011 conference report recent research on metal, inorganic nonmetallic, organic polymer, composite, structural, and functional materials. The second volume in the two-volume set focuses on developments from mechanical engineering, industrial mechanics, and information systems for materials and mechanics. Three papers from the North University of China describe an ultra-low temperature pressure sensor and a tunable radio frequency inductor. Five papers from the Shaanxi University of Science and Technology investigate the effect of the chemical structure and sodium sulfate on polycarboxylate superplasticizers in cement pastes, a degraded chitosan for retanning leather, and a tetrabasic graft copolymer adhesive. Other topics include methods for assessing marine corrosion of steels, optimization of process parameters for tube hydroforming, x-ray detection of defects in railway freight cars, guideway joints for CNC machine tools, and impedance control of a wind turbine blade grinding robot.

TK7887 2011-008324 978-1-118-03829-1
Beyond redundancy; how geographic redundancy can improve service availability and reliability of computer-based systems.
Bauer, Eric et al.
Wiley-IEEE Press, ©2012 304 p. $89.95
The authors primarily address the question of the level of service availability improvement which is both feasible and likely with geographic redundancy, the practice of mitigating the loss, destruction, or denial of critical services by establishing geographically redundant systems in geographically separate areas. The book is intended for network architects and designers, maintenance and operations engineers, and management in information technology companies that are considering or have deployed such systems. In addition to service, risk, and business continuity, the authors examine service availability and reliability, modeling and analysis of redundancy, external redundancy strategy options, a case study of client-initiated recovery, and solution and cluster recovery. The final section offers a variety of recommendations. Authors, all employed by Alcatel-Lucent, are Bauer (reliability engineering, IMS Solutions Organization), Adams (technical staff consulting member, Applications Group), and Eustace (technical staff, IMS Solutions Organization).

TK8360 2011-026883 978-1-4398-2506-8
Broadband optical modulators; science, technology, and applications.
Title main entry. Ed. by Antao Chen and Edmond J. Murphy.
CRC Press, ©2012 548 p. $129.95
This collection of twenty four articles on optical network transmission technologies provides detailed information for engineers and engineering students on the technical specifications, history of development, and the state of the art in the world of optical modulators. The work is divided into sections covering modulator fundamentals, modulator technology, merging technologies, practical issues in modulator operation, and application beyond the digital telecommunications system. Entries include individual tables of contents, illustrations, and references. Contributors are engineers from communications firms around the world as well as academics from several American universities.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL681 2011-009034 978-1-4094-2338-6
Human performance on the flight deck.
Harris, Don.
Ashgate Publishing Co., ©2011 363 p. $69.95

(pa)
Harris (HFI Solutions Ltd, UK) presents a systemic overview of the role of human factors in aviation, covering scientific understandings of human information processing, workload, situation awareness, decision making, error, and individual differences; human-associated issues of pilot selection, training and simulation, stress, fatigue, alcohol, and environmental stressors; machine-associated factors such as display design, aircraft control, automation, and human-computer interaction on the flight deck; and managerial issues such as flight deck safety management, airline safety management, and incident and accident investigation. The study seeks to bring the study of human factors beyond sole attention to safety and demonstrate its application to increased operational efficiency.

CHEMICAL TECHNOLOGY

TP150 2011-033614 978-0-470-76774-0
Recognizing catastrophic incident warning signs in the process industries.
Title main entry. Ed. by Center for Chemical Process Safety.
John Wiley & Sons, ©2012 227 p. $125.00
This official publication of the Center for Chemical Process Safety of the American Institute of Chemical Engineers provides a detailed analysis of how and why incidents happen in the process industries and best practices to prevent them and minimize risk and damage when they do occur. Topics discussed include incident mechanics, leadership and safety culture, training, specific process safety information, procedures and rule codification, risk analysis, audits, and warning signs. Chapters are arranged for easy reference and study and a series of appendices provide check lists and self assessment tools for warning sign detection. Access to additional online resources is also provided. Specific author information is not provided.

TP156 978-1-60595-037-2
Introduction to nonwovens technology.
Batra, Subhash K. and Behnam Pourdeyhimi. (Engineering with fibers)
DEStech Publications, Inc., ©2011 337 p. $169.50 (pa)
Batra (emeritus) and Pourdeyhimi (both textiles, North Carolina State U.) continue their series on fibers by exploring fabrics made by means other than weaving, knitting, or lace-making. The 16 chapters are arranged under the themes of useful preliminaries, staple fiber-based technology, bonding technologies, integrated technologies, and winding it up. Coverage includes the structure of thin webs, preparing staple fibers for web formation, needlepunch bonding, the wetlay process, melt-extrusion technologies, and properties of raw materials and the use in fiberweb nonwovens. A foreword is provided by John Hearle, emeritus professor of textile technology at the University of Manchester.

TP248 2011-033598 978-0-470-93877-5
Renewable polymers; synthesis, processing, and technology.
Title main entry. Ed. by Vikas Mittal.
Scrivener/Wiley, ©2012 482 p. $175.00
The researchers contributing to this reference explore advances made in the efforts to replace fossil fuel-based polymers with environmentally friendly polymers created from renewable sources. A variety of topics are addressed, including: design, synthesis, properties and applications of plant oil polymers; acid mediated polymerizations; olive oil wastewater as a renewable resource for production of polyhydroxyalkanoates; atom transfer polymerization for polymer production from natural resources; polyesters, polycarbonates, and polyamides, and natural polymers as a boon for drug delivery. The reference is, of course, technical and intended for a specific audience, but includes numerous illustrations and extensive references. Editor Mittal (chemical engineering, the Petroleum Institute, Abu Dhabi) and 19 co-authors contributed to the book.

TP1150 2011-026189 978-0-470-41670-9
Applied polymer rheology; polymeric fluids with industrial applications.
Title main entry. Ed. by Marianna Kontopoulou.
John Wiley & Sons, ©2012 354 p. $125.00
Materials scientists and chemists review the current understanding of rheology for specific polymeric systems of current industrial interest, and the impact of the rheology on the processing characteristics and ultimate engineering properties of the polymer. Writing for engineers, researchers, and graduate students, they consider such aspects as basic concepts in polymer melt rheology and their importance in processing, branched polyolefins, wood-plastics composites, reactive systems and thermoplastic vulcanizates, polymer composites containing thermotropic liquid crystalline polymers, and electro-rheological fluids.

TP1180 2011-014028 978-0-470-74881-7
Dendrimers; towards catalytic, material and biomedical uses.
Caminade, Anne-Marie et al.
John Wiley & Sons, ©2011 538 p. $190.00
This reference work on dendrimers, compounds with tree-like structures that combine polymer chemistry and organic synthesis, provides comprehensive treatment of their varied applications in a variety of fields. Subjects addressed include synthesis of dendrimers, methods of characterization and types of dendrimers, applications for the elaboration or modification of materials, dendrimers as chemical and biological sensors, and applications in biology and medicine, conjugates for drug delivery, drug encapsulation, and unexpected biological applications. Specifically intended for academic and industry researchers, the book also will interest post-graduate and PhD students. The presentation is concise with extensive references and numerous helpful illustrations.

Published by Jefferson Digital Commons, 2012

Authors are Caminade, Turrin, Laurent, Ouali, and Delavaux-Nicot (Laboratoire de Chimie de Coordination du CNRS, France).

TP1180 2011-021419 978-0-470-43355-3
Designing dendrimers.
Title main entry. Ed. by Sebastiano Campagna et al.
John Wiley & Sons, ©2012 581 p. $149.95
Chemists report on the current status and ongoing research into synthesizing materials that are branched like trees, and display properties that the same material in different configurations do not. The topics include novel methods for dendrimer synthesis, shape persistent polyphenylene-based dendrimers, redox-active organometallic dendrimers as electrochemical sensors, enlightening structure and properties of dendrimers by fluorescence depolarization, and peptide dendrimers as artificial proteins.

MANUFACTURES, ARTS & CRAFTS

TS155 978-3-03785-224-8
Green power, materials and manufacturing technology and applications; proceedings; 2v.
Int'l Conference on Green Power....and Applications (2011: Chongqing, China) Ed. by Aimin Yang et al. (Applied mechanics and materials; vs.84-85)
Trans Tech Publications, ©2011 785 p. $276.00
Volume one of this two-volume set reports the results of recent research on CAD/CAM, composite design and optimization, control simulation, dynamics and vibration, and energy efficiency. The Chinese contributors propose a down-hole blow-out preventer, a material selection model based on total life cycle design, a reliable wireless network architecture using distributed control, and a method analyzing the relationship between geographical factors and protein content in winter wheat. Volume two addresses power systems, electronic circuits, material formulations, tribology, optical and visual signal, and sustainable materials. Three papers from Changchun University of Science and Technology develop a 785 nm wavelength super-luminescent diode and an 808 nm semiconductor laser with tailored gain for mode shape. Other topics of the 154 papers include computer modeling for the CFG pile in highway soft foundation, the hardness of a titanium alloy under laser shock peening, precast wall panels with carbon fiber grid, and mixed emulsion explosives for open pit mining.

TS155 2011-020006 978-1-61350-047-7
Operations management research and cellular manufacturing systems; innovative methods and approaches.
Title main entry. Ed. by Vladimir Modrák and R. Sudhakara Pandian.
Business Science Reference, ©2011 439 p. $185.00
For researchers and managers of organizations, Modrák (manufacturing technology, Technical U. of Kosice, Slovakia) and Pandian (mechanical engineering, Kalasalingam U., India) compile 20 chapters by an international group of engineers and economists on operations management, with a focus on topics related to layout design for manufacturing environments and production planning and scheduling in a cellular manufacturing environment. They address decision making in layout design, the development and comparison of optimization algorithms, and techniques for cell formation problems; production planning and scheduling, including cell loading and family scheduling, models of systems, operator skill, algorithms, and mathematical programming models; and aspects of flexible and robotic manufacturing cells, lean thinking, equipment replacement decision models, and a multi-modal assembly-support system.

TS155 2011-039462 978-1-118-12231-0
Resource service management in manufacturing grid system.
Tao, Fei et al.
Scrivener/Wiley, ©2012 516 p. $175.00
Tao (aeronautics and astronautics), Lin Zhang (both Beihang U.), and Yefa Hu (mechanical and electronic engineering, Wuhan U. of Technology) explain manufacturing grid, a new manufacturing model that combines grid technology with the supports of some common and unified architecture, standards, and criteria computing. They show how advanced computing technologies such as service computing, grid computing, and cloud computing can be applied to manufacturing in order to share resources, and speed the transformation of manufacturing from product-oriented to service-oriented. Scrivener is now owned by Wiley.

TS156 2011-039588 978-1-4200-7558-8
Industrial control systems; mathematical and statistical models and techniques.
Badiru, Adedeji B. et al. (Industrial innovation)
CRC Press, ©2012 360 p. $89.95
Badiru (systems and engineering management, Air Force Institute of Technology, US), Ibidapo-Obe (U. of Lagos, Nigeria), and Ayeni (an application development specialist with the 3M Company) present mathematically rigorous models and techniques for control systems in general, with specific application to industrial control systems. They address theoretical developments, applied formulations, implementation processes, and statistical control. Specific topics covered include industrial innovations and systems analysis, systems fundamentals, technical and production systems, systems filtering theory, systems control, linear and nonlinear systems, switching in systems, systems communication, transfer systems, statistical experimental design models, and response surface models.

TS173 2009-017252 978-0-470-45465-7
Accelerated reliability and durability testing technology.
Klyatis, Lev M. (Wiley series in systems engineering and management)
John Wiley & Sons, ©2012 411 p. $110.00

Klyatis demonstrates several applications of the methodology and equipment that provide physically accelerated reliability testing and accelerated durability testing on an actual product in a way that represents the real world's many interactions that influence products. Previous testing approaches focused on one factor in isolation, he says, rather than looking at the product as a whole. His topics include accelerated reliability testing as a component of an interdisciplinary system of systems approach, accelerated reliability and durability testing methodology, financial and design advantages of accelerated reliability/durability testing, and standardization.

TS183 978-3-03785-215-6
Advanced manufacturing technology; 3v.
International Conference on Advanced Design and Manufacturing Engineering (ADME 2011) (2011: Guangzhou, China) Ed. by Jian Gao. (Advanced materials research; v.314-316)
Trans Tech Publications, ©2011 2602 p. $414.00 (pa)
Volume one of the three-volume set from the September 2011 conference presents recent investigations on surface engineering and coatings, materials processing, and modeling manufacturing processes. The Chinese researchers investigate the properties of Ni-SiC composite coatings, thermal fusion treated D2 steel, a cold sprayed copper coating, and a slurry for titanium casting. Volume two examines mechanical behavior and fracture, computer-aided design, tooling and testing of materials, and thermal engineering theory. The last volume reports new developments in precision machining, micro-machining technology, laser processing techniques, and digital manufacturing. Topics of the 500+ papers include deformation errors in spiral finish milling of thin-walled blades, monitoring tool wear in rotary ultrasonic machining of ceramics, real-time vibration control of steel strips immersed in fluid, a quality information system for electronic ballasts, and the decrease of harmful substances in reconstituted tobacco sheet.

TS215 978-3-03785-250-7
Progress in extrusion technology and simulation of light metal alloys.
International Conference on Extrusion and Benchmark (2011: Bologna, Italy) (Key engineering materials; v.491)
Trans Tech Publications, ©2012 276 p. $193.00 (pa)
Drawn from papers presented at the 2011 International Conference on Extrusion and Benchmark, this collection of thirty-three articles on industrial technologies showcases current scholarship in materials extrusion techniques and simulation for materials testing. The work is divided into sections covering extrusion benchmarks, process optimization, innovative processes, material flow and friction evaluation, seam welding, dies and tools and microstructure prediction modeling. Individual entries include abstracts, illustrations, and notes, and a volume-wide key word and author index is provided. Contributors are academics in material engineering form European and Asian institutions.

MILITARY & NAVAL SCIENCE

UA770 2011-021257 978-0-415-66756-2
The Russian armed forces in transition; economic, geopolitical and institutional uncertainties.
Title main entry. Ed. by Roger N. McDermott et al. (Routledge contemporary Russia and Eastern Europe series; 30)
Routledge, ©2012 232 p. $145.00
This collection of eleven articles on the Russian armed forces provides an in-depth discussion of contemporary issues facing the military in the context of changing regional security requirements, national economic pressures, and world political trends. The volume is divided into five sections covering the transformation of Russia's conventional forces, Euro-Atlantic political contexts, defense economics, bureaucracy, the Russian military industrial complex, and internal civil-military relations. Individual chapters include illustrations, tables, and notes. Contributors are academics, policy researchers, and military and economic professionals from institutions around the world.<<:R>>

UA832 2011928926 978-1-60750-767-3
Theoretical and technical perspectives on security sector governance from the Adriatic to the Caspian Sea; proceedings.
NATO Advanced Research Workshop on Enhancing Security... (2009: Plovdiv, Bulgaria) Ed. by Frederic Labarre and Maria Tzankova. (NATO science for peace and security series; E. Human and societal dynamics; v.83)
IOS Press, ©2011 213 p. $157.00 (pa)
The 13 papers review the activities of two organizations: the Centre for South East European Studies, and the Centre for Black Seas Security Studies, which were feted by the Atlantic alliance in June and again in July of 2009. Offering first theoretical then technical perspectives, scholars and officials consider such topics as western Balkans transition and the role of the European Union, inter-agency cooperation in security sector governance and reform, parliamentary oversight of defense procurement in the context of the *Sea King* saga, assessing military student and education delivery performance, and education for emergency management based on multimedia information systems.

UG1242 2011-033783 978-1-60086-843-6
Designing unmanned aircraft systems; a comprehensive approach.
Gundlach, Jay. (AIAA education series)
Amer. Inst. of Aeronautics & Astronautics, ©2012 805 p. $109.95
US aerospace engineer Gundlach presents a textbook for an academic or professional engineering course that pulls together the several disciplines required to design unmanned aircraft. His topics include unmanned aircraft

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geometry and configurations, mass properties, launch and recovery, communication systems, the physics of remote sensing and *in situ* measurement, mission and payloads, system synthesis and mission effectiveness, and cost analysis. Although appropriate for academic study, the material is not intended to provide the depth necessary to develope flight hardware, says Gundlach. The book has undergone review by the Office of Security Review to ensure that it contains no classified information.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z665 2011-038480 978-1-61350-201-3
Systems science and collaborative information systems; theories, practices and new research.
Title main entry. Ed. by Emilia Currás and Nuria Lloret Romero.
Information Science Reference, ©2012 288 p. $175.00
Researchers in library and information sciences, and professionals who work with information in other fields, explore collaborative systems from the perspective of information systems, considering theoretical and practical aspects of the systems from a collaborative standpoint. Their topics include information as a multidimensional reality, a grounded theory approach to understanding user attitudes toward information systems, adaptive information retrieval based on task content, and academic libraries as complex systems.

Z675 2011-037666 978-1-59884-611-9
The basic business library; core resources and services, 5th ed.
Title main entry. Ed. by Eric Forte and Michael R. Oppenheim.
Libraries Unlimited, ©2012 227 p. $44.95
Written for the new or 'accidental' business librarian, but also useful for seasoned experts, this book offers annotated entries on free and fee online and print resources necessary to serve business patrons in all kinds of libraries. This fifth edition reflects changes in electronic resources since the fourth edition was published in 2002. The book begins with a guide to core business resources and concepts, then describes the major databases and periodicals of business research. Subsequent chapters describe federal, state, and local government resources. Three chapters cover major genres of business information: investments, marketing resources, and startups. Each of these chapters presents annotated entries on key online and print resources. The rest of the book seeks to go beyond previous editions, with chapters on the needs of academic researchers, collection development, and reference services. Forte is affiliated with the Online Computer Library Center. Oppenheim is affiliated with the University of California-Los Angeles.

Z675 2011-040762 978-0-8389-8593-9
International students and academic libraries; initiatives for success.
Title main entry. Ed. by Pamela A. Jackson and Patrick Sullivan.
Am. Library Association, ©2011 234 p. $44.00 (pa)
Jackson and Sullivan, information literacy and business reference librarians at San Diego State U., collect 13 case studies that demonstrate ways academic librarians and student service professionals can encourage library use among international students to help increase their success at academic institutions. Contributed by librarians from US, Canadian, and Australian universities, the initiatives address understanding cultural and educational backgrounds, engaging students before classes start, internships, participating in international education week activities, semester-long partnerships, outreach and instruction, conducting instruction in Spanish, addressing academic integrity, raising research skills, and other strategies. There is no index.

Z678 2011-029211 978-1-59158-860-3
Case study research; a program evaluation guide for librarians.
Green, Ravonne A.
Libraries Unlimited, ©2011 116 p. $45.00 (pa)
Green (library and information science, Valdosta State U.) explains the use of case studies to provide evaluation data for library programs to help librarians comply with outcome assessment demands. She introduces readers to this approach through a program-related process for a fictional case. She details the purposes and roles of evaluators and addresses evaluating a case study proposal, bounding the case, analyzing the context, planning questions and criteria, and identifying design and data collection methods. She describes how to establish and maintain political, ethical, and interpersonal relationships; collect, analyze, and interpret data; and evaluate and report the case study.

Z689 2011-028127 978-3-11-025301-6
Patron-driven acquisitions; history and best practices.
Title main entry. Ed. by David A. Swords. (Current topics in library and information practice)
De Gruyter Mouton, ©2011 205 p. $105.00
As libraries change from warehouses of books to learning spaces, librarians are reducing the number of books to make room for reading, conversation, and other activities. Therefore, it is more crucial which books they acquire and keep. Here librarians explain one approach to deciding which books to buy. Among their topics are patron-driven acquisitions as a disruptive technology, building a demand-driven collection at the University of Denver, building new libraries in the Near and Middle East, patron-driven acquisition and publishers, and controlling costs in a large scale model.

ZA3050 978-1-85604-759-3
Know it all, find it fast for academic libraries.
Dawson, Heather.
Facet Publishing, ©2011 p. $99.95 (pa)
Dawson, an academic support librarian in information services at the London School of Economics and Political Science Library, UK, helps academic library staff locate answers to the most common queries in key categories. She covers categories in alphabetical order such as study skills, different types of resources, PhD and researcher questions, academic staff questions, and subject literature and resources in areas like African studies, law, psychology, computer science, among many others. For each topic, she lists some typical questions, points to consider, and where to look, with sub-sections listing and descriptions of key organizations, libraries, and archives; dictionaries and encyclopedias; news services; journal indexing services; and Internet gateways and portals.

ZA3075 2011-033637 978-1-55570-807-8
Information users and usability in the digital age.
Chowdhury, G. G. and Sudatta Chowdhury.
Neal-Schuman, ©2011 208 p. $95.00 (pa)
G.G. Chowdhury and Sudatta Chowdhury (information and knowledge management, U. of Technology, Australia) describe how information professionals, researchers, and students can deliver the best online information services by analyzing user needs and behavior. They discuss theories of usability and user studies; tools, techniques, standards, and examples of practical usability studies; information behavior and information seeking and retrieval models; basic skills for conducting usability research in information science, such as conducting a study of different stages of an information product lifecycle; selecting users through sampling techniques; designing a study; basic quantitative and qualitative data analysis techniques for performing statistical analysis of data; web and digital library studies as examples of different methods and techniques; and issues and challenges in the broader usability research context.

ZA4080 2010-501181 978-90-5867-837-9
Business planning for digital libraries; international approaches.
Title main entry. Ed. by Mel Collier et al.
Leuven U. Press, ©2010 237 p. $67.00 (pa)
This collection of twenty-one articles on digital library management explores concepts and case studies in the planning and design of business strategies for libraries working with emerging technologies and evolving digital media collections. Divided into sections covering frameworks, practical applications, and case studies, chapters address such topics as business model innovation for digital libraries, the impact of digital technologies on science, technical and medical libraries, e-journal and e-book business strategies, and business models for open access publishing. Chapters include practical and theoretical information and a collection of case studies outlines real world challenges, and solutions implemented by digital library managers around the world. Contributors include academics, archivists and librarians from primarily European institutions. Distributed in the US by Cornell University Press. ❖