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February Issue ....................... Jan 5
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Rocket is one of the most famous locomotives of all
time. Designed and built by the engineers George
Stephenson and his son, Robert, Rocket competed in
the famous Rainhill Trials near Liverpool, England in
1829. At the time, the future of steam locomotives
was anything but certain, and the Directors of the
Liverpool and Manchester Railway had been advised
to use fixed steam engines on their new line instead
of locomotives. Rocket stunned the onlookers by
reaching a dizzying speed of 30 mph in demonstrations,
and, by winning the competition, secured the future
of locomotives for use on railroads. The illustration is
from Samuel Smiles’ Lives of the engineers (London,
1861-62). (Photo and caption courtesy of the Linda
Hall Library of Science, Engineering & Technology,
where the exhibition “Locomotion: Railroads in the
Early Age of Steam,” is on display through March 20,
2009.)
From the Editor

Susan Fingerman

Transition is a theme much on my mind as I write this editorial. There is the natural transition of the seasons, from summer to fall, and winter seems imminent as the temperatures fall through the 50's (F) in the Mid-Atlantic states of the US.

The idea of change is the watchword of our US electoral season as well, touted by both candidates be they multi-term or less than single term members of congress. And of course there are huge changes occurring in the global financial and industrial economic sectors.

Transitions are being felt by many information professionals as we continue to redefine ourselves and our organizations, reluctantly leaving print behind as necessary, and moving more to "guides" to the literature and database usage rather than the primary user of those services.

And finally there is the transition of our SLA leadership, as the second year of the new January-December terms begins. As evidenced by Engineering Chair Daureen Nesdill's message this issue, units are still grappling with the changes in election dates, conference planning, and program planning in general. We're getting there, but the June conference where most of the "new" leadership meets their constituents still seems a bit awkward to me.

The other major transition on my mind, that of a change in editor for SciTech News, is yet to happen. However, I do hope that a new editor will be found before the February issue, in which case this may be my final editorial. Therefore, I will briefly thank all those who contributed so much to my term, including the chairs and other officers who contributed much of the content and adhered closely to the issue deadlines. The faithful columnists such as Earl Mounts, who has been writing on new journals for many years, and those who started contributing on my watch; Bob Buchanan with his Beyond the Chemistry Web, and Lisa Johnston with her thematic Website columns which also add much value to SciTech News. And I would never forget my assistant editor, Christina Pikas, who spends many hours "pasting up" the issues, wrestling with the software, and even, dare I say it, editing some items that I miss. My husband, who serves as copy proofreader and, as a non-librarian engineer often asks thought-provoking questions, also gets my thanks.

I have been very fortunate to have had two terrific advertising managers in Martin Jamison and Carol Lucke, who greatly increased the number of ads per issue. Heidi Porth has been a stalwart subscription manager, in spite of taking care of ill relatives and creating a thriving quilt business with her husband.

Whatever the future format of SciTech News, online, in print or a combination of both, I will join you as a reader of its varied and valuable content.

I wish all of you a very Happy New Year and the most successful of transitions to 2009 and beyond. ✴

Susan Fingerman
susan.fingerman@jhuapl.edu
2008 Annual Conference Session Report

Monday, June 16, 2008
Presented by: Information Technology Division, Technical Standards Committee
Sponsored by: IEEE
Reported by: Karen Buxton, Karen.buxton@pni.gov

Three very knowledgeable speakers were featured at the session: Margie Hlava of Access Innovations, Oliver Pesch of EBSCO and Tim Jewell of the University of Washington. Margie Hlava gave a brief overview of information technology standards in a talk titled, “What’s happening in Standards?” She covered the latest developments from NISO, W3C, ISO, IFLA, and the Library of Congress.

Oliver Pesch of EBSCO began his presentation by providing a brief overview of usage statistics and of the “Counting Online Usage of Networked Electronic Resources” or COUNTER Code of Practice, which is the foundation for SUSHI. He provided a timeline of usage-related standards to demonstrate the evolution of COUNTER and showed why SUSHI was a natural outgrowth of it. Pesch explained that “COUNTER provides an excellent model for usage data; however, librarians need a more efficient method for getting the data. Currently they must download spreadsheets a file at-a-time from each vendor site then load them. A background query/response model is much more efficient and scalable – in other words, automate the process.”

The role of SUSHI will be to automatically harvest statistics from vendors without human intervention. The standard is in the very early stages of adoption by publishers and vendors. It should be much more widely implemented by end of 2009 because it will be made mandatory in release 3 of the COUNTER Code of Practice.

Tim Jewell talked about how the University of Washington (UW) has implemented the SUSHI standard. UW is using ScholarlyStats (https://www.scholarlystats.com) to consolidate and analyze their usage data. The Electronic Resource Management (ERM) tool used by the libraries there is set up to accept SUSHI feeds from ScholarlyStats. The ERM easily generates COUNTER-style reports and brings in ERM order information to calculate cost per use. At this point there is still a lot of manual labor involved in manipulating the data provided by vendors to create reports. However, this should become more automated as the SUSHI standard becomes more widely adopted.

[Ed. Note: This SLA 2008 Conference session report was inadvertently left out of our August issue.]
Wanted: SciTech News Editor

The Science-Technology Division, the Chemistry Division, the Engineering Division, the Aerospace Section of the Engineering Division, the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association are seeking a person to assume the duties of Editor of SciTech News, starting with the February 2009 issue. The publication is included in H.W. Wilson's Library Literature Index and has a circulation of approximately 1,300. The journal serves as a communication tool for the participating units and non-member subscribers, as well as an information clearinghouse, including articles (peer-reviewed and not), book reviews and other items of interest to the scientific and technical library community.

Responsibilities

The editor is responsible for the editing and the arrangement of materials submitted by the participating divisions, as well as for the procurement, editing and arrangement of additional materials obtained from other sources. The editor is also responsible for the accuracy and appearance of the completed issues and ensuring that the journal is published in accordance with the established publications schedule. Additional responsibilities include but are not limited to adhering to the budget, overseeing the financial status of the publication, maintaining the subscription list and mediating claims, and consulting with the participating divisions. The editor serves on the advisory boards of the Science-Technical Division and the Engineering Division as Bulletin Editor.

The position is part-time, with the bulk of the work occurring on a quarterly basis as issues are prepared for publication. Time spent on each issue will vary depending on the amount of material included and other factors.

Qualifications

The editor should be experienced in the layout, formatting, design and editing of printed and online materials. The editor should have experience utilizing the skills and techniques required to locate and obtain additional sources, articles and related materials to enhance materials submitted by the participating divisions. Management and communication skills are required for working with division representatives, as well as outside contributors and advertisers. Ability to meet deadlines and manage budgets is essential to the successful completion of the editor's responsibilities. Skills in the area of visual appearance and content management are also required. A background in the sciences or engineering as well as familiarity with the literature of these disciplines is highly recommended. Membership in the Special Libraries Association and the Science-Technology Division will be required of the successful candidate.

A modest stipend will be provided. For additional information on the position or to submit a letter of interest outlining qualifications for the position, please contact:

Christine Whitaker
Collection Development Librarian
School of Medicine Library
University of South Carolina
Columbia, SC 29208
CWHITAKER@gw.med.sc.edu
803-733-3346
Chemistry Division

Sue Cardinal, Chair

The Chemistry Division is concerned with chemistry and chemical technology, and the economics, educational advances, and information handling of developments in the field of chemistry and related subjects.

Sue Cardinal with baby Torstan. Torstan Robert Cardinal. Born 9/13/08. Weighed 8 lbs 2 oz. Length 20.25 inches. She thanks Luray and many others that have filled in for her while she was out on leave. She will return to her duties in early December.

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November 2008
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- biomaterials and bio-interfaces

ACS Applied Materials & Interfaces will begin publication in print and online in early 2009. To learn more about this exciting new journal from ACS Publications, and to gain free access to articles online in December 2008, please visit the journal website at http://pubs.acs.org/acsmi

EDITOR-IN-CHIEF:
KIRK S. SCHANZE, PhD
Professor of Chemistry
Chairman, Organic Chemistry
Department of Chemistry,
University of Florida

ACS Publications
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Beyond the Chemistry Web...

Bob Buchanan, Chemistry Librarian, Auburn University

The periodic table of elements is arguably the most significant intellectual achievement in chemistry. It remains an outstanding way to organize chemical information and is invaluable for students and practitioners alike. While it is not difficult to find a periodic table on the Internet, it is nice to show patrons ones that are special.

Science writer Theodore Gray has created an outstanding collection of over 1,400 pictures of the elements in The Periodic Table of Elements. In addition to pictures for each element, this labor of love also offers stories and facts about the elements. The data is from Mathematica’s Element Data function from Wolfram Research. Once you have clicked on an element, you get annotated pictures, a few basic properties, and a link to full technical data. Make sure to look at the full technical data link and take time to figure out all that it has to offer. Clicking on one of the eighty plus properties listed on the right hand column allows you to numerically (or visually) compare the elements. This is done with scatter plots, sorted scatter plots, 3-D periodic table, color-coded periodic table, balls, and crossed lines. This is my favorite periodic table.  
http://www.periodictable.com/

The Dynamic Periodic Table also helps visualize the properties of the elements. As a former research chemist, I found this site delightful. Parts of this website can be thought of as a table of data for a given property, but presented within a periodic table. For some properties, the “slider” shows which elements have values above or below a given value. This site includes fourteen properties, orbitals, isotopes, and quick links to the corresponding Wikipedia entry. Check out the link at the bottom of the page labeled “show” which automatically demonstrates the site.  
http://www.dayah.com/periodic/

WebElements of the Periodic Table is an established site that has recently improved site navigation. Tabbed browsing helps zero in on twenty-one categories which range from broad subjects (i.e., history, biology, geology, etc.) to specific properties (i.e., bond energies, allotropes, etc.). This site includes compounds of the elements, unlike the two sites listed above. There are ads, but they are easy to ignore. Data has been pulled from standard reference sources.  
http://www.webelements.com/

The American Chemical Society (ACS) provides a basic and easy-to-use Periodic Table – only elements and a few properties. The Royal Society of Chemistry Periodic Table gives more property data, covers compounds, and is visually striking but it downloads more slowly. The major value of these sites is that they can serve as a conduit to other ACS and RSC resources.  
http://acswebcontent.acs.org/periodic/tools/PT.html  
http://www.rsc.org/chemsoc/visualelements/PAGES/ptable_flav.htm

The Periodical Table of Videos has become a hit on YouTube. Filmed at the University of Nottingham and starring professor Martyn Poliakoff, each element has a three to five minute video that combines informal lecture and lab demonstrations. It is nice to see chemistry portrayed in such a lively format.  
http://www.periodicvideos.com/
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T: +1 800 221 2123 | E: institutions@natureny.com | W: www.nature.com/libraries
Materials Research & Manufacturing Section

Nora K. Stoecker, Chair

Members of the Materials Research and Manufacturing Section of the Chemistry Division share information concerning all phases of materials procurement, production, applications, and handling by means of educational activities, cooperative programs, publications, and Section-sponsored events at annual conferences.

Member News

Materials Research and Manufacturing (MRM) Section Chair-elect Cathy DiPalma is on the advisory board of First Book Greater Akron, a chapter of the national organization First Book. See: http://www.firstbook.org/site/c.lwKYJ8NVJyF/b.674337/k.F229/Our_Story.htm for more information.

Help us stay in touch!
The MRM Section Board continues to work on some of the projects identified during our annual business meeting held a few months ago. Communications is the theme of the year, and our listserv and web page are the two best ways we have to communicate with members and non-members alike.

Currently we’re reconciling the list of section members between those reflected by SLA’s records and the names that are registered with the list. We hope to identify those Section members who have not joined the list and will invite those members to join. It’s not a requirement by any means, but it sure makes it easier to communicate!

To stay in touch between quarterly newsletter columns, visit the website - http://units.sla.org/division/dche/mrm/index.htm and join the list. E-mail to Lyris@lists.sla.org. In the body of the messagetype: Subscribe sla-dmrm <your e-mail address> <FirstName> <LastName>

Not sure if you’re already a member of the list? Go to http://sla.lyris.net/read/login.

Cathy DiPalma, Incoming Chair

As the SLA program year draws to a close, I’m trying to provide incoming Chair Cathy DiPalma with a good feel for the kinds of issues and activities that she’ll be involved in next year. To that end, I’ve asked her to submit a Chair-Elect column for this issue. And thank you Cathy, for your kind words. I’m looking forward to supporting you next year as I’ve been supported so well this year! ✹

Warm regards,
Nora K. Stoecker, nstoecker@nksinfo.com

The Materials Research & Manufacturing Section of the Chemistry Division Welcomes its New Members

Helen Hanton
Air Products and Chemicals, Inc.
BTI
7201 Hamilton Blvd.
A32e1
Allentown, PA 18195

Daureen Nesdill
J Willard Marriott Library
Science & Engineering Library
295 S 1500 E
Salt Lake City, UT 84112-0860

Rosa Raskin
Rosa S. Raskin & Associates, LLC
451 Lassiter Drive
Highland Heights, OH 44143

November 2008

http://jdc.jefferson.edu/scitechnews/vol62/iss4/15

SciTech News
Message from the Section Chair-Elect...

Hello fellow MRM members.

I have been caught up in a whirlwind of activities since accepting the position of Chair-Elect of the Chemistry Division (DCHE) Materials Research and Manufacturing Section; in addition to being Program Planner for the 2009 Annual Conference in Washington, D.C.

It should come as no surprise that in the SLA whirlwind I have met many energetic and dedicated people. A debt of gratitude is owed to those who have helped guide and encourage me: Marty Rhine, Betsy Aldridge, Ben Wagner, Margaret Bower, the current DCHE Chair Sue Cardinal and the current MRM Chair Nora Stoecker.

Nora patiently answered questions and offered helpful suggestions as I began this journey last January at the SLA Leadership Conference in Louisville, Kentucky. We thank Nora for the leadership role she assumed in the MRM section; her contribution has been invaluable.

Looking toward 2009, I encourage the MRM membership to contact me with your ideas, comments, suggestions, questions, and yes, complaints concerning our section. Although materials science covers a broad range of activities and touches on many fields, we are all connected by the business of information and knowledge management within this very diverse discipline. I look forward to working together to continue to develop a stronger and more unified group.

Anticipation remains high for the 2009 Annual Conference in Washington, D.C. next June as we celebrate the SLA centennial. I am fortunate to have the DCHE Chair-elect, Luray Minkiewicz as well as Susan Makar as co-program planners. We have been working for several months to develop programs we think will enlighten as well as entertain. If time and finances permit, please consider attending this very special conference.

Cathy DiPalma
cathy.dipalma@saint-gobain.com
Saint-Gobain NorPro

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SciTech News

November 2008

Published by Jefferson Digital Commons, 2008
Engineering Division  Daureen Nesdill, Chair

The objectives of the Engineering Division are to provide an association for those having an interest in library and information science as they apply to engineering and the physical sciences and to promote the use of materials and knowledge for the benefit of libraries and other educational organizations.

I hope all our Division members and colleagues affected by Hurricane Ike are well and have found shelter. My holiday gifts to (and from) friends and family this year will again be donations to assist those impacted by hurricanes. With the economic meltdown affecting all aspects of our lives, these folks are going to need more assistance than originally expected.

Did you catch the online poster session at the 2008 annual conference? Five Divisions participated in the All Science Reception and Poster Session. There were about 45 presenters, lots of drink and food and even more attendees. Eric Resnls of Miami University and Patricia Kirkwood from the University of Arkansas did a great job of coordinating the posters and presenters for the Engineering Division. I would like to thank them for all they did including assisting with the online poster session in October and early November. I hope you took (or will take) the time to visit the site http://forum.lib.lsu.edu/slachem.

Bill Armstrong, Louisiana State University, has been the person behind the Chemistry Division’s online poster session for the past few years. With five Divisions contributing this year, the online poster session became a little daunting until I heard of a new service being offered through my university’s technology transfer program. A University of Utah graduate student in bioinformatics developed Trapeze as a system for mounting posters online in perpetuity. The cost is $10.00 a poster. Trapeze is still in beta, so the fee was waived for us. Being in beta has also provided us the opportunity to improve Trapeze. Bill has always provided a way for visitors to the online poster session to leave comments and ask questions for the presenters to answer. Trapeze heard this and is currently investigating how to make the poster entries in their system interactive. If Trapeze works out ok for this year’s online poster session, we may be using it again in the future.

In what format do you want to be reading your SciTech News? Another change being discussed is the format of SciTech News. Should it be kept in print, change to electronic or both? I would like to see SciTech News in electronic format and propose that subscribers who want print can pay for their copy and the cost of postage. We may have to upgrade our Website to include access to this publication – or should we start a blog? If you have any ideas, concerns, or opinions about the future of SciTech News, drop me a line at daureen.nesdill@utah.edu. We will be discussing the future of SciTech News at the SLA Leadership Summit in January.

The Awards Committee is busy. Bing Wang, Georgia Tech, is the new Chair of the Awards Committee and is responsible for posting the announcements you see in this edition of SciTech News. Committee members include Bette Finn, Georgia Tech; Jane Stephens, Texas A&M; Helen Josephine, Stanford University; and Hema Ramachandran, Cal State Univ-Long Beach. They cannot perform this important function alone. You folks need to help them out by nominating yourself and/or others for these awards. Look around and communicate with colleagues to find the next Elsevier Engineering Librarian of the Year Award. Who do you know who has made a contribution to the Division, SLA or the profession? Please do not wait until the deadline. Send in the names now so we can initiate the procedure.

Continuing education courses can be funded. Have you ever wanted to take a CE course while at the annual conference? Next year the Engineering Division will be offering CE courses on environmental engineering and industry standards. The full line-up of courses will be announced later. IEEE has partnered with the Division once again to offer a travel stipend to attend CE courses offered at SLA annual conference. Think about it, watch for the announcement of the CE courses and apply. All it takes for you to enter is to make the decision, write an essay and mail the application to the Awards Committee. Very simple. From what I hear traveling to Washington, DC is expensive.

Revamping the Engineering Division’s Recommended Practices is going slowly. I developed a time line of committee activities and deadlines and presented it to the Board at the June Annual Conference. I wanted the Board to see some of the problems with the new SLA fiscal calendar conflicting with the conference calendar.
The Board voted to sever the elected Director position from the non-elected Awards Committee Chair. This allows the Awards Committee to start their work in August, when appropriate, instead of January when elected positions begin.

Additional work on the Recommended Practices has been going slowly. It is my fault. My library is undergoing construction and reorganization so I have found it difficult to find the time for SLA work. The Past Chair, Bob Tolliver and I, along with Kathryn Breininger, Aerospace Section Chair, will be able to update the section on elections and committee positions as we hold the Division's elections. I have been working on the duties of the Vendor Relations Chair and will be talking to our Treasurer, Andy Shimp, about his role.

In January, when the dust will finally settles here, I hope to have a wiki up and running. This way all Division members who want to contribute to the rewriting of the Recommended Practices will have the opportunity.

**Speaking of wikis, have you worked your way through SLA's 23 Things?** This is an opportunity to learn the new communication tools, RSS feeds, blogs, wikis, tagging, etc. SLA has extended the deadline to Dec 15th. Check it out at SLA Innovation Laboratory [http://www.sla.org/innovate/](http://www.sla.org/innovate/). If you can’t play at work because of security constraints set by your employer, please let me know.

**As Chair of the Engineering Division, I've had a great time learning.** This position does involve a lot of work, but I did meet and work with so many great people. I sincerely thank my Board members for all their assistance in the planning and organizing of the program for June conference. I especially thank Lee Phariss for organizing the Standards Update and Sara Davis for organizing and promoting the DTIC CE courses. I would also like to thank Janice Saylor, American Institute of Aeronautics and Astronautics; Esther Miller, Transport Canada; Valeria Long, Grand Valley State University; Susan Morley, CSA International; Jennifer Hatfield, Lockheed Martin and Vani Inampudi, Qualcomm, Inc for taking care of the session evaluations for me. With all the unexpected running around to make sure the rooms were alright and speakers were taken care of, we would not have had any feedback without your work.

And of course I could not have done it without Kathryn Breininger. All the emails and telephone calls for assistance, second opinions, requests for ideas, need a speaker, what are “peas and carrots” anyway, have been addressed. I could not have had a better partner to work with in organizing the program for the 2008 SLA Annual Conference. Thank you Kathryn.

See ya’ll in Washington for SLA’s 100th anniversary celebration,

Daureen Nedsill
SLA Engineering Division Chair

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CALL FOR NOMINATIONS AND APPLICATIONS

Special Libraries Association Engineering Division
$1000 IEEE Continuing Education Stipend

The IEEE (Institute of Electrical and Electronics Engineers) is sponsoring a travel stipend for SLA Engineering Division members of up to US$1000 toward payment of expenses incurred while attending any Continuing Education course offered at the annual Special Libraries Association conference in Washington, DC, June 14-17, 2009. The stipend may be applied to travel, food, and one night’s accommodation.

The IEEE Stipend will be given to the qualified Division member who submits an essay, of three or fewer double-spaced typed pages, which is judged to be the best paper that addresses “How the member will benefit professionally from a continuing education course.” The winner will also be required to submit an article to the Engineering Division newsletter (SciTech News) on how the course helped them in library applications, within twelve months of completion of the course.

Criteria for entry:
Be a member of the SLA Engineering Division in good standing for at least one year as of January 1, 2009.

Special Instructions:
Type your full name (without any additional personal information) at the top of each essay page. Double space the typing on all pages.


The recipient of the IEEE Continuing Education Stipend will be notified by April 1, 2009.

The winner must be present to accept the award at the annual Engineering Division Business Meeting. The winning paper will be submitted for publication in the Division newsletter (SciTech News).

Submit Entries for the award to:

Bing Wang, SLA-ENG Awards Committee
Georgia Tech Library & Information Center
Atlanta, Georgia, 30332-0900
Phone: (404) 894-0816
E-mail: bing.wang@library.gatech.edu
CALL FOR NOMINATIONS AND APPLICATIONS

Special Libraries Association Engineering Division
US$1200 Inspec Student Stipend Award -- Call for Applications

Inspec is sponsoring, for library school student members of the Engineering Division, the award of a US$1200 travel stipend toward payment of expenses incurred while attending the annual Special Libraries Association conference in Washington, DC, June 14-17, 2009.

The Inspec Award will be given to the qualified student who submits an essay of three or less double spaced typed pages that is judged to be the best essay submitted describing the following scenario:

"You’re a corporate librarian who was just told by management the company is considering doing away with the physical library and replacing it with a virtual library to save money. With a virtual library, your job will be eliminated. You’ve been asked to attend a meeting where you will have the opportunity to present convincing arguments to management on the benefits and importance of keeping a physical library on site."

Qualifications:
1. Be a student member of the Engineering Division of the Special Libraries Association.
2. Be attending his or her first SLA Conference.

Special Instructions:
1. Provide your full name, address, telephone number, email address, and a statement, on one page, of your qualifications, as given above, for entering the award competition. Include the name of your library school.

2. Type your full name (without any additional personal information) at the top of each essay page. Double space the typing on all pages.


The recipient of the Inspec Award will be notified by April 1, 2009.

Submit Entries for the award to:

Bette Finn, SLA Engineering Division Awards Committee
Georgia Tech Library and Information Center
Georgia Institute of Technology
Atlanta, Georgia 30332 0900
Phone: (404) 894 1790  Fax: (404) 894 8190
E-mail: bette.finn@library.gatech.edu
Learning patents – A librarian’s experience taking the SLA continuing education course

By Bing Wang, winner of the IEEE Continuing Education Travel Stipend, June 2008

Early this year I submitted an essay to the Engineering Division’s Awards Committee to be considered for the Continuing Education Travel Stipend sponsored by IEEE. Winning this stipend allowed me to attend the continuing education course titled “Diving into Patents: A Primer for Librarians” at the annual SLA Conference this past June in Seattle. The full day CE course was co-sponsored by the Chemistry and Engineering Divisions.

I decided to apply for this stipend and attend the CE course for several reasons. As we all know, both scientists and engineers often need not only a technical literature search but also a patent search in order to get the most complete information about a technological field, especially when they start to do research in a new area. My duty as an engineering librarian requires me to educate them about patents and answer questions during their searches. In addition, the Georgia Tech Library is the only Patent and Trademark Depository Library in Georgia and houses all available patents issued in the U.S. since 1790. As a member of the information services department that provides patent assistance, I need to assist a large number of public users.

More specifically, I co-teach a 3 hour bibliographic session each semester for the School of Chemistry’s senior organic synthesis class, with the chemistry librarian. This session starts with a brief overview of chemical information resources, followed by hands-on training on how to search five major chemistry databases including NIST Chemistry WebBook, SciFinder Scholar, Web of Science, MDL CrossFire Beilstein and Gmelin. After the session, students are required to finish a literature problem set which has one question designated for patent searching. The performance on this question reveals that most students don’t know how to search for patents, how to read patent citations nor where to locate full-text patents. Emphasis on patent information and searching thus has become necessary and important for teaching future sessions.

By attending “Diving into Patents: A Primer for Librarians”, I’ve learned the basics of patent documentation, classification system, databases, and other tools. Instructors Michael White, Queen’s University, Denise Callihan, PPG Industries, Inc., and Leena Lalwani, University of Michigan, are very knowledgeable, responsive to questions, and detail oriented. The class has clear objectives and is well-organized.

The information I learned was applied to the redesign of the bibliographic session for the School of Chemistry’s senior organic synthesis class (CHEM 3380) early in this fall semester. Students learn the basic facts about patents, how to search for patents in SciFinder, and how to interpret patent literatures. They will use this information to answer the patent question in their assignments. Knowledge I gained from the CE course has also helped me tremendously during the development of an ongoing library instructional class called “Searching Patents for Scientists and Engineers”, which is open to the entire Georgia Tech Campus. My intention is to educate researchers about patents and teach them how to use various resources. In addition, I provide appointment-only patent assistance to both the GT community and the general public.

I appreciate the opportunity IEEE and the Engineering Division provided me to attend this CE course and learn more about the patent literature. It was a wonderful experience and I encourage any Engineering Division member who needs support to attend one of the SLA CE courses to apply for the Continuing Education Travel Stipend sponsored by IEEE.

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SciTech News
Published by Jefferson Digital Commons, 2008

November 2008
CALL FOR NOMINATIONS AND APPLICATIONS

2009 Elsevier / SLA Engineering Division Engineering Librarian of the Year Award

Please consider nominating a colleague or associate for our Engineering Librarian of the Year award. This US$1500 gift is offered annually to honor a member of the SLA Engineering Division.

The award is sponsored by Elsevier and the Division to highlight the accomplishments and contributions of members to the engineering librarian profession. Recognition comes in the form of the stipend, a certificate, and a presentation at the Division's Annual Business Meeting held during the annual SLA conference.

Prospective candidates are encouraged to nominate themselves—or they may be nominated by a colleague or associate.

Criteria for entry:
1. Membership in good standing in the SLA Engineering Division, as of January 1 of the previous year in which the award is presented.

2. Distinguished achievement in the engineering library profession, through an exceptional contribution on the job, within the SLA Engineering Division, or within the industry at large. This accomplishment should have taken place within the calendar year immediately preceding the nomination (2008). However, in selected cases, based solely on the Awards Committee's judgment, recognition may be given for an ongoing, long-term contribution.

Deadline for submission: March 2, 2009

Provide full name, address, telephone numbers, e-mail address, and a maximum one-page statement of the nominee's qualifications to:

Jane Stephens
Sterling C. Evans Library
Texas A&M University Libraries
5000 TAMU
College Station, TX 77843-5000
jstephens@tamu.edu / Subject line = SLA AWARD
979-845-5382 (voice mail)

The winner must be present to accept the award at the annual Engineering Division Business Meeting in June.
Aerospace Section

Kathryn Breininger, Chair

The Aerospace Section of the Engineering Division encourages communication and cooperation among information professionals concerned with aerospace, aeronautical and related technologies. In addition, it fosters dialog with entities such as NASA, the AIAA and other important sources of technical data and bibliographical services.

It is hard to believe that Fall is already upon us, but the truth is there before my eyes – leaves blow across the yard, school buses have replaced RVs and trailers on the road, and my term as Aerospace Chair is rapidly drawing to a close.

In January I will transition to Past-Chair, and turn over the Chair responsibilities to our Chair-elect, Gale Harris from Lockheed Martin Aeronautics. Gale has been very busy this past year with program planning for the SLA Conference 2009 which will be held in Washington, D.C. As you know, 2009 will be the year of celebration for SLA’s 100th anniversary. Mark your calendars and start making plans for attending this historic event in June!

The SLA Leadership Summit, January 14-17, 2009, will be held in Savannah, GA. It promises to be a great opportunity to learn from the experts, explore new resources available to SLA leaders and members, and for leadership development as well as in SLA governance. Anyone wanting to learn and develop leadership skills is encouraged to attend the Summit. You will experience the famous southern hospitality, have opportunities to network with colleagues in SLA, meet old friends and make new friends while in Savannah.

Our newly elected SLA Board of Directors will be focused on continuing to build SLA as a forward-thinking organization, and on helping us all to continue our professional development. Watch for announcements from the Board and for opportunities to volunteer in SLA. SLA President-Elect, Gloria Zamora sent out a call for volunteers this Fall. We now have a volunteer database with opportunities to serve on SLA committees or in chapters, divisions or caucuses. You can also submit your name as a candidate for the Board of Directors. Here is the link to Gloria’s article: http://www.sla.org/content/community/committee/volunteer.cfm I encourage all of you to take a look and seriously consider volunteering for SLA. You will find it a rewarding and educational experience.

I have truly enjoyed my time as Aerospace Chair. I feel like I have finally learned what I need to know as it is drawing to a close. It has been a lot of work, but also a lot of fun, and has given me the opportunity to further develop my leadership skills, make lots of new friends, and learn from many other people. I would like to recognize and thank the many who helped me during my two-year stint as Chair-elect and Chair but am sure I would forget someone if I tried to list them all! To all of you who answered my endless questions, pointed me in the right direction, and encouraged me – a sincere thank you. I am grateful to all of you. You were instrumental in helping me develop personally and professionally, and have a successful tenure as a member of the SLA leadership.

I would. However, like to especially thank Daureen Nesdill, Engineering Chair, for her support and help as we learned together through our years as Chair-elect and Chair. Also Amy Smith, Aerospace Section Past-Chair, for her encouragement, assistance, and patience with my many, many questions.

Sincerely,

Kathryn Breininger

SLA Aerospace Section Chair
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2008 Asian Student Awards
to attend the Special Libraries Association (SLA) Conference
in Washington, DC, USA, June 14-17 2008

In 2009 the SLA Asian Chapter will be offering an award jointly with the Science-Technology (ST) Division of SLA. The award will offer US$1800 to cover the costs of attending the 2009 SLA Annual Conference, to include: conference registration, hotel lodging, economy return airfare to Washington D.C. and other related costs for the successful applicant. The award will be formally acknowledged in Washington D.C. at the Science-Technology Division’s Award Ceremony.

Eligibility:
• Have an excellent command of written and spoken English
• Be enrolled in an accredited Masters level LIS program in Asia during academic year 2008-09
• Be eligible to travel to the USA
• Be interested in a career in special librarianship, preferably with a focus on working in a science and technology environment
• Be a first-time attendee at an SLA conference

Application Procedure:
Write a two part essay, in English, of approximately 500 words, which:
Tells us why you chose to enroll in a graduate/masters LIS program and what you hope to do with your degree and especially why you might wish to work in the science-technology area.

Addresses one of the following three topics:
• What skills must the new information professional possess and why?
• What is the biggest challenge facing the profession, in general, and information professionals in your country, in particular?
• What benefits/knowledge do you hope to gain from attending the 2009 SLA conference? (Do not describe what you will do during the conference).

Include a letter of recommendation which explains why you would be a good candidate for this award. The recommendation may come from either a faculty advisor in your programme, or an SLA member who knows you well.

Include a copy of your most current CV with your current postal and email address and telephone number.

All documents must be prepared in Microsoft Word and must be e-mailed no later than 31 December 2008 to Scott Davidson, Award Chair, SLA Asian Chapter at scottjdavidson@gmail.com and Sheila Rosenthal, Chair of the Sci-Tech Division Awards Committee at slr@sei.cmu.edu. Notification of award status will be made in March 2009.

For further information about the Science-Technology Division please consult their website at http://units.sla.org/division/dst/

Post Award Requirements:
The recipients of the 2009 Asian student award will write a brief article, in English, on their conference experience for publication in the Autumn 2009 issue of the SLA Asian Chapter Newsletter and for the Science-Technology Division’s newsletter, SciTech News. The 2009 award winner will be asked to maintain contact with the SLA Asian Chapter Board during the year of their Award. The recipient will be asked to serve on a Science-Technology Division Committee of their choice. SLA Board Members and Members of the Science & Technology Division will be appointed as contacts for the awardees before, during and following the conference.
Science-Technology Division  Christine Whitaker, Chair

The objectives of the Science-Technology Division shall be to draw together those members of the Special Libraries Association having an interest in the role of library and information science as applied to the recording, retrieval and dissemination of knowledge and information in all areas of science and technology, and to promote and improve the communication, dissemination and use of such knowledge for the benefit of libraries and their users.

Thanks for a great year and wishes for 2009!
I enjoyed it all, the stress and time limits were manageable, and the rewards were worth it.

We will be reaching out to all members in these next few months of 2008 to fill committee and liaison positions for the Division. I can’t say often enough that the Division needs input from all of its members, and I urge you to volunteer for a place on one of our committees. New, fresh ideas come from the meeting of many minds, and Sci-Tech needs all of you in order to provide a community that will foster growth and excellence for our diverse membership. Serving does require some commitment of time, but no one works in a vacuum! We have support for every position, and no one minds answering questions. I can personally vouch for the benefits of involvement, as I have been stimulated and challenged this past year to reach out and see a world beyond my desk. My comfort zone is much larger today than it was two years ago. I have also made friends and business contacts that I will continue to value long after my term as Chair.

Changes for SciTech News
Thanks to Susan Fingerman for her years as editor. She will be turning editorship over to a new person in 2009. Susan has done an outstanding job as editor, and we hope she will continue to be an asset to the Division for years to come.

We currently have an ad-hoc committee at work studying the issues involved in choosing to remain in print, or to switch over to an online format. There has been discussion of this change for at least two years, and many issues have arisen. This committee will gather some answers to the variety of questions that have been asked, and make a recommendation to the Sci-Tech Board. My thanks to all who have volunteered for this task! We have a good mix of experienced leaders, “techies” and “First Fivers” to ensure a broad perspective.

2009 Centennial Year
The 2008 Conference in Seattle was a great success. All of Sci-Tech’s programs got positive feedback, and our new initiatives, such as the All-Sciences Poster Session and Reception were all received enthusiastically. The 2009 program planning committee is already deep into conference planning for Washington D.C., and we have some hot new sessions planned, as well as your annual favorites.

We are always looking for ways to promote SLA and especially the Sci-Tech Division. The Association has given us the opportunities to have SLA Centennial stamps and a license plate, but what can Sci-Tech do to celebrate as a Division? Please send us your ideas.

Christine Whitaker
CWHITAKER@gw.med.sc.edu

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2009 Science-Technology and Engineering Divisions
Bonnie Hilditch International Librarian Award

The purpose of the Bonnie Hilditch International Librarian Award, sponsored by the Science-Technology and Engineering Divisions, is to provide an opportunity for a librarian outside of the United States and Canada to attend the annual Special Libraries Association (SLA) conference. The award will cover conference registration, lodging and airfare, up to and not exceeding US$2000. The SLA annual conference will be held in Washington, D.C., USA, June 14-17, 2009.

The Awards Committee reserves the right to withhold the award if a sufficient number of appropriate candidates are not nominated.

Qualifications:
Be a current member of SLA, preference given to members of the SLA Science-Technology and/or Engineering Division.

Candidate should reside and work outside of the United States and Canada and be working currently in a library, information center, library school or other information capacity, preferably either in the science and technology and/or engineering area.

Submission should be in English.

Nominations:
Self-nominations are encouraged. Send an online statement including information on the candidate's professional career, professional activities or offices held, special projects or services, publications, and any other related functions that qualify the person for the award.

Documentation must include a current curriculum vitae OR resume for the candidate, significant publications, supporting letters, etc.

Please inform the committee if you are currently applying for other SLA awards.

Nominations and all accompanying materials should be sent to Sheila Rosenthal, Chair of the Sci-Tech Division Awards Committee, at the following email address: slr@sei.cmu.edu. E-mail nominations and materials preferred.

Application Procedures:
1. The winner will be responsible for making all necessary travel arrangements (passports, visas, etc.) for a visit to the U.S. as well as for conference attendance.
2. Include a current resume and relevant materials as outlined in the criteria for the award.

Post Award Requirements:
1. Recipient will write a brief article (approximately 1,000 words) on the conference experience for the November 2009 SciTech News.
2. Recipient will be asked to serve on the Science-Technology and Engineering Division Awards Committee the following year in order to provide for the continuity and enthusiasm of this award.

Notification:
1. Applicants will receive notification of award status by early February 2009. The award check will be sent to the recipient as soon as the receipts are received by the Awards Chairperson.
2. The recipient’s names will be posted to the Science-Technology and Engineering Division’s Web sites.
3. The announcement and introduction of the recipient will take place at both the Science-Technology Division’s and the Engineering Division’s Annual Business Meetings/breakfasts.
S. Kirk Cabeen Travel Stipend Award
Sponsored By The Science-Technology Division

The S. Kirk Cabeen Travel Stipend Award is offered to a library school student or first time conference attendee. The US$750 award is to be used toward the expense of attending the Special Libraries Association (SLA) Annual Conference in Washington, DC, USA June 2009.

Qualifications:
- Be a library school student or first time attendee
- Be a current member of SLA, with preference going to Science-Technology Division members
- If NOT a student, then must be attending his or her first SLA conference

Nominations:
Self-nominations are encouraged.
Send a typed and signed document including complete title, Library School and anticipated graduation date, employer, and all professional and personal contact information.

All nominations must also include the following:
A short essay (500 words or less) on the theme of the 2009 Annual Conference: "Information to Inspiration: Knowledge & Vision Shaping the Future." The essay should be double-spaced. Neatness, spelling and grammar will count in judging. Supporting documentation must include a current curriculum vita OR resume for the candidate, significant publications, supporting letters, etc.

Applications should also mention if you are currently applying for other SLA division awards.

Deadline For Nominations: March 1, 2009.
Nominations and all accompanying materials should be sent to Sheila Rosenthal, Chair of the Sci-Tech Division Awards Committee, at the following email address: slr@sei.cmu.edu

Post Award Requirements:
1. Recipient (s) will write a brief article (approximately 1,000 words) on the conference experience for the November 2009 SciTech News.
2. Recipient (s) will be asked to serve on the Science-Technology Division Awards Committee in the following year to provide for the continuity and enthusiasm of the awards.

Notification:
1. Applicants will receive notification of award status by mid March 2009. The award checks will be sent to the recipient as soon as the receipts are received by the Awards Chairperson.
2. The recipients' names will be posted to the Science-Technology Division's Web site
3. The award will be announced and presented to the recipient at the Science-Technology Division's Annual Business meeting/breakfast.
The American Institute of Aeronautics and Astronautics was formed in 1963 through the merger of the American Rocket Society and the Institute of the Aerospace Sciences. AIAA has added the journal content published by those two societies (1930–1962) to the AIAA Electronic Library. Here are some of the pioneers that you’ll find in the IAS/ARS eJournal Archive:

- Alfred Africano
- Holt Ashley
- Richard H. Battin
- Geoffrey de Havilland
- Jimmy Doolittle
- Donald Douglas
- Charles Stark Draper
- Hugh L. Dryden
- Kraft Ehrlich
- Alexander H. Flax
- Robert Goddard
- Jerry Grey
- H. R. Grumman
- Jerome Clarke Hunsaker
- Clarence "Kelly" Johnson
- Robert T. Jones
- Wolfgang Klemperer
- David Laser
- William Littlewood
- W. Randolph Lovelace II
- Frank J. Malina
- Glenn Martin
- Max Munk
- John Northrop
- Gordon Oates
- A. K. "Tony" Oppenheimer
- G. Edward Pendray
- Jean Piccard
- C. G. Rosby
- William R. Sears
- Igor I. Sikorsky
- A. M. O. Smith
- Athelstan F. Spilhaus
- John Stack
- Martin Summerfield
- Theodore Theodersen
- Robert Truax
- Hseu-Shen Tien
- Walter Vincenti
- Theodore von Kármán
- Fred Whipple
- Theodore Wright
- Eastern Air Lines, Inc.
- The Glenn L. Martin Company
- Goodyear-Zeppelin Corporation
- Kawasaki Aircraft Co., Ltd., Japan
- Lockheed Aircraft Corporation
- McDonnell Aircraft Corporation
- MIT
- National Advisory Committee for Aeronautics
- National Bureau of Standards
- New York University
- Northrop Aircraft, Inc.
- Pacific Railway Equipment Co.
- Resinous Products and Chemical Company
- Scientific Research, Air Ministry, England
- Service des Fabrications de l'Aéronautique, Paris
- Sperry Gyroscope Company
- Stanford University
- Tokyo Imperial University, Japan
- United Aircraft Corporation
- University of Cincinnati
- University of Colorado
- University of Michigan
- University of Minnesota
- U.S. Navy Department
- Vultee Aircraft, Inc.
- Westinghouse Research Laboratories
- Woods Hole Oceanographic Institution

**Pioneering Women**

- Beverly Beane (1941-1960)
- Martha E. Graham (1949)
- Elizabeth Hahneman (1948)
- Wilhelmina D. Kroll (1949)
- Rose A. McParland (1940)
- Pauline M. Sherman (1957)
- Dolores Ulford (1951-1953)
- Eva M. Winkler (1955-1959)

**Pioneering Institutions**

- Allison Engineering Company
- Aluminum Company of America
- Armstrong Siddeley Motors, Ltd.
- The B.F. Goodrich Company
- Boeing Airplane Company
- Boeing School of Aeronautics
- Caltech
- Central Aero-Hydrodynamical Institute, Moscow
- Civil Aeronautics Administration
- Curtiss Aeroplane and Motor Co., Inc.
- Curtiss-Wright Corporation
- The Daniel Guggenheim Aircramp Institute
- The Dow Chemical Company
- Eastern Air Lines, Inc.
- The Glenn L. Martin Company
- Goodyear-Zeppelin Corporation
- Kawasaki Aircraft Co., Ltd., Japan
- Lockheed Aircraft Corporation
- McDonnell Aircraft Corporation
- MIT
- National Advisory Committee for Aeronautics
- National Bureau of Standards
- New York University
- Northrop Aircraft, Inc.
- Pacific Railway Equipment Co.
- Resinous Products and Chemical Company
- Scientific Research, Air Ministry, England
- Service des Fabrications de l'Aéronautique, Paris
- Sperry Gyroscope Company
- Stanford University
- Tokyo Imperial University, Japan
- United Aircraft Corporation
- University of Cincinnati
- University of Colorado
- University of Michigan
- University of Minnesota
- U.S. Navy Department
- Vultee Aircraft, Inc.
- Westinghouse Research Laboratories
- Woods Hole Oceanographic Institution

**78 Years of Pioneering Research**

http://jdc.jefferson.edu/scitechnews/vol62/iss4/15

**November 2008**

SciTech News
The American Institute of Aeronautics and Astronautics was formed in 1963 through the merger of the American Rocket Society and the Institute of the Aerospace Sciences. AIAA has added the journal content published by those two societies (1930–1962) to the AIAA Electronic Library. Samples of the rare content that you’ll find in the IAS/ARS eJournal Archive:

1930
- To the Moon in 15 Years Says Pelterie
- Oberth Rocket Ready

1931
- Predicts 3-Hour Berlin-New York Flight
- Italian Rocket Plane Makes Successful Flights
- Moon Flight Will Cost $2,000,000,000, Says Astronomer

1934
- Flying Boats for Transoceanic Service
- Metallurgy in Aviation
- Speed of Air Driven Rotors in Gyroscopic Instruments
- Air Force Measurements on Bodies Moving Through Still Air

1941
- Possibilities of the Two-Stroke Cycle for Small Aircraft Engines
- Review of the Effects of High Altitude Flying
- Aircraft Plywood and Adhesives

1942
- A New Instrument for Celestial Navigation
- An Improved Longitudinal Stability Calculation

1943
- Aerodynamic Performance of the Towed Glider
- Limits of Human Heat Regulation
- Design-Strengthened Materials

1944
- Propeller Design Requirements
- Periodic Aerodynamic Forces on Rotors in Forward Flight

1945
- Calculated Gust Loads for Tailless Airplanes
- The Glauert-Prandtl Approximation for Subsonic Flows of a Compressible Fluid
- The New York Rocket Battalion: Experiences of a Civil War Rocket Unit

1946
- British Aircraft Gas Turbines
- German Development in the Field of Rocket Powered, Controlled Missiles
- Liquid Propellant Rocket Development

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includes vintage advertisements, editorials, awards, book reviews, tables of contents, and first pages.

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the AIAA Electronic Library at www.aiaa.org/search and purchase individual papers. Institutions may subscribe to the entire collection; contact Chris Grady at chrisg@aiaa.org, 888.854.6651, or 703.264.7509.

78 Years of Pioneering Research

SciTech News

November 2008

Published by Jefferson Digital Commons, 2008
2009 SCI-TECH DIVISION ACHIEVEMENT AWARD

The Achievement Award is the highest annual award presented by the Science-Technology Division and is reserved for those recipients whose professional work is marked by distinction and dedication to scientific and technical librarianship. The purpose of the award is to recognize those Division members who have made outstanding contributions to the Division and/or to the literature of science and technology librarianship in the past 1 to 5 years.

The US$750 award is presented annually, with a corresponding scroll describing the reason for the award. The Science-Technology Division Awards Committee reserves the right to withhold the award if a sufficient number of appropriate candidates are not nominated.

ELIGIBILITY:

Be a current member of the Special Libraries Association and have been a member of the Science-Technology Division for at least three years; be working currently in a library, information center, library school or other information capacity.

NOMINATIONS/APPLICATIONS:

Self-nominations are encouraged.

Include a list of accomplishments and activities over the past 1 to 5 years. The materials should be double-spaced. (750 words or less) Neatness, spelling and grammar will be considered in the judging. Supporting documentation, although not mandatory, may include a current curriculum vita OR resume for the candidate, significant publications, supporting letters, etc.

DEADLINE FOR NOMINATIONS: March 1, 2009.

Please send all nominations and accompanying materials to:
Sheila Rosenthal, Chair of the Sci-Tech Awards Committee
slr@sei.cmu.edu

Sci-Tech Division Board: Back Row – Eleanor Maclean, Roger Beckman; Middle Row – Anna Ren, Dale Riordan Christy Caldwell, Nevenka Zdravkova, Christine Whitaker, Pam Enrico, Ann Koopman, Nancy Wilmes, Cheryl Hansen, Charlene Stachnik; Seated – Sheila Rosenthal, Sarah Russell Gonzalez, Mary Frances Lembo, Susan Shepherd

SciTech News
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Bookmarks. Tagging. Folksonomies. The Web is being catalogued, and not just by special libraries! For example, it was recently reported that nearly 10 million people are organizing the Web at http://delicious.com*. StumbleUpon. com is not far behind with 6 million according to their Web site. These popular social bookmarking networks allow people to keep track of the Web sites they find useful and share those discoveries with others (sound familiar?). Yet as an information professional, you understand that a little social bookmarking can never compete with the features that personal bibliographic citation managers, such as EndNote, BibTex, and Refworks provide. Fortunately for both librarians and our patrons, there is a small but growing niche developing in the Web social software sphere: the social citation manager.

The following social citation tools are primarily designed with the science and technology researcher in mind. But these managers do not differ just in their ability to organize literature citations; rather they aim to help keep track of a user’s entire web space in one integrated tool. Some do this better than others. As a sci-tech librarian, you can help users determine which one might work for their specific needs. Try to leave the tagging up to them.

Bibsonomy
http://www.bibsonomy.org

Created by the University of Kassel in Germany, this citation network is distinctly researcher driven, with onscreen BibTeX code in place of human-readable metadata (not that tags such as pages = {31--51}, are hard to understand). It is programmer-compatible, nicely classing Web sites as “bookmarks” separate from articles, or “Publications”. Unfortunately, with 4 users making a tag “popular,” the site currently suffers from low-use; an ailment few sites recover from in the social network world. The existing traffic is decidedly more international. At the time of this review more non-English articles were posted here than on any of the other tools discussed.

Bibster
http://bibster.semanticweb.org

Bibster is a peer-to-peer network interface for bibliographic citations. This software is the bibliographic equivalent to Napster. But rather than illegal downloads of your favorite music, you're sharing the bibliographic data in the latest Nature. Many users might be underwhelmed given that mainstream journal citation information can be automatically retrieved from sci-tech literature databases. This network might work particularly well for users outside the traditional library systems, but only if the subject-fields diverse enough and the number of users were numerous enough to deliver the content.

Cite-U-Like
http://www.citeulike.org

Probably one of the first social citation managers on the Web, this Springer-sponsored tool is very popular in a multitude of science and technology disciplines. Users can not only store and share their favorite articles, but can also receive RSS feeds of over 11,000 journal’s table of contents from many publishers. To control spam, Cite-U-Like restricts article postings from non-supported publishers (including non-peer-reviewed articles.
and white papers) by filtering them from public view. Otherwise your entire library can be browsed by other users for discovery. Additional social features include article tagging, user profiles and blogs, and article reviews.

One of the best features is the Groups functionality. Users can create sub-networks to share and discuss knowledge, either publicly or privately, with messaging and forum tools. Additionally, a built-in library archives Group users' posting history. Citeulike's circa-2004 interface is beginning to look dated, but the quality of the system is always improving as more and more journals link directly to it. Best of all, users have a wide-range of bibliographic style options. Citations can be directly formatted into one of 16 different citation styles (including MLA and APA format), plus BibTex and RIS files, which directly import to EndNote or RefWorks, are made available for download.

Connotea
http://www.connotea.org
The "free online reference management for all researchers, clinicians and scientists" doesn't try to hide its sci-tech focus. Connotea was created by Nature Publishing Group as an answer to the popularity of delicious. Connotea works much like delicious by linking directly to the articles that users submit rather than creating a citation library which incorporates the various versions of the article available on the web (ex. a JSTOR link versus the publisher's link). Connotea was specifically designed with researchers in mind by seamlessly interfacing with major scientific journals and web sites for quick and complete citation saves. It also has the ability to export and import in RIS format, and is compatible with BibTex and other desktop reference management software. The user-base is not entirely researcher focused, however. A quick scan of the Connotea Group pages proved very spam heavy. However, from a library standpoint, this might be a nice way to share information and connect with your users.

2Collab
http://www.2collab.com
2Collab is probably the most eye-catching of the social citation managers shown here, and since it launched in 2007, one of the newest as well. The free Elsevier service has all the right features: bookmarking and reference management, group accounts for sharing resources, and a social networking component, but the overall experience is as clunky as the content is limited. First off, the site's membership is limited to registered users and it specifically attempts to encourage scientists, researchers, and librarians to collaborate and share information. Users accomplish this by creating profiles that include a semi-automated publication history generated from Scopus Author IDs, providing a validation of sorts. In the end, each cited article authored by a 2Collab user is hyperlinked to that author's user profile - this is theoretical, since I couldn't find another active user/author. The same goes for cited article records, but with a painful usability twist: some entries link to a citation record while others send you to, in the case of a non-subscriber, "a preview of Scopus" with grayed-out links that block use. Overall a particularly frustrating example of a social network that has not been fully realized.

Zotero
http://www.zotero.org
Since this article is all about citation mangers, it would be amiss not to include Zotero, an incredibly intuitive Firefox browser add-on that downloads citation data magically from web sites. The social aspects of Zotero unfortunately are limited, since it stores information directly to your hard drive, inaccessible from the web. But this will not be the case for long. This free tool, made possible by sponsors such as the Institute of Museum and Library Services and
The Andrew Mellon Foundation, is testing out the beta version of their Zotero Web version that allows users to sync their citation library from anywhere, including their iPhone, and then share collections with other Zotero users. The beta version is currently available for user testing at https://beta.zotero.org.

of discoverability and Web 2.0 openness. My institution is not one of these, yet, but some factors that may sway the hesitant include the ability to limit shared citations to within a particular institution or department through a web accessible portal. This control might extend RefWork's capacity to include not only citations, but any document that might be of interest to a particular group such as research notes, class syllabus, or reading list. EndNote Web, currently owned by Thompson Reuters, similarly offers a “share” feature, though it is a bit hidden. Add colleague email addresses by hitting the Organize tab and clicking on “Manage My Groups” then the “Share Group” button.


RefShare
http://www.refworks.com/refshare
EndNote Web
http://www.endnoteweb.com

The proprietary “online research management” tool, RefWorks, offers this collaboration add-on that allows RefWorks users to share and view others’ saved citations. RefShare was released in 2005, and more institutions are beginning to incorporate this feature into their subscriptions, as issues of privacy and intellectual freedom have subsided in favor of discoverability and Web 2.0 openness. My institution is not one of these, yet, but some factors that may sway the hesitant include the ability to limit shared citations to within a particular institution or department through a web accessible portal. This control might extend RefWork's capacity to include not only citations, but any document that might be of interest to a particular group such as research notes, class syllabus, or reading list. EndNote Web, currently owned by Thompson Reuters, similarly offers a “share” feature, though it is a bit hidden. Add colleague email addresses by hitting the Organize tab and clicking on “Manage My Groups” then the “Share Group” button.

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The Arabian Journal of Geosciences is the official journal of the Saudi Society for Geosciences and publishes peer-reviewed original and review articles on the entire range of earth science themes. The articles focus on, but are not limited to those that have regional significance to the Middle East and northern Africa. Key topics include geology, hydrogeology, earth system science, petroleum sciences, geophysics, seismology and crustal structures, tectonics, sedimentology, paleontology, metamorphic and igneous petrology, natural hazards, environmental sciences and sustainable development, geoarchaeology, geomorphology, paleo-environment studies, oceanography, atmospheric sciences, GIS and remote sensing, geodesy, mineralogy, volcanology, geochemistry, and metallogenesis.


The Canadian Air Force Journal is the official publication of the Chief of the Air Staff and is a forum for discussing concepts, issues and ideas that are both crucial and central to aerospace power. The journal is dedicated to disseminating the ideas and opinions of not only Air Force personnel, but also those civilians who have an interest in issues of aerospace power. Articles cover the scope of Air Force doctrine, training, leadership, lessons learned, and Air Force operations: past, present or future. The Journal serves as a vehicle for the continuing education and professional development of all ranks and personnel in the Air Force, as well as members from other environments, employees of government agencies, and academia concerned with Air Force affairs.


Carbon Capture Journal covers developments in industrial scale carbon capture and geological storage technology, with news about the major projects and developments in government policy. Articles in the current issue include “Shell Going Underground with Greenhouse Gases,” “Carbon Capture Cannot Be Rushed,” “Norway Launches Major CO2 Capture Research Program,” “CO2 Injection Begins in DOE New Mexico Project,” and “Solvent Degradation in CO2 Capture Process from Power Plant Flue Gas.” The journal is produced by the team behind Digital Energy Journal, one of the world’s leading magazines and news services for information technology in the oil and gas industry.


CSD is an international, multidisciplinary journal focused on scientific advances and discovery through computational science in physics, chemistry, biology and applied science. The journal publishes original, peer-reviewed research that includes details of scientific advances and discoveries made, numerical algorithms used, and verification and validation of codes performed. Articles may also include specific details of the enabling technologies used—for example, in data management, networking and visualization—that made the scientific advances possible and that would not be covered in other publications with a different focus. The journal therefore offers a unique opportunity for researchers to publish all the important components of their enterprise, together with their scientific results. These guidelines provide an important measure of the quality of the scientific results presented, the essential information that will allow other groups to reproduce these results, and a prescription that will allow other groups to successfully perform the scientific workflow that enabled the scientific advances.


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This official Journal of the European Scientific Association for Material Forming (ESAFORM) (www.esaform.org) establishes a platform of communication between engineers and scientists, covering all forming processes including sheet forming, bulk forming, powder forming, forming in melt or near-melt conditions (casting, injection, extrusion, film blowing), machining and cutting technologies, non-traditional processes such as abrasive jet, laser or ultrasonic abrasion, rapid prototyping and rapid tooling, microforming, hydroforming, thermoforming, and incremental forming. Other areas covered include tools design, manufacturing and control; process chains; virtual manufacturing; and quality assurance. Materials include metals, ceramics, polymers, fiber reinforced materials, composites, glass, wood, materials in food processing, biomaterials, nanomaterials, and shape memory alloys. Methods covered are micro-macro modelling, thermomechanical modelling, numerical simulation including new and advanced numerical strategies, experimental analysis, inverse identification, optimization, designing and monitoring of the processes and metal forming machines, wear and friction, mechanical behavior and formability.


Social robotics is the study of robots that are able to interact and communicate between themselves, with humans, and with the environment, within the social and cultural structure attached to its role. The journal covers a broad spectrum of topics related to the latest technologies, new research results and developments in the area of social robotics on all levels, from developments in core enabling technologies to system integration, aesthetic design, applications and social implications. The journal aims to provide an overview of the current state of the social robotics scene, how the field and related technologies are set to evolve in the future, and their impact on society at large. It will also provide researchers in diverse fields a consolidated volume with the latest developments and act as an international forum for all issues within the editorial focus. Topics of interest include affective and cognitive sciences for socially interactive robots; context awareness, expectation and intention understanding; design philosophies and socially appealing design methodologies; biomechatronics, neuro-robotics, and biomedical robotics; learning, adaptation and evolution of intelligence; interaction and collaboration between robots, humans and environments; multimodal sensor fusion and communication; robot ethics in human society; interactive robotic arts; social acceptance and impact in the society; compliance, safety and compatibility in the design of social robots living with humans; models of human and animal social behavior as applied to robots; and applications in education, entertainment, gaming, and healthcare.


A new publication of SmartPhone.com, articles from the premier issue of iPhone Life include “Talk IT into Supporting Your iPhone,” “Mobile Medical Apps,” “10 Apps We’d Love To See,” “MobileMe,” “How to Rip Music CDs,” “The Perfect Portable Movie Machine,” “Day in the Life of an iPhone Power User,” “A Rabbi’s Mobile Assistant,” and “Best Accessories.”


JRSE is an interdisciplinary, peer-reviewed journal covering all areas of renewable and sustainable energy-related fields that apply to the physical science and engineering communities. As an electronic only web-based journal with rapid publication time, JRSE is responsive to the many new developments expected in this field. Topics covered include bioenergy – bioreactions and bioengineering; geothermal energy – geysers, heat pumps, and novel devices; marine and hydroelectric energy – waves, tides, and dams; nuclear energy – fission and fusion; solar energy...
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This journal is a vehicle for research in hybrid metaheuristics (including evolutionary hybrids) for optimization, control and design in continuous and discrete optimization domains. It seeks to dissolve the barriers separating metaheuristics, exact and approximation algorithms research and to bring forth a renewed impetus towards the investigation and understanding of promising new hybrid algorithmic technologies. **Memetic Computing** aspires to serve as a focal publication where the latest results in natural computation, artificial intelligence, machine learning, operational research and natural sciences (e.g., cognitive, animal and insect behavior) are fused together in novel ways. Specific topics include hybrid (parallel) metaheuristics such as tabu search, path relinking, scatter search, grasp methods, iterated local search, simulated annealing, variable neighborhood search, evolutionary algorithms, learning classifier systems, memetic algorithms, and cultural algorithms; approximate and exact algorithms for combinatorial and continuous optimisation; ant colony computing; swarm intelligence; evolutionary dynamics; artificial cultures in multi-agent systems, webbots and robots; constraint optimisation; machine learning and data mining; and artificial immune systems.


*Water Quality, Exposure and Health* is a multidisciplinary journal that focuses on the global human health consequences of exposure to water pollution in natural and engineered environments. The subject areas and scientific fields included in the Journal are engineering; biogeochemical sciences; health sciences; exposure analysis and epidemiology; social sciences and public policy; mathematical, numerical and statistical methods; and experimental, data collection and data analysis methods. Research areas include health risk analysis of water pollution; methods of quantification and analysis of risk under uncertainty; aquatic biogeochemical processes in natural and engineered systems and health effects; statistical and stochastic analysis of water pollution, exposure and health data; endocrine disruptors, pathogens, microbes, chemicals and manufactured materials in the water phase and exposure health effects; biomarker exposure analysis and health outcome; exposure-dose reconstruction methods and applications; water pollution exposure monitoring and epidemiology; and systems management topics in water pollution, exposure and health.
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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.

GEOGRAPHY, HYDROLOGY, ENVIRONMENT

G70 2008-008412 978-1-4200-7068-2
Creating spatial information infrastructures; toward the spatial Semantic Web.
Title main entry. Ed. by Peter van Oosterom and Sisi Zlatanova.
CRC / Taylor & Francis, ©2008 185 p. $129.95
Semantically meaningful models for the spatial information infrastructure (SII) must be developed in order to foster interoperability. This work presents solutions to problems preventing the launch of an effective SII. Leading experts in SII development present a complete overview of SII, including user and application needs, theoretical and technological foundations, and examples of realized working SII. The book offers practical solutions to both technical and nontechnical obstacles, discussing legal and organizational issues, copyrights, and pricing policies. About half of the chapters originated at a June 2007 seminar held in London. The other half are invited contributions. The book is for those who are involved in realizing parts of the current spatial information infrastructure either in practice or research. Oosterom and Zlatanova are affiliated with the GIS Technology Section, OTB Research Institute at Delft University of Technology, The Netherlands.

G109 978-1-59693-103-9
Ubiquitous positioning.
Mannings, Robin. (Artech House GNSS library)
Artech House, ©2008 203 p. $69.00
Mannings (Lancaster U., UK) explores the field of ubiquitous positioning, which places people and objects in a digital context for use in related networks and technologies. By coining the term “whereness,” the author is able to provide the fundamentals for a new and comprehensive discipline that can be used to develop innovations in radio positioning, mapping and “geo-tagging.”

This book offers plenty of new ideas for engineers in the field of mobile communications.

GE170 2007-034392 978-0-8493-7423-4
GIS for environmental decision-making; proceedings.
CRC Press, ©2008 259 p. $99.95
This book takes an interdisciplinary look at the use of GIS for environmental decision making, emphasizing the importance of matters related to data, analysis, and modeling tools, as well as stakeholder participation. The first section stresses the ability to integrate data from different sources as a defining characteristic of GIS. The second section gives examples on the use of GIS for suitability mapping and strategic planning exercises through illustrative examples. The last section of the book examines the use of GIS-based techniques to facilitate public participation in the decision-making process, and overviews developments in the integration of GIS, modeling, and 3d landscape visualization techniques. Material originated at an April 2004 conference held at the University of East Anglia, UK. The original conference papers have been reviewed and revised for publication, and two other invited contributions are included. Appleton is affiliated with the Zuckerman Institute for Connective Environmental Research at the University of East Anglia, UK. Lovett teaches environmental sciences at the University of East Anglia.

HC79 978-1-84542-586-9
The handbook of technology foresight; concepts and practice.
Title main entry. Ed. by Luke Georghiou et al. (Prime Series on research and innovation policy)
Edward Elgar Publishing, ©2008 428 p. $220.00
This volume takes a number of different approaches towards explaining the subject of technology foresight, which involves
predicting, understanding, and reacting to technological change. The editors (all of the Manchester Institute of Innovation Research, U. of Manchester, UK) first present chapters that seek to define the field, explore its distinguishing characteristics as compared to other types of future studies, and provide an overview of the field's methods. They then present ten papers exploring technology foresight experiences in the United Kingdom, France, Germany, the United States, Japan, Nordic countries, smaller countries, industrializing Asia, Latin America, and Central and Eastern Europe. Finally, they present four chapters on policy transfer and learning, scoping and planning foresight, evaluation and impact of foresight, and emerging practices.

**PRODUCTION, INDUSTRY, COMMERCE**

**Technology due diligence; best practices for chief information officers, venture capitalists and technology vendors.**
Andriole, Stephen J.
*Information Science Reference*, ©2009 402 p. $165.00

This book develops a due diligence framework for anyone who must select among competing technologies or invest in technologies intended to help their business achieve results, including executives and managers, venture capitalists, and technology vendors, as well as managers who wrestle with day-to-day technology acquisition challenges. The book offers actual case studies that incorporate due diligence methodology. Chapters are in sections on due diligence strategies and tactics, due diligence case studies, and tools and techniques. Case studies examine areas such as venture investing in wireless communications technology, enterprise investing in remote access technology, enterprise investing in RFID, and investing in knowledge-based user-computer interaction. About 100 pages of appendices offer analysis of trends in pervasive computing, intelligent systems technology, and business technology integration. Andriole is affiliated with Villanova University.

**Energy, risk, & competitive advantage; the information imperative.**
Randall, Scott.
*PennWell Books*, ©2008 284 p. $85.00

Randall, an expert in the field of operational risk management, has written this book focusing on the need for corporate management and executives to obtain accurate and meaningful market information in order to gain a competitive edge. The author concentrates on the development of an effective set of informational "tools," and how developing a proper business model for gathering and interpreting information is the key to success. Written for anyone responsible for risk assessment, market strategies and fiscal integrity, this book also covers the need for security while using external data resources.

**Telecommunications research trends.**
Title main entry. Ed. by Hans F. Ulrich and Ernst P. Lehmann.
*Nova Science Publishers*, ©2008 260 p. $129.00

Contributors from the US, Europe, and Asia present the latest research in telecommunications, with emphasis on a global perspective. Some specific areas covered are European Union mobile telecommunications in the context of further enlargement, the privatization of Intelsat, the privatization of Turk Telekom, and influencing infrastructure performance through cross-border networks of regulatory agencies. Other areas explored include strategic bundling in telecommunications and its antitrust implications for intermodal competition, new challenges in Raman amplification for fiber communication systems, and fiber Bragg gratings in high birefringence optical fibers.

**Geospatial information technology for emergency response.**
Title main entry. Ed. by Sisi Zlatanova and Jonathan L. (International Society for Photogrammetry and Remote Sensing book series; v.6)
*Taylor & Francis*, ©2008 381 p. $189.95

The result of a collaborative effort involving 33 researchers located in 10 countries, this book shares technological advances that allow wider, faster, and more effective use of geospatial information in emergency response situations. The first section describes practice and legislation, focusing on the use of geospatial information in recent disaster events, as well as resulting legislative attempts to share and access data. The second part focuses on data collection and data products, and the third part describes data management and routing in 3D. The fourth section of the book focuses on emerging technology, including positioning, virtual reality, and simulation models, and the fifth section looks at the integration of heterogeneous data. The final section describes how geospatial information technology can be used in different disaster scenarios, illustrated with case studies.
of transport accidents, floods, and fires. The book is aimed at researchers, practitioners, and students who work in disciplines related to geospatial information technology for emergency response. Zlatanova teaches GIS technology at Delft University of Technology, The Netherlands. Li teaches in the Department of Geography at the University of Waterloo, Canada.

HV8079 2008-922923 978-0-7695-3171-7
Systematic approaches to digital forensic engineering; proceedings.
International Workshop on Systematic Approaches to Digital Forensic Engineering (3d: 2008: Berkeley, CA)
Computer Society Press, ©2008 157 p. $176.00 (pa)
Papers from a May 2008 workshop, 15 in all, report on recent work in technical digital forensics research, digital forensics engineering theory, and related legal issues. Some specific areas examined include a skin tone detection algorithm for contraband image analysis, combining physical and digital evidence in vehicle environments, finding evidence in tamper-evident workstation logs, protecting digital legal professional privilege, and implications of attorney experiences with digital forensics and electronic evidence in the US. Other subjects include network data and state seizures in the US, multidimensional correlation of software source code, and node-based probing and monitoring to investigate the use of peer-to-peer technologies for distribution of contraband material. There is no subject index.

LB1028 2008-001871 978-1-59904-863-5
Handbook of research on computer mediated communication; 2v.
Title main entry. Ed. by Sigrid Kelsey & Kirk St. Amant.
Information Science Reference, ©2008 1020 p. $495.00
This two-volume research handbook on computer-mediated communication can’t pretend to be comprehensive, admit editors Kelsey (Louisiana State U.) and St. Amant (East Carolina U.), but they believe its 69 chapters are far-reaching enough to establish a foundation of knowledge across a wide range of readers, including academics, researchers, industry representatives, educators, and lay persons. The chapters are organized into sections discussing how educational and training practices have change and might continue to change in response to advances in online media, how the plasticity and open access nature of cyberspace is influencing how one assesses the credibility of information and thinks about the identity of oneself and others, how computer-mediated communications has influenced the way individuals exchange ideas and opinions as individuals and within communities, the impact of computer-mediated communications on cultural and linguistic issues, and issues specific to specific tools and technologies related to computer-mediated communication.

P96 2007-043952 978-1-59904-970-0
Handbook of research on digital information technologies; innovations, methods, and ethical issues.
Title main entry. Ed. by Thomas Hansson.
Information Science Reference, ©2008 544 p. $265.00
In this resource, Hansson (pedagogy, U. of Southern Denmark and Blekinge Institute of Technology, Sweden) offers 33 chapters on ethical issues, methods, theories, and challenges related to the use of electronic resources in libraries, focusing on strategic planning, operational guidelines, and management practices, from selection to cataloging, web presentation, and user support. Topics include digital storytelling, e-learning, language labs, multimedia, web-course designs, and science teaching. The book is meant for use in academic libraries in the US and abroad and by undergraduate and graduate students. Contributors work in education, science, technology, and other fields around the world.

Q179 2007-049561 978-1-59904-986-1
Online science learning; best practices and technologies.
Title main entry. Ed. by Kevin F. Downing and Jennifer K. Holtz.
Information Science Publishing, ©2008 353 p. $99.95
One of the most exciting aspects of the Internet is the possibility of educating students of all ages who might not normally have access to qualified teachers. Downing and Holtz, both experts in online science teaching at DePaul University, give an overview of this new field from its inception. They note that many people now are setting up online classes without taking the nature of the technology into account. Holtz and Downing evaluate the current programs available and then give detailed advice for setting up classes in the sciences. Early introduction to science is particularly fascinating. Young children with a passion for dinosaurs can take a virtual paleontology tour and ask questions of a real

http://jdc.jefferson.edu/scitechnews/vols62/iss4/15
scientist. The possibilities are almost endless. For more advanced students, the authors explore the ways in which they can monitor and manipulate an experiment taking place miles away. They even propose tangible learning systems where a glove can be used that will relay movements either to a 3-D screen or a robotic arm. Anyone setting up or revising a distance learning science class will find useful suggestions in this book.

Q223 2007-042978 978-0-415-38617-3
**Handbook of public communication of science and technology.**
Title main entry. Ed. by Massimiano Bucchi and Brian Trench.
*Routledge*, ©2008 263 p. $190.00
Seventeen papers presented by Bucchi (sociology of science, U. of Trento, Italy) and Trench (communications, Dublin City U., Ireland) provide a survey of the current state of the field of science and technology communication. The papers discuss popular science books, science journalism, science museums and science centers, cinematic science, theories of public communication of science, health campaign research, the politics and ethics of metaphorical framing in genetics and genomics, survey research and the public understanding of science, scientists as public experts, public relations in science, environmental groups and other nongovernmental organizations as communicators of science, public participation and dialogue, science communication and the Internet, risk and public science communication, public communication of science and technology in developing countries, communicating the social sciences, and evaluating public communication of science and technology.

Q327 2007-037396 978-1-59904-807-9
**Pattern recognition technologies and applications; recent advances.**
Title main entry. Ed. by Brijesh Verma and Michael Blumenstein.
*Information Science Reference*, ©2008 435 p. $180.00
For academics, researchers, practitioners, and students, this volume details pattern-recognition techniques and applications. Verma (computing sciences, Central Queensland U., Australia) and Blumenstein (information and communication technology, Griffith U., Gold Coast Campus, Australia) compile 17 chapters that describe theoretical and applied research in topics such as handwriting and speech recognition, signature verification, gender classification, occlusion sequence mining, and vector machines. Others discuss human detection techniques, brain-inspired recognition architecture, and clustering techniques. Chapter authors work in technology, computer engineering and science, electronic engineering, and other fields, in various parts of the world.

Q334 978-981-277-983-0
**Foundations of decision-making agents; logic, probability and modality.**
Das, Subrata.
*World Scientific*, ©2008 366 p. $88.00
Intelligent agent is an artificial intelligence system, explains Das, and an epistemic state is an actual or possible cognitive state that drives human behavior at any given moment, and must be simulated by an intelligent agent for it to simulate human behavior. He describes three

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broad and fundamental approaches—logical, probabilistic, and modal—to representing and reasoning in the context of decision making. His study could be used as a textbook in a graduate or undergraduate course on artificial intelligence, or as a reference for researchers.

Q337 2007-044556 978-0-470-06031-5
Cooperative control of distributed multi-agent systems.
Title main entry. Ed. by Jeff S. Shamma.
John Wiley & Sons, ©2007 435 p. $180.00
The results of a collaborative project amongst four universities (UCLA, MIT, Cornell and Caltech), this collection of 17 papers describes the dimensions of cooperative control in terms of distributed control and computation, adversarial interactions, uncertain evolution and complexity management. Topics include swarms in micro-filter networks, connectivity and convergence in formulations, stability through move suppression, distributed predictive control, task assignment for mobile agents, the value of information in dynamic multiple-vehicle problems, optimal agent cooperation with local information, multi-agent cooperation through "egocentric" modeling, mixed linear programming, linear programming in multi-vehicle path planning, characterization of games with different information patterns, the modal estimation of jump linear systems, conditionally-linear filtering in jump-linear systems, cohesion of languages in grammar networks, complexity management in the state estimation of multi-agent systems and abstraction-based command and control with patch models. The primary application is to military vehicles.

Q342 2007-040640 978-1-59904-498-9
Multi-objective optimization in computational intelligence; theory and practice.
Title main entry. Ed. by Lam Thu Bui and Ricardo Sameer Alam.
Information Science Reference, ©2008 475 p. $132.00
Multi-objective optimization (MO) is an emerging field in computational intelligence research. This book provides scholars, academics, and practitioners with a collection of research on MO optimization techniques and their uses in the provision of electronic resources in libraries, with emphasis on strategic planning, operational guidelines, and practices. The book primarily focuses on management practices of the life-cycle of commercially acquired electronic resources. The first part of the book deals with issues of applicability of various techniques, such as swarm optimization, differential evolution, and artificial immune systems. The second part of the book concentrates on various applications, such as wireless sensor network design, DNA sequence design, and military applications. The book is for professionals and advanced students in library science, especially those working in academic libraries. The editors are affiliated with the University of New South Wales, Australia.

QA76.54 2007-045063 978-1-84821-013-4
Modeling and verification of real-time systems; formalisms and software tools.
Title main entry. Ed. by Stephan Merz and Nicolas Navet.
ISTE/Wiley, ©2008 393 p. $195.00
Solidsly rooted in the real world, including its constant need for the highest possible reliability at the fastest possible speed, these systems require a thorough understanding of a range of models and techniques. Researchers Merz and Navet and their contributors therefore offer a variety of tools, starting with analysis methods and verification of time Petri nets, verification of reactive systems through verification and performance testing, model checking (including of timed automata), specification and analysis of asynchronous systems using technology, synchronous program verification, synchronous functional programming, verification with real-time probabilistic systems, verification of probabilistic systems methods and tools, modeling and verification of real-time systems, and architecture description languages, including a case study. This is a professional reference but would also serve as a course text.

QA76.58 2007-038842 978-1-58488-808-6
Parallel iterative algorithms; from sequential to grid computing.
Bah, Jacques Mochine et al. (Chapman & Hall/CRC numerical analysis and scientific computing series)
Chapman & Hall/CRC, ©2008 217 p. $89.95
Focusing on grid computing and asynchronism, this book explores the theoretical and practical aspects of parallel numerical algorithms, and illustrates how to apply these algorithms to solve linear and nonlinear numerical problems in parallel environments, including local, distinct, homogeneous, and heterogeneous clusters. Each chapter contains a theoretical discussion, an algorithmic section that fully details implementation examples and specific algorithms, and an evaluation of the advantages and drawbacks of the algorithms. Chapter exercises and an appendix of mathematical results are also
included. The book is written to be accessible to non-specialists as well as researchers.

QA76.592 2007-019887 978-0-470-17927-7
Intelligent wearable interfaces.
Xu, Yangsheng et al.
John Wiley & Sons, ©2008 192 p. $100.00
Xu, Wen Jung Li (both: mechanical and automation engineering, Chinese U. of Hong Kong) and Ka Keung Lee (mechanical engineering, Hong Kong Polytechnic U.) report on research at Chinese University of Hong Kong into developing interfaces with a certain level of intelligence that humans can wear to enhance their capabilities in communications, actions, monitoring, and control. Writing for other designers and engineers, they describe such examples as automatic language translation, a fingertip interface with a computers, and a mobile airbag system.

QA76.75 2008-008469 978-1-59904-968-7
Engineering service oriented systems; a model driven approach.
Karakostas, Bill and Yannis Zorgios.
IGI Publishing, ©2008 399 p. $99.95
As intelligent systems expand and continue to relate to each other, they adapt, evolve and becoming increasingly complex. Karakostas (informatics, City U. London) and practitioner Zorgios write for those willing to make the relatively small investment necessary for service-oriented architecture in their information technology systems, linking systems theory and model-driven software engineering. With both the needs of business and technology in mind, they explain the “service” concept and service-oriented architecture, service dependencies and business architecture, standards for web services and service coordination, model-driven service engineering, ontology for model-driven software engineering and engineering based on the modeling notation IDEF, service deployment execution and management, and platforms. They include a case study involving accounts receivable and accounts payable, a number of examples (including screen shots) and references for each chapter, making this work well as a classroom text as well as a professional reference.

QA76.758 2008-008468 978-1-59904-699-0
Designing software-intensive systems; methods and principles.
Title main entry. Ed. by Pierre F. Tiako.
Information Science Reference, ©2009 559 p. $180.00
This work addresses the complex issues associated with software engineering environment capabilities for designing and maintaining real-time embedded software systems. It provides theoretical foundations, principles, methods, frameworks, and the latest research findings in the field. Chapters are in sections on process support specification and modeling techniques, requirements and traceability, software architectures and architectural alternatives, evaluation and optimization, and best practices and integrations. Contributors are affiliated with academic departments of computer and information science and engineering around the world. The book is for students and researchers in computer science, software engineering, manufacturing engineering, business administration, Web technology, and information systems. Tiako directs the Center for Information Technology Research at Langston University.

QA76.76 2008-008293 978-0-8493-9383-9
Manage software testing.
Farrell-Vinay, Peter.
Auerbach Publications, ©2008 573 p. $99.95
Written for testers who want to become managers, this book examines the why, how, when, and what of software testing and recommends strategies for planning tests, tracking bug reports, documenting specifications, recruiting the test team, and outsourcing. The second half of the book delves into the principles of functional and structural test techniques, static analysis, the unit test process, system testing, the usability test process, and metrics. Wayward attitudes and experiences of unnamed companies begin each chapter. The appendices contain 11 examples, 20 checklists, and 15 tools.

QA76.76 2008-008470 978-1-59904-492-7
Software engineering for modern Web applications; methodologies and technologies.
Title main entry. Ed. by Daniel M. Brandon.
Information Science Reference, ©2008 380 p. $180.00
The 15 articles collected here by Brandon (Christian Brothers U., Tennessee) review current topics for engineers creating software for the web. The text may be appropriate as a supplement to textbooks, but most content is for experienced engineers. Topics include: model-centric architecting process; architecture, specification, and design of service-oriented systems; using patterns for engineering high-quality web applications; applying agility to database design, testing methods, outsourcing issues in web development, engineering wireless mobile applications, project management,
and component-based deployment. Resources are included in the final chapters.

QA76.88 2007-045065 978-1-84821-009-7
**Nanocomputers and swarm intelligence.**
Waldner, Jean-Baptiste.
*ISTE/Wiley*, ©2008 267 p. $135.00
They are ever smaller and ever faster, but fairly soon integrated circuits will have reached their physical unit. What will take their place? Here consultant Waldner surveys the next generation, including quantum computing, nanotubes in molecular transistors and DNA computing. He describes new methods of production; the rise and (anticipated) decline of the silicon economy; the rebuilding of high tech atom by atom through scanning tunneling microscopes, nanomachines and other devices; the revolutionary new computers, including distributed platforms; information systems; and business mutations and digital opportunities, including such elements as highly diffused information systems, web applications and a mutation of what information technology is and does. The result is designed for professional reference in the engineering community but is accessible enough to serve a wider readership, including managers, executives and the informed general public.

QA76.9 2008-008466 978-1-59904-657-0
**Data mining applications for empowering knowledge societies.**
Title main entry. Ed. by Hakikur Rahman.
*Information Science Reference*, ©2009 332 p. $180.00
Data mining applications are becoming a more common part of corporate intelligence systems, and this textbook shows how these techniques are used to preserve historical data as well as predict future performance and financial trends. Rahman (Sustainable Development Networking Foundation, Bangladesh) presents an overview of all current application for data mining, including nanotechnology, knowledge societies, contemporary CRM, image mining, satellite technology and data warehousing. Designed for anyone who uses historical data to predict future outcomes in business, this book also focuses on the interface between commerce and electronic resources in libraries.

QA76.9 2007-044568 978-0-471-79959-7
**The handbook of information and computer ethics.**
Title main entry. Ed. by Kenneth Einar Himma and Herman T. Tavani.
*John Wiley & Sons*, ©2008 671 p. $125.00
With the maturation of the field of information and computer ethics there is a pressure to fragment into subfields or for subfields to be subsumed into previously existing fields, but Himma (philosophy, Seattle Pacific U.) and Tavani (philosophy, Rivier College) present this work in an effort to keep the field whole. Their goal in presenting the volume's 27 chapters is to identify foundational issues, provide theoretical perspectives, and include analyses of a range of applied and practical issues. The papers are organized into sections devoted to foundational issues and methodological frameworks; theoretical issues affecting property, privacy, anonymity, and security; professional issues and the information-related professions; responsibility issues and risk assessment; regulatory issues and challenges; and access and equity issues.

QA76.9 978-1-59693-289-0
**Homeland security technology challenges; from sensing and encrypting to mining and modeling.**
Title main entry. Ed. by Giorgio Franceschetti and Marina Grossi. (Artech House intelligence and information operations series)
*Artech House*, ©2008 294 p. $89.00
Franceschetti (U. Federico II, Italy) and Grossi (chief executive officer, SELEX Sistemi Integrati, a Finmeccanica company) present nine papers exploring what they see as key technological facets of homeland security practice: data acquisition and processing; storage, handling, and mining of sensed data; and design, model, scaling, and simulation of the integrated system designed to handle crisis occurrences. Following an introductory essay, chapters specifically address embedded wireless sensor networks; visual detection and classification of humans, their pose, and their motion; cyber security basic defenses and attack trends; mining databases and data streams; private information retrieval: single-database techniques and applications; tapping vehicle sensors for homeland security; modeling and analysis of wireless networked systems; and large systems modeling and simulation.
et al.: Full Issue: vol. 62, no. 4

Information assurance architecture.
Willett, Keith D.
CRC Press, ©2008 588 p. $79.95
This book provides the security industry with a formal information assurance architecture that complements enterprise architecture, systems engineering, and enterprise life-cycle management. The framework provided here offers a reference model for the consideration of security in many contexts and from many perspectives. The book is primarily for security engineers, security architects, security management, and other security personnel with an interest in identifying and addressing business risk. It is also useful for enterprise architects and systems architects who desire to integrate information assurance in their solutions. Business managers, project managers, and program managers will find the book useful for understanding information assurance in the context of the enterprise, including concepts of business need, business fit, and business justification for information assurance. Readers should have at least an intermediate knowledge of information technology and information assurance. Author information is not given.

Mathematical models of information and stochastic systems.
Kornreich, Phillip.
CRC / Taylor & Francis, ©2008 364 p. $99.95
Predicting the future from the past has a long history widely diverse in its applications, and Kornreich gives modern-day soothsayers a solid background in understanding the information they need to develop models that foretell the future of a system. He begins by ably explaining basic principles of probability theory and how to apply them to predict the behavior of those systems based on what is known about them. He covers events and their density, probabilities (joint, conditional and total), random variables and their functions, conditional distribution functions and the sum of two random variables, average values and moments as well as correlations of random variables and of their functions, randomness and average randomness, random systems (or at least most of them), information (such as information in genes and transmissions), random processes, spectral densities, data analysis and chaotic systems, which sounds like an oxymoron but certainly is not.

The 3-D global spatial data model; foundation of the spatial data infrastructure.
Burkholder, Earl F.
CRC / Taylor & Francis, ©2008 364 p. $119.95
The aim of this text is to define and describe a global spatial data model that is easy to use because it is based upon rules of solid geometry, is standard between disciplines and can be used all over the world, accommodates modern measurement and digital data storage technologies, supports both analog map plots and computer visualization of digital data, preserves geometrical integrity and does not distort physical measurements, combines horizontal and vertical data into a single three-dimensional database, facilitates rigorous error propagation and standard deviation computations, and provides (and defines assumptions associated with) various choices with respect to spatial data accuracy. Results are presented first and justification for the results are presented next. This is followed by a presentation of the fundamental mathematical concepts and then relevant concepts from surveying, geodesy, and cartography.

Astronomy

Numerical modeling of space plasma flows; proceedings.
Astronomical Soc./Pacific, ©2008 334 p. $77.00
These proceedings of the June 2007 conference include a range of subjects, including kinetic and hybrid simulations, numerical methods, algorithms and frameworks. General topics include turbulence and cosmic ray transport (including the implications of the Hall Effect for turbulent molecular clouds), astrophysical flows (including fragmentation and turbulence in the interstellar medium), space plasma flows (including numerical simulations of solar wind disturbances by coupled models), kinetic and hybrid simulations (including an implicit particle-in-cell model) and a range of papers on data handling, visualization and computation. This will be of interest to specialists in applied mathematics, astrophysics, space physics and computer science. The editors include an author index.
PHYSICS

QC174 2008-001249 978-0-521-89783-9
Quantum mechanics for scientists and engineers.
Miller, David A.B.
Cambridge U. Press, ©2008 551 p. $85.00
Miller teaches electrical engineering and applied physics at Stanford, so he is aware of the pitfalls in learning quantum mechanics. This text is a lucid introduction to the subject, even for those who haven't studied linear algebra. He even gives the Greek alphabet in an appendix so the formulae can be read out loud without embarrassment. The book is designed for a two-term course. It begins with Schroedinger's equation and its implications. He continues with approximation methods, perturbation theory, quanta in crystalline materials, various matrices, harmonic oscillators and photons, and fermions. Each chapter closes with a review of terms used. Miller ends with possible used for quantum mechanics in computing, cryptography and even teleportation, although he warns that the last does not mean stepping into the transporter beam any time soon.

QC318 978-981-277-913-7
Non-equilibrium thermodynamics of heterogeneous systems.
Kjelstrup, Signe and Dick Bedeaux. (Series on advances in statistical mechanics; v.16)
World Scientific, ©2008 434 p. $88.00
Kjelstrup and Bedeaux (both Norwegian U. of Science and Technology) explain how to use non-equilibrium thermodynamics to describe the transport of heat, mass, charge, and chemical reactions through complex, heterogeneous media. Their textbook is designed for a graduate course for physicists, physical chemists, and chemical or mechanical engineers; it assumes a knowledge of basic thermodynamics.

CHEMISTRY

QD96 2007-026621 978-1-57444-650-0
Coherent vibrational dynamics.
Title main entry. Ed. by Sandro De Silvestri et al. (Practical spectroscopy series; v.36)
CRC / Taylor & Francis, ©2008 267 p. $139.95
De Silvestri (physics, Politecnico of Milan, Italy) explains fundamental methods and tools of vibrational spectroscopy and describes advanced developments in the field in this work for students and researchers. The book outlines principles and tools used in time-domain vibrational spectroscopy and provides a general introduction to the subject of coherent phonons. It describes methods for tunable ultrashort pulse generation from infrared to visible UV frequencies, and reviews coherent vibrational dynamics in small molecules in liquids and in carbon-based conjugated materials. It also explores phonon dynamics in semiconductors (bulk and heterostructures) and in quasi-one-dimensional systems. The book is for graduate students and researchers investigating materials in physics, chemistry, and biology. It can also serve as a starting point for those who want to pursue research in the field of ultrafast optics and spectroscopy.

QD281 978-1-4200-6819-1
Polymer science; a text book.
Ahluluwa, V.K. and Anuradha Mishra.
CRC / Taylor & Francis, ©2008 219 p. $69.95
This branch of chemistry applies to the manufacturing of plastics, elastomeric materials and fibers, biomedical products, defense and aerospace materials as well as to a significant amount of research, the result being a high demand for engineers and technicians. Here Ahluwalla (biomedical research, U. of Delhi) and Mishra (chemistry and polymer engineering, Institute of Engineering and Technology...
Kanpur U.) give undergraduates in chemical engineering or graduate students in chemistry a solid background in polymers, focusing on practical applications. They start by defining polymers and their classifications and behaviors, then describe the basics of chain growth polymerization, step growth polymerization and copolymerization. They describe the properties of polymers, including transitions and degradation, and cover a range of polymer characterization methods and results, common polymerization practices and processes, and commercially important polymers, including those that are synthetic, rubber, conducting, inorganic, and considered biopolymers. They include a very helpful glossary and illustrations.

QD381 2008-270050 978-0-521-81419-5
**Polymer dynamics and relaxation.**
Boyd, Richard H. and Grant D. Smith.
Cambridge U. Press, ©2007 255 p. $150.00
Boyd and Smith (both at the U. of Utah) have written an authoritative text describing the relaxation processes of polymers and the many methods used for their study that will be essential reading for researchers and graduate students of materials science, physics, and chemistry. The initial 5 chapters are devoted to methodology, with descriptions of mechanical and dielectric relaxation, NMR spectroscopy, dynamic neutron scattering, and molecular dynamics simulations of amorphous polymers. The three stages from primary transition region, secondary (subglass) relaxations, and the transition from melt to glass of amorphous polymers are described in separate chapters, with discussion of the molecular basis of the transition from melt to glass. The volume concludes with discussion of semi-crystalline polymers and miscible polymer blends, including the models for miscible blend dynamics. Two appendices describe the Rouse model and site models for localized relaxation.

BIOLOGY

QH313 2008-000782 978-1-4200-4343-3
**Forensic biology.**
Li, Richard.
CRC / Taylor & Francis, ©2008 430 p. $89.95
Designed for students but also useful for those on the job, this focuses on the science behind the forensic analysis of biological evidence and on serologic and DNA analysis. Li (forensics, Indiana U.-Purdue U. Indianapolis) starts by describing the basics behind forensic biology, then addresses sources of DNA evidence, crime scene investigation and laboratory analysis of biological evidence; essential serology, including concepts and techniques; forensic serology, including identification of blood, species identification, identification of semen and saliva, blood groups typing and protein profiling; basic DNA techniques, including a precise introduction and descriptions of extraction, quantification, amplification by polymerase chain reaction, electrophoresis and detection methods; forensic DNA profiling, including variable number tandem repeat profiling, autosomal STR profiling, Y chromosome profiling and gender typing, single nucleotide polymorphism profiling, and mitochondrial DNA profiling; and related forensic subjects such as DNA databases, the evaluation of the results, quality assurance and quality control.

QH324 2007-037128 978-981-270-704-8
**Computational systems bioinformatics; methods and biomedical applications.**
Zhou, Xiaobo and Stephen T.C. Wong.
World Scientific, ©2008 387 p. $65.00
Although no longer in its infancy, computational system biology remains a remarkably dynamic field of study with great potential as it quickly examines the structure and processes of biological systems at the molecular, cellular, tissue and organ levels. Zhou (Harvard Medical School) and Wong (Brigham and Women's Hospital) aim at keeping up with the quick pace of change in this field from the systems perspective. They focus on the high-throughput techniques used in computation system bioinformatics, namely gene expression microarray studies, describe how to combine DNA sequencing information and gene microarray information to study gene regulation, and review image informatics for molecular and cellular imaging, creating objective quantitative phenotypes. They include sections on principles of mathematics, statistics and data mining, on missing value estimation using KNN and Bayesian methods, conducting cross-platform comparisons, protein structure informatics, biomarker discover and related methods.

QP84 2007-026861 978-1-60021-876-7
**Progress in circadian rhythm research.**
Title main entry. Ed. by Anne-Laure Léglise.
Nova Biomedical Books, ©2008 254 p. $129.00
The formal study of the innate 24-hour biological cycles characteristic of most living organisms is briefly introduced as chronobiology. In 11 chapters, international scientists present new research and theories in this field of particular interest in relation to human health and...
cognitive performance. Contributors discuss recent research including the implications for therapy for cancer of the impact of hypnosis on biorhythms and immunity, implications for neuropsychiatric diseases of defects in physiological clock mechanisms and their resetting, and whether scales measuring “night owl” and “lark” circadian types are universally valid. The editor’s professional affiliation is not given.

QP303 2008-020965 978-0-7360-6679-2
Neuromechanics of human movement, 4th ed.
Enoka, Roger M.
Human Kinetics Pub., ©2008 549 p. $78.00
This text provides a scientific foundation for the study of human movement by exploring how the nervous system controls the actions of muscles in relation to biomechanical principles. Part I focuses on Newton's laws of motion and their application to the study of human movement. Part II introduces essential concepts from neurophysiology needed to understand how movement is produced by the nervous system and muscles. Part III focuses on the acute and chronic changes that can occur in the motor system in response to various interventions. Content is visually reinforced with about 750 b&w illustrations in a reader-friendly layout. A glossary and reference appendices are included. This fourth edition contains new material on electromyography, expanded discussion of neuromuscular system adaptations to rehabilitation, and additional examples that underscore recent research developments. Enoka is affiliated with the University of Colorado-Boulder.

QP519 2007-046854 978-0-470-22945-3
Biomedical vibrational spectroscopy.
Title main entry. Ed. by Peter Lasch and Janina Kneipp.
John Wiley & Sons, ©2008 385 p. $225.00
With the biomedical field increasingly interested in vibrational spectroscopy to probe the structure and dynamics of molecules in gases, liquids, interfaces, and mineralized tissues (e.g., teeth), this volume focuses on applications most relevant to diagnosing health conditions and conducting biochemical studies. In introducing 16 chapters by international scientists in the field, Lasch (Robert Koch Institute, Berlin, Germany) and Kneipp (Federal Institute for Materials Research and Testing, Berlin, Germany/photomedicine; Harvard Medical School, Boston) explain that methods such as infrared spectroscopy and Raman spectroscopy provide objective information on the molecular structure and composition of samples under investigation - in an automatic, efficient, reagent-free, and cost-effective manner. Contributors provide details on specific methods. Figures include color chemical mapping images of a single cell of infectious agents.

MEDICINE (GENERAL & PUBLIC ASPECTS)

R119 2007-050727 978-1-4200-6046-1
Mobile telemedicine; a computing and networking perspective.
Title main entry. Ed. by Yang Xiao and Hui Chen.
CRC / Taylor & Francis, ©2008 420 p. $79.95
Today doctors can consult in real time across continents, and patients in remote areas have access to the latest diagnostic technology. Xiao (computer science, University of Alabama) and Chen (mathematics and computer science, Virginia State University) have put together articles that address various aspects of telemedicine. They discuss the use of long distance monitoring of patients in general, heart patients and people with diabetes. These articles deal with practical application. Another section is on the problem of maintaining patient confidentiality. Four articles cover the technical challenge of maintaining the network. The final section looks ahead to possible future medical networks and the challenges in making them a reality. The writing refreshingly clear with terms explained in plain English so that both medical professionals and IT professionals can access the information.

R857 2007-042613 978-0-8493-7973-4
Biomaterials fabrication and processing handbook.
Title main entry. Ed. by Paul K. Chu and Xuanyong Liu.
CRC / Taylor & Francis, ©2008 701 p. $149.95
Biomaterials used in the biomedical industry to repair or replace injured/nonfunctional tissues are a growth industry. Chu (City U. of Hong Kong) and Liu (Hunan U.; Shanghai Institute of Ceramics, Chinese Academy of Sciences), professors of materials engineering, introduce 21 illustrated chapters by international contributors presenting the latest information on different types of biomaterials and their fabrication in sections on tissue engineering and scaffold materials, drug delivery systems, nanobiomaterials and biosensors, and other biomaterials. The chapters on tissue engineering discuss the development of inorganic and composite material scaffolds capable of interacting with biological tissues. The focus in drug delivery systems, e.g., in cancer treatment, is on nanoparticles. Other authors treat specific types of biomaterials,
their composition, structure, and applications.

R857 2007-025204 978-0-470-01905-4
**Handbook of biosensors and biochips; 2v.**
Title main entry. Ed. by Robert S. Marks et al.
_John Wiley & Sons, ©2007 1339 p. $860.00_
Seeking to survey and describe the science and technology of biosensors and biochips in use, this impressive two-volume handbook meets this ambitious goal, with 85 articles, each written by a specialist in that technology, that describes the history, theory, technology, use, and future prospects of the topic described. The material is grouped into 10 major areas, including biological and molecular recognition systems; the biology-materials interface; transducer technologies; miniaturized, microengineered, and particle systems; array technologies; data analysis, conditioning, and presentation; applications; and commercialization and regulation. Three introductory chapters offer an overview of the technology, analytical needs, and history of development. The articles are thorough, incorporating an initial descriptive introduction of the technology or issue, its methodology, development, and uses, then providing a detailed description of all aspects of the technology, with summarizing material on use and outcome. Lengthy lists of references and detailed illustrations accompany each article. Both volumes include subject and author indexes as well as a full list of acronyms and abbreviations. The contributors are research scientists at universities and private labs in the US, Canada, Europe, India, Israel, Australia, Japan, and Senegal.

R857 2008-013040 978-1-4200-5182-7
**Nanotechnology and tissue engineering; the scaffold.**
Title main entry. Ed. by Cato Laurencin and Lakshmi Nair.
_CRC Press, ©2008 359 p. $149.95_
This book offers a concise yet detailed account of current research in tissue engineering and nanotechnology. Coverage encompasses fundamentals of scaffolds used for tissue engineering, analysis of cellular responses toward nanostructured materials, emerging nanofabrication techniques for developing biomimetic nanostructures for tissue engineering, and recent breakthroughs in neural, vascular, and musculoskeletal tissue engineering with nanostructures. Contributors are pioneering scientists writing about their own research. The book will be useful as a reference for all those working in the area of biomaterials, tissue engineering, and bio-nanotechnology, including engineers, scientists, clinicians, and advanced students. Laurencin is professor of biomedical engineering and chemical engineering at the University of Virginia. Nair teaches in the Department of Orthopedic Surgery at the University of Virginia.

R857 2008-007358 978-0-470-51294-4
**Wearable robots; biomechatronic exoskeletons.**
Title main entry. Ed. by Jose L. Pons.
_John Wiley & Sons, ©2008 338 p. $130.00_
For students and engineering researchers interested in assistive robotics, this volume provides an overview of wearable robot systems that are designed around the shape and function of the human body. Pons (Instituto de Automática Industrial, CSIC, Spain) compiles 10 chapters by scientists from Europe who discuss mechanics, biometric and bioinspired design, cognitive and physical human-robot interaction, technologies, kinematics, dynamics, and control. Also presented are many case studies, such as that of a lower limb active orthosis for a human leg, a full-body exoskeleton, and a robot that suppresses upper limb tremor. The book is the result of research by the Bioengineering Group (CSIC) on the use of robotics to assist handicapped people.

R858 2008-002698 978-0-470-06035-3
**Computer modeling in bioengineering; theoretical background, examples, and software.**
Title main entry. Ed. by Milos Kojic et al.
_John Wiley & Sons, ©2008 446 p. $160.00_
With principles from engineering applied to dealing with challenges in health and medicine, bioengineering has a broad range of possible applications and a startling record of success, requiring this comprehensive reference to sort out all the possibilities in research and applications. The contributors include computational methods for modeling bones, tissues, muscles, cardiovascular components, cartilage, cells, and spider silk and provide techniques to work with thrombosis, cellular mechanotransduction and cancer nanotechnology. The authors are particularly adept at tying theory to practical examples. They also provide algorithms, line drawings and color plates, and the text is accessible to students as a course text as well as for professionals as a reference.
Current principles and practices of telemedicine and e-health.
Title main entry. Ed. by Rifat Latifi. (Studies in health technology and informatics; no.131)
IOS Press, ©2008 287 p. $161.00
How is long-distance delivery of health care faring in developing countries? In these 20 articles contributors help practitioners, administrators, policy makers and technical professionals keep track of current ideas and applications. Along with a narrative on the development of a virtual hospital in the Balkans, topics include the art of integrating telemedicine and e-health, what to do and what not to do when establishing telemedicine and e-health facilities, last challenges and barriers, creating telehealth networks from existing infrastructures, satellite technology, changing to a paperless hospital, telemedicine in extreme conditions such as disasters and war, technologies for complex and critical care, intensive care telemedicine, and clinical applications (including neurosciences, primary health care, home health and the new patient, rehabilitation, wounds, pathology, dermatology and oncology). Final articles cover medicine on the Internet and telepresence and telemedicine in trauma and emergency.

Health physics in the 21st century.
Bevelacqua, Joseph John.
Wiley-VCH, ©2008 562 p. $175.00
The lines between what were once discrete disciplines of science are increasingly blurred. Here practitioner and consultant Bevelacqua bridges the gap between health physics textbooks and the reference materials needed by practicing health physicists as he focuses on radiation-generating technologies. He considers both mature and emerging technologies as he describes fission and fusion energy (including power production) accelerators (including colliders and charged particle (including accelerators and light sources), and health physics in space (including manned planetary missions and deep space missions). In an extensive string of appendices he provides such materials as production equations in health physics, internal dosimetry, Muon characteristics, the special theory of relativity, computer codes, and curvature systematics in general relativity. The many exercises include solutions. Even with changes in technology, this is a career-long companion.
INTERNAL MEDICINE, PSYCHIATRY

RC78 2007-052818 978-0-7918-0273-1
Biomedical applications of vibration and acoustics for imaging and characterisations.
Title main entry. Ed. by Mostafa Fatemi and Ahmed Al-Jumaily.
ASME, ©2008 294 p. $139.00
This collection of 13 articles describes methods that use acoustic radiation force of acoustic waves, describing their dynamics and use in numerical modeling for the assessment and design of ultrasound vibroacoustography systems, strain induced by dual acoustic radiation force and its ultrasonic measurement, computational inverse problem techniques, and fundamental concepts and image formation in acoustic radiation force impulse imaging. Applications include cardiovascular elasticity imaging, harmonic motion imaging in high intensity focused ultrasound (as used in breast cancer detection, and characterization of skeletal muscle elasticity using magnetic resonance elastography. Articles also cover the vibration and acoustics of tissue characterization, including acoustic response of the human arteries, a non-invasive methods for measuring local viscoelasticity of arterial vessels, tissue harmonic motion estimation for tissue characteristics using ultrasonic and the Kalman filter, characterization of tissue viscoelasticity from shear wave speed dispersion, and bone characterization. Includes appendices on bioeffects, safety standards, and guidelines for practice.

TECHNOLOGY (GENERAL)

T55 2008-007188 978-0-470-18024-2
Hazardous chemicals desk reference, 6th ed.
Lewis, Richard J.
John Wiley & Sons, ©2008 1953 p. $175.00
This reference serves the information needs of those who work with hazardous chemicals. Over 5,800 entries are included, about 500 of them new for this edition. Most of the new entries were selected because they are on the EPA TSCA Inventory. Emphasis has been placed on adding and updating physical properties and updating all DOT Classifications. The information presented in the book was extracted from the 11th edition of Dangerous Properties of Industrial Materials. Citation to toxicity data and other less relevant information can be found in that work. Whenever available, physical description, formulas, molecular weights, melting and boiling points, explosion limits, flash points, and the like have been supplied in the entries. The discussion of human exposures includes details on target organs and specific effects reported. Fire and explosion hazards are briefly summarized in terms of conditions of flammable or reactive hazard. Where feasible, firefighting materials and methods are discussed. Each entry concludes with a summary of the hazards presented by the substance. Three cross-indices are provided as appendices to permit rapid location of a material by CAS number, synonym, or DOT guide number. The book will be used by industrial hygienists, environmental safety and fire safety professionals, toxicologists, plant managers, emergency planners, and students. Lewis, a chemist, is former manager of information systems for the National Institute for Occupational Health and Safety. The previous edition of the book was cited in Guide to Reference Books, 11th edition, and in Resources for College Libraries.
Global engineering project management.
Atesmen, M. Kemal.
CRC / Taylor & Francis, ©2008 152 p. $79.95
Drawing on real cases, this book covers the challenges that the manager of an international engineering project commonly encounters during the life of a project. The book is divided into six chapters that take the reader through an international engineering project from start to finish, from planning to post-project evaluation and protecting intellectual property, with advice on how to navigate the technological, economic, political, and legal issues unique to global engineering project management. Each chapter ends with a summary checklist providing the project manager with a list of reminders. Atesman is a life member of the American Society of Mechanical Engineers.

Engineering (General, Civil)

Homogeneous turbulence dynamics.
Sagaut, Pierre and Claude Cambon.
Cambridge U. Press, ©2008 463 p. $120.00
Still a hot topic for research in fluid mechanics, due in part to its applicability to engineering, geophysics and astrophysics, this field and its related tools lends itself well to the study of any nonlinear chaotic phenomena. Sagaut (mechanics, U. Pierre et Marie Curie) and Cambon (mechanics, French National Center for Scientific Research) draw upon their significant research in their examples, and consider the needs of the practitioner in their organization, starting with an explanation of the statistical analysis of homogeneous turbulent flows and moving on to incompressible homogeneous isotropic turbulence, including pure rotation (anisotropic) strain, pure shear, buoyancy and stable stratification. They cover couples effects (rotation, stratification, strain and shear) as well as isotropic turbulence’s shock interactions and perturbations. They close with descriptions of linear interactions and theories and anisotropic nonlinear triadic closures.

Materials science research trends.
Title main entry. Ed. by Lawrence V. Ollivante.
Nova Science Publishers, ©2008 352 p. $129.00
Leading-edge research in materials science is collected here, from contributors in Norway, Italy, India, the US, Canada, Japan, the UK, Germany, and Taiwan. Specific topics covered include the effect of aging treatments on severely deformed microstructure of different Al-Mg-Si alloys, atomistic analysis of crystal plasticity in a copper nanowire during tensile loading, advances in materials engineering using microstructural characterization tools, and high-rate and low-temperature film growth technology using stable glow plasma at atmospheric pressure. Other subjects are superselection rules induced by infrared divergence, microstructure evolution and electronic transport in ultra-thin Al films, and double ignition maps for combustion-synthesizing NiAl compounds. B&W and color images are included.

Computational physics of carbon nanotubes.
Rafii-Tabar, H.
Cambridge U. Press, ©2008 493 p. $140.00
This book presents the key computational modeling and numerical simulation tools to investigate carbon nanotube characteristics. In particular, methods applied to bonding, mechanical, thermal, transport, and storage properties are addressed. The first half describes classic statistical and quantum mechanical simulation techniques (including molecular dynamics, Monte Carlo simulation, and ab initio molecular dynamics), atomistic theory, and continuum based methods. The second half discusses the application of these numerical simulation tools to emerging fields such as nanofluidics and nanomechanics. Experimental results are used to help clarify theoretical concepts. The audience includes researchers in nanotechnology, engineering, materials science, and physics. Rafii-Tabar is professor of computational nanoscience and head of the Medical Physics and Biomedical Engineering Department at Shahid Beheshti University of Medical Sciences in Iran.

Elasticity with Mathematica; an introduction to continuum mechanics and linear elasticity.
Constantinescu, Andrei and Alexander Korsunsky.
Cambridge U. Press, ©2007 255 p. $110.00
Constantinescu (engineering, French National Center for Scientific Research and École Polytechnique, Palaisea) and Korsunsky (engineering science, U. of Oxford) use plane and three-dimensional problems, general theorems, fundamental solutions, displacements and stress potentials to introduce key ideas and principles in the theory of elasticity. They keep the narrative relatively simple, provide study
aids such as outlines and summaries and offer exercises students can work using “notebooks” from the popular software product. The result is a significant advance in the study of elasticity, with topics such as kinematics (in terms of displacement and strains), dynamics and stress (in terms of stresses and equilibrium, with full due to Cauchy), linear elasticity, general principles (including that of Saint Venant), stress functions (including the work of Kelvin, Williams, Kirsch and Inglis), displacement potentials (including Papkovich–Neuber potentials and the Galerkin vector), energy principles and variational formulations. They include a nice appendix on helpful software tricks.

TA418 978-1-55899-989-3  
Fundamentals of nanoindentation and nanotribology; proceedings.  
Materials Research Society, ©2008 183 p. $114.00  
These proceedings of the November 2007 symposium include a range of papers in these dynamic disciplines within materials science. Evolving and complementary, nanoindentation and nanotribology substantially add to the evidence that biomechanical research has caused a number of disciplines to overlap. In addition, researchers are finding new mechanical tests that can measure smaller and smaller forces and displacements. This situation is reflected in the 27 papers with general topics including the relation among nanomechanics, tribology and nanostructures; size effects and indentation of thin films (including an invited paper on the mechanical properties of 3C-SiC films for MEMS applications); nanotribology and friction (with an invited paper on quasi-static and oscillatory indentation in linear viscoelastic solids); and nanomechanics of polymers in time-dependent characterization.

TA418 2007-052383 978-0-470-24883-6  
Self-assembly and nanotechnology; a force balance approach.  
Lee, Yoon S.  
John Wiley & Sons, ©2008 344 p. $100.00  
An information analysis in colloid and surface chemistry, Lee sets out the concepts and principles of self-assembly as they relate to nanotechnology for graduates and undergraduates who have completed courses in basic organic, physical, or inorganic chemistry. The first part explains self-assembly, and the second samples materials and techniques relating to its application in the nanotechnology of colloids and surfaces.

TA483 2007-465747 978-3-527-31321-1  
Alloy physics; a comprehensive reference.  
Title main entry. Ed. by Wolfgang Pfelle.  
Wiley-VCH, ©2007 973 p. $430.00  
This book covers current research and principles in alloy physics, offering readers an understanding of the structural changes in metals and alloys. Chapter topics include crystal structure and chemical bonding, solidification and grown-in defects, lattice statics and lattice dynamics, point defects, and dislocations and mechanical properties. Other topics covered are phase equilibria and phase transformations, kinetics in nonequilibrium alloys, statistical thermodynamics and model calculations, magnetic media, spintronics, and superconductors. Pfelle is a professor at the Institute of Materials Physics of the University of Vienna.

TA645 2007-278255 978-0-470-33313-5  
Health monitoring of structural materials and components; methods with applications.  
Adams, Douglas E.  
John Wiley & Sons, ©2007 460 p. $140.00  
Health monitoring of structural materials is a relatively new field, and has been enhanced through the use of computer modeling and data analysis. Adams (Purdue U.), one of the pioneers of structural health monitoring, presents this textbook to guide students and structural engineers in the field how to use methods such as in situ damage identification, loads identification and damage and performance prediction. Case studies are also offered to help illustrate the effectiveness of health monitoring, and to identify emerging technologies in the future. A companion website uses MATLAB programming to enhance instruction.

TA660 2007-028688 978-0-521-88329-0  
Nonlinear vibrations and stability of shells and plates.  
Amabili, Marco.  
Cambridge U. Press, ©2008 374 p. $99.00  
In this impressively thorough work, Amabili (U. of Parma, Italy) utilizes nonlinear shell and plate theory to analyze shell stability in the presence of vibration, beginning the volume with an overview of the nonlinear theory of rectangular and circular plates and circular cylindrical and spherical shells. Nonclassical nonlinear theories are described in the second chapter, with attention to shear deformation and rotary inertia, and an
overview of thermal stresses. Building on these foundations, Amabili turns to detailed discussion of nonlinear dynamics, stability, bifurcation analysis, and computational tools, with particular emphasis on the Galerkin method and Lagrange equations of motion and their applications to a variety of applications concerning discretizing plates and shells. Discussion of numerical techniques and various classical nonlinear shell theories follow, as these are applied for large amplitude vibrations of various shells and panels. Other chapters discuss stability under static and periodic loads, the methods for modeling aerodynamic loads, and problems arising from fluid-structure interaction, among other topics.

The behavior of hard rocks is then studied through the use of the damage theory at different scales. The modeling of poromechanical behavior is also introduced in order to shed light on hydromechanical coupling in saturated porous rocks. A final chapter is devoted to parameter identification procedures. The book is of interest to civil and mechanical engineers and geologists, especially those concerned with planning and designing foundations. The book was first published in France in 2002 by Hermes Science/Lavoisier as Modèles de comportement des sols et des roches, vols. 1 and 2. Hicher teaches at L'Ecole Centrale, France. Shao teaches at the University of Science and Technology.

**TA684 978-1-904275-29-9**

*Design and optimization of metal structures.*

Farkas, Józef and Károly Jármaj. *Horwood Publishing, ©2008* 300 p. $79.00

Farkas (metal structures emeritus, U. of Miskolc) and Jármaj (mechanical engineering, U. of Miskolc) offer researchers, structural designers, manufacturers and managers in such industries as building, transport, shipbuilding, aircraft, offshore and chemical engineering as well as students from the undergraduate to graduate level the benefit of their considerable expertise in the modeling and analysis of industrial steel structures, combining the best of classical theory with the most modern trends in numerical optimization. Amongst their subjects they cover newer mathematical optimization methods, cost calculations, seismic-resistant design, fire-resistant design, welded I-beams, frames, welded stiffened plates and stiffened cylindrical shells, and tubular structures. They include name and subject indices and references, making this a good candidate for the classroom as well as the professional bookshelf. Distributed in the US by ISBS.

**TA1634 978-1-59693-224-1**

*Next generation artificial vision systems; reverse engineering the human visual system.*

Bharath, Anil and Maria Petrou. (Bioinformatics & biomedical imaging) *Artech House, ©2008* 438 p. $95.00

In addressing the topic of reverse-engineering the human visual system for technological applications, Bharath (image analysis, Imperial College London, UK) and Petrou (signal processing, Imperial College London, UK), together with an interdisciplinary team of contributing authors, address the topic in separate sections from the perspectives of physiology and cognitive psychology, software engineering, and hardware engineering. With respect to physiology and cognitive psychology, they offer chapters on the physiology/psychology of vision, dynamical modeling of the retina, the functional organization of receptive field characteristics of the cells in V1 (the primary visual cortex), and psychophysical experiments for probing models of V1 processing and visual attention. Software engineering topics include modeling V1 as a spatial frequency analyzer, the mathematics of image processing with irregularly sampled data, the relationship between super-resolution techniques and the eye movements known as tremor and microsaccades, eye vergence and depth perception as they pertain to a robotic assisted surgery application, and motion detection algorithms. And finally hardware is addressed in chapters on polymer sensors for imitating the spectral response characteristics of the human retina, hybrid chips that combine organic (polymer) sensors and analog circuitry, models of very large scale integrated analog circuits for implementing classical simple cell V1 receptive fields, implementation of previously discussed algorithms in digital hardware, and
aspects of pre-attentive vision in terms of spatial and temporal saliency created by motion.

ENVIRONMENTAL TECHNOLOGY

TD195 2007-931763 0-309-10834-9
Environmental impacts of wind-energy projects.
National Research Council.
National Academies Press, ©2007 376 p. $69.00 (pa)
Long a favorite of those who believe sustainability has a chance, wind power has nevertheless been surprisingly controversial. Aesthetics aside, wind turbines can kill flying wildlife and the regulatory framework of wind power is still immature in the US. This report considers the many ways wind power can affect the environment (including disruptions in air, water and habitat and commercial, aesthetic, social and political implications) to establish appropriately in action-space. Researchers explain the process of generating electricity from wind energy, the effects observed in the US (particularly in the mid-Atlantic highlands), the ecological effects of such development, the impact on humans in terms of health and well-being (in terms of electromagnetic interference in particular) as well as economic considerations. They provide a set of guidelines for wind energy planning, development, and the review of proposals.

MECHANICAL ENGINEERING & MACHINERY

TJ164 978-0-87170-869-4
Advances in materials technology for fossil power plants; proceedings.
An October 2007 conference allowed scientists and engineers from around the world to exchange information on advanced, high-efficiency coal power plants. Papers from the conference are presented here, in sections on boilers, turbines, oxidation, creep/life management, welding, and oxy fuel. Some specific topics include materials solutions for advanced steam power plants, consideration of weld behavior in the design of high temperature components, nickel alloys for high efficiency fossil power plants, and material development and mechanical integrity analysis for advanced steam turbines. Other subjects are ferritic and austenitic grades for a new generation of steam power plants, the impact of steam-side oxidation on boiler heat-exchanger tube design, and oxy-combustion technology for utility coal-fired boilers.

TJ260 2008-012305 978-0-8493-7307-7
Microscale and nanoscale heat transfer; fundamentals and engineering applications.
Through analyses, experimental results, and worked-out numerical examples, this book explores the methods and observations of thermophysical phenomena in size-affected domains. Compiling relevant findings from the literature, along with results from their own research activities, the authors treat the main concepts and practical design engineering aspects of heat transfer. They discuss various modern engineering applications, such as microchannel heat sinks, micro heat exchangers, and micro heat pipes. They also cover methods such as discrete computation, and optical measurement techniques for microscale applications. Fundamentals of nanoscale thermal phenomena in fluids are also presented. The book concludes with a chapter devoted to numerical examples of microscale conduction, convective heat transfer, and radiation, as well as nanoscale thermal phenomena. Sobhan is affiliated with the National Institute of Technology, India. Peterson is affiliated with the University of Colorado.
Introduction to nonimaging optics.
Chaves, Julio. (Optical science and engineering series; 134)
CRC / Taylor & Francis, ©2008 531 p. $139.95

Chaves, of Light Prescriptions Innovators in Madrid, has written this textbook on the newly emerging field of non-imaging optics to address global concerns on energy consumption. Designed as an introduction to this discipline for optical engineers, this book also addresses design concerns in illumination engineering and solar energy collection as well. The author summarizes emerging data on this type of optics, such as rays and wave fronts, reflection and refraction and principles of symmetry.

ELECTRICAL ENGINEERING,
ELECTRONICS

TK2931 2007-465762 978-3-527-31474-4
Molten carbonate fuel cells; modeling, analysis, simulation, and control.
This important and dynamic field studies fuel cells that can achieve higher efficiencies for energy conversion than conventional systems based on the Carnot cycle. Contributors describe how to design and operate molten carbonate fuel cells (MCFC), with special focus on a type that integrates the generation of hydrogen by methane steam reforming and electrochemical oxidation of hydrogen in a single unit. They describe analysis with mathematical models that describe interactions (generally of mass, energy and charge transport phenomena), index analysis of models, parameter identification, steady state and dynamic process analysis, hot spot formation and steady state multiplicity, conceptual design and reforming concepts, model reduction and state estimation, optimal control strategies, and optimization of reforming catalyst distribution. The editors provide a complete set of equations and parameters for the benchmark problem and each article includes references.

TK3001 2007-050178 978-0-470-06561-7
Handbook of power quality.
Title main entry. Ed. by Angelo Baggini. John Wiley & Sons, ©2008 618 p. $190.00
This handbook examines the full spectrum of power quality (PQ) disturbances, with background theory and guidelines on measurement procedures and problem solving. It incorporates the perspectives of both power suppliers and electricity users, with scientific and practical information on areas such as frequency variations, the characteristics of voltage, and the relationship of PQ with power systems, distributed generation, and the electricity market. An accompanying web site contains case studies for each chapter, demonstrating PQ practice. The web site also includes extensive appendices listing current standards, mathematical formulas, and principles of electrical circuits. The book is for practicing power systems engineers, researchers, and students. It can also serve as a reference for electrical engineers and technical managers. The book is organized to cover five themes: power system issues, PQ phenomena, practice, problems, and economical aspects of PQ. Baggini is affiliated with the University of Bergamo, Italy.

TK5102 2007-044557 978-0-470-51188-6
Fundamentals of signal processing for sound and vibration engineers.
Shin, Kihong and Joseph K. Hammond. John Wiley & Sons, ©2008 403 p. $110.00
Hammond (U. of Southampton, UK) and Shin (Andong National U., Korea) have written this textbook on the fundamentals signal processing based upon the course Hammond taught for many years. Written for novice sound and vibration engineers, this book covers the essentials of the field while focusing on the differences and properties of deterministic and random signals. Links to a companion site are also provided to outline 50 different MATLAB codes.

TK5102 2007-036301 978-1-59904-899-4
Handbook of research on wireless security; 2v.
Title main entry. Ed. by Yan Zhang et al. Information Science Reference, ©2008 823 p. $495.00
The chapters in this two-volume reference discuss security issues in wireless technology and use, including malware, firewall, security architectures for various types of mobile networks, and fundamentals of security. Each article concludes with a list of references and of keywords and their definitions, making the work of use to graduate seminars. The material is comprehensive in its discussion and provides a useful starting point for the myriad issues of the field. The contributors are at universities and private corporations worldwide. Two of the three editors, Zhang and Miao Ma, are at the National Institute of Information and Communications Technology in Singapore; the third editor, Jun Zheng, is at the City U. of New York.
et al.: Full Issue: vol. 62, no. 4
Published by Jefferson Digital Commons, 2008

TK5102 2007-033010 978-0-470-51649-2
Next Generation Networks: perspectives and potentials.
Salina, Jingming Li and Pascal Salina.
John Wiley & Sons, ©2007 229 p. $110.00
This work explores the benefits, applications, and potential of next generation networks (NGNs) and provides an outlook on future services for end-users and opportunities for network operators. Covering basic and advanced concepts, the book examines NGN technology, architecture, transport, and services. Chapters on business opportunities examine NGN standardization, development, and corporate responsibility. A glossary is included. Readership for the book includes network operators, equipment vendors, researchers, regulators, and engineers. The book will also be of interest to graduate students in electrical engineering and computer science. The authors are consultants in Switzerland.

TK5103 2008-022953 978-0-8194-7234-2
Advances in information optics and photonics.
Title main entry. Ed. by Ari T. Friberg and René Dändliker. (SPIE Press Monograph; v.PM183)
SPIE, ©2008 724 p. $96.00 (pa)
The International Commission for Optics (IC0) commissioned this book as part of an ongoing series to discuss research trends in the field of optical science such as beam optics, laser photonics, electromagnetic coherence, holographic imaging, and photonic processing. Editors Friberg and Dändliker, both associated with the ICO, have assembled these articles to inform the scientific community about work of the organization, and to raise awareness about recent advances in the field. A special section is dedicated to communication networks that use optic technologies.

TK5103 2007-011241 978-0-8493-8227-7
Millimeter wave technology in wireless Pan, Lan, and Man.
Xiao, Shao-Qiu et al. (Wireless networks and mobile communications series)
CRC / Taylor & Francis, ©2008 436 p. $129.95
Consumer and commercial demand has driven research in gigabit wireless personal area networks (WPANs), high-speed wireless local area networks (WLANs) and high-speed wireless metropolitan area networks (WMANs). This collection of 11 articles covers fundamental concepts and recent advances as well as descriptions of upcoming research and new products. Topics include millimeter-wave monolithic integrated circuits for WLAN, package technologies for millimeter-wave circuits and systems, antennas and channel modeling in WPANs, WLANs and WMANs, media access control protocols for millimeter-wave WLAN and WPAN, millimeter waves for wireless networks, the WiMedia standard for WPANs, the millimeter-wave-based IEEE 802.16 standard for WMAN, the millimeter-wave dedicated short-range communications standard (including applications and experimental studies, interference in millimeter-wave WMAN cellular configurations, principles and applications of millimeter-wave radar, and optical generation and transmission of millimeter-wave signals.

TK5105 978-1-59693-228-9
Securing information and communications systems; principles, technologies, and applications.
Title main entry. Ed. by Steven M. Furnell et al. (Artech House computing security series)
Artech House, ©2008 362 p. $89.00
Written by an international team of security experts, this compact reference gives professionals comprehensive information on the newest types of threats and sufficient background to learn how to smell even newer ones coming. The contributors describe security concepts, services, threats, business-integrated information security management, user authentication technologies (including authentication based on secret knowledge and biometrics), authorization and access control (including classic methods, role-based techniques and attribute-based control), applications centered on data, modern cryptology, security for networks, standard public key and privilege management infrastructures, smart cards and tokens, privacy-enhancing technology, content filtering technologies (and how the law applies), models for cybercrime investigation, systemic and holistic approaches, mobile wireless systems security, and in a particularly interesting chapter, security methods pertaining to electronic voting systems.

TK5105 978-981-270-368-2
Trust and security in collaborative computing.
Zou, Xukai et al. (Computer and network security; v.2)
World Scientific, ©2008 229 p. $75.00
According to Zou (Indiana U.-Purdue U.), Dai (U. of Tennessee), and Pan (Georgia State U.), collaborative computing applications include multi-party military actions, teleconferencing, telemedicine, interactive and collaborative decision making, grid-computing, information distribution, and pay per view services.
Collaborative computing environments are group-oriented and involve a large number of entities and shared resources and therefore pose challenges for building trust in security and dependability. This monograph explores issues connected to trust in collaborative computing, including secure group communication and interaction, data sharing/exchange and access control, intrusion attacks and their corresponding detection and response technologies, grid reliability analysis and modeling, grid security, and the integration of security and reliability technologies into medical information systems.

TK6553 2007-049103 978-1-4200-5514-6
Ionosphere and applied aspects of radio communication and radar.
Blaunstein, Nathan and Eugenii Plohotniciuc.
CRC / Taylor & Francis, ©2008 577 p. $149.95
With a continuously evolving technology and an historic split between eastern and western researchers, Blaunstein (communications systems engineering, Ben-Gurion U. of the Negev) and Plohotniciuc (electronics and informatics, Alecu Russo State U., etc.) offer a comprehensive review of new and classic research along with insights into a range of topics. Designed as a reference but also suitable for classroom use, this covers the main characteristics and processes of the regular ionosphere, nonlinear phenomena and plasma instability in the disturbed regular ionosphere, radio signal presentation in the ionospheric communication channels, evaluation of plasma irregularities in the ionosphere, modern radiophysical methods of investigation of ionospheric irregularities, performance of radio communications in ionospheric channels, optical and radio systems for investigation of the ionosphere and ionospheric communication channels, and the performance of land-satellite communication links passing through the irregular ionosphere.

TK6575 2008-014584 978-1-4200-6643-2
Radar signal analysis and processing using MATLAB.
Mahafza, Bassem R.
CRC / Taylor & Francis, ©2009 479 p. $99.95
This text for two graduate-level courses on signals and signal processing introduces numerous programs and functions of MATLAB (R2007a). Unlike other books on the subject, the emphasis is not on signal processing per se, but on signals and signal processing in the context of radar applications. After an overview of radar systems operation and design, the book reviews elements of signal theory relevant to radar detection and radar signal processing, along with random variables and processes. It then presents the matched filter and develops a general formula for matched filter output that is valid for any waveform. Several analog waveforms are analyzed, including the linear frequency modulation pulse and stepped frequency waveforms, as well as unmodulated pulse-train, binary, polyphase, and frequency codes. Other topics covered include radar target detection, radar Doppler processing, and beamforming. All MATLAB programs and functions provided in the book can be downloaded from the publisher's web site. Mahafza is affiliated with decIBel Research Inc.

TK7836 2008-005195 0-07-149594-0
Green electronics design and manufacturing; implementing lead-free and RoHS-compliant global products.
Shina, Sammy G.
McGraw-Hill, ©2008 379 p. $99.95
Shina (mechanical engineering, U. of Massachusetts Lowell) brings together contributors from the entire electronics chain to show how to master the strategy, design, testing, and implementation issues of meeting global environmental regulations. Sections include the environmental process in electronics products, statistical analysis of green electronic products, reliability of green electronic systems, environmental strategy and integration, managing the global design team in compliance with green design and manufacture, successful conversion to lead-free assembly, product development going green, fabrication of green printed wiring boards, green finishes for IC components, and nanotechnology opportunities in green electronics. The book is intended for design, production, quality, and process engineers and their managers.

TK7871 2007-041305 978-0-8493-9284-9
Introduction to organic electronic and optoelectronic materials and devices.
Title main entry. Ed. by Sam-Shajing Sun and Larry R. Dalton. (Optical science and engineering; 133)
CRC / Taylor & Francis, ©2008 910 p. $119.95
In addition to their increased speed, reduced power consumption and better brightness, "plastic" optoelectronics support processing that will lead to flexible devices and low-cost mass production. As nearly everyone (outside of specialist researchers) is new to this field,
the 29 articles here are accessible as well as comprehensive and include exercises suitable for the classroom or self-study. Topics build from introductions to optoelectronic materials and device principles to basic electronic structures and charge carrier generation in organic optoelectronics materials, charge transport, classes of organic small molecules and conjugated polymers, low energy gap and other polymers, carbon nanotubes, organic superconducting materials, molecular semiconductors for organic FETs, organic LEDs and devices, organic nonlinear optical materials and devices, organic and polymeric photo-reactive materials and devices, organic/metal interfacial properties, conducting polymer actuators, polymer photonics for information technology, an self-assembly of organic optoelectronic materials and devices.

TK7871 2007-037113 978-0-470-05818-3
Luminescent materials and applications.
Kitai, Adrian. (Wiley series in materials for electronic and optoelectronic applications)
John Wiley & Sons, ©2008 278 p. $180.00
This book presents the physics and the materials aspects of the field of solid-state luminescence. It describes a range of luminescent materials and applications of current interest, including organic and inorganic light emitting diode materials and devices, down-conversion materials, nanomaterials, and powder and thin-film electroluminescent phosphor materials and devices. The book can be used as a reference to gain an understanding of various types and mechanisms of luminescence and of the implementation of luminescence into practical devices. The book is aimed at postgraduate students in physics, electrical engineering, materials science, and engineering, and researchers in industry and academia studying conduction in solids and electronic materials. It will also provide a starting point for all scientists interested in luminescent materials. Kitai is affiliated with the departments of science and engineering and engineering physics at McMaster University, Canada.

TK7872 2008-003751 978-0-470-03360-9
Analysis of electromagnetic fields and waves; the method of lines.
Pregla, Reinhold.
John Wiley & Sons, ©2008 507 p. $160.00
The Method of Lines is a numerical method for solving partial differential equations that describe physical phenomena, and Pregla (Fern U., Hagen, Germany) explains how it can be applied to electromagnetic fields and waves. He writes for engineers and graduate students in electrical engineering, applied physics, and mathematics who have a basic knowledge of electromagnetic field theory and wave propagation, partial differential equations, linear algebra, and computer languages like MATLAB. He envisions applications in microwave and optical wave technology.

TK7872 2008-003735 978-0-470-72374-6
Mobile displays; technology and applications.
Title main entry. Ed. by Achintya K. Bhowmik et al. (Wiley-SID series in display technology)
John Wiley & Sons, ©2008 625 p. $170.00
With contributions from experts in industry and academia, this book presents fundamentals of mobile displays and a detailed overview of recent developments in the field. Human factors considerations, transfective liquid crystal display technologies, LED backlighting, and mobile display digital interfaces are some areas discussed. Other topics examined include image reconstruction on color sub-pixelated displays, electronic paper displays, 3D displays for portable handheld devices, and eyewear displays. The book is valuable for electronics and display engineers working on the development of mobile displays and their applications, and for graduate students in courses on display technologies. Bhowmik is a program committee member for SID and IEEE. He has taught at Kyung Hee University in Korea.

TK7874 2008-297758 978-1-86094-823-7
Current at the nanoscale; an introduction to nanoelectronics.
Durkan, Colm.
Imperial College Press, ©2008 211 p. $79.00
As the scale of electronic devices begins to approach the nanometer level, notes Durkan (U. of Cambridge, UK), it is becoming increasingly important to understand the details of electric current flow in reduced dimensions. In this work, he provides an introductory overview of transport phenomena from the macroscale to the atomic level. Chapters describe the role of quantum level events in traditional resistors and transistors; the quantum nature of current flow (i.e. the relationship between current and voltage and the origins of electrical resistance); the role of geometry, size, and microstructure in determining resistance at the nanoscale; techniques for probing the electrical properties of structures and devices at the nanoscale; heating and electromigration in nanowires; and the emerging field of molecular electronics.
Distributed in the US by World Scientific.

TK7874 2007-041701 978-0-470-01307-6

Molecular electronics; from principles to practice.
Petty, Michael C. (Wiley series in materials for electronic and optoelectronic applications)
John Wiley & Sons, ©2007 517 p. $240.00
Petty (Center for Molecular and Nanoscale Electronics, Durham University, UK) provides
an introduction to the interdisciplinary subject
of molecular electronics, with detailed examples
of applications. He offers insight into the physics
and chemistry of organic materials, and explores
the means that are now available to manipulate
these materials and to measure their properties.
An overview is provided of what has already been
achieved in the field, in terms of technological
applications, and what may be accomplished
in the near future, including in the area of
bioelectronics. The book is aimed at final year
science or engineering undergraduate students.
It will also be accessible to readers from a wide
range of backgrounds in industry and academia.

TK7874 2008-004929 978-0-470-12948-7

RF measurements for cellular phones
and wireless data systems.
Scott, Allan W. and Rex Frobenius.
Wiley-IEEE Press, ©2008 503 p. $110.00
It is predicted that by the year 2010, all digital
wireless communications equipment will have
data transfer capabilities of over 1 Mbps.
As this turning point approaches, this book
presents background on the radio frequency
(RF) measurements and tests that must be
made on this new generation of digital wireless
communications equipment. Presenting just
enough theory required for comprehension, the
book reviews basic RF principles and terminology,
and describes RF measurement equipment
such as signal generators, power meters, and
vector signal analyzers. The book examines
the RF devices that are used in cellular phone
and wireless data transmission equipment,
looking at how they work, what their critical
performance parameters are, and how they're
tested. It will be useful to engineers, technicians,
and managers involved in the construction,
installation, and maintenance of cell phones
and wireless data equipment. Scott is a training
consultant. Frobenius is a curriculum developer.

TK7875 2007-040799 978-0-8493-8069-3

MEMS and nanotechnology-based sensors
and devices for communications, medical,
and aerospace applications.
Jha, A.R.
CRC / Taylor & Francis, ©2008 401 p. $129.95
They include such wide-ranging applications as
automobile control and safety and medicine;
and they frequently combine electronic devices,
mechanical elements, sensors and actuators and
such materials as silicon, ceramics and carbon
nanotubes. Micro-electromechanical systems
(MEMS) are not only microsystems but models
of reliability and capability. Master practitioner
and consultant Jha starts with the history of
MEMS devices involving nanotechnology, then
describes potential actuation mechanisms
as well as their performance capabilities and
applications, the latest and most unique methods
for actuation, packaging, processing, materials
requirements, RF-MEMS switches operative at
microwave and millimeter-wave frequencies,
RF/MEMS microwave MEMS phase shifters,
applications of micropumps and microfluidics,
devices and sensors for military applications, and
materials for MEMS and nanotechnology-based
sensors and devices. Jha provides summaries
and extensive references, making this a
professional reference and graduate-level text.
Spatial audio processing; MPEG surround and other applications.
Breebaart, Jeroen and Christof Falter.
John Wiley & Sons, ©2007 209 p. $120.00
Written for audio processing and coding engineers, this comprehensive guide reviews all of the latest technologies concerning spatial audio coding, including research on psychoacoustics, manipulation of spatial audio channels and the synthesis of audio channels. Breebaart (Philips Research, the Netherlands) and Falter (EPFL, Switzerland) pay special attention to the higher compression ratios that distinguish the latest coding trends from the conventional methods used in the past.

Advances in digital speech transmission.
Title main entry. Ed. by Rainer Martin et al.
John Wiley & Sons, ©2008 543 p. $130.00
Editors Martin (Ruhr U. Bochum, Germany), Heute (Christian-Albrechts U., Germany) and Antweiler (RWTH Aachen U., Germany) have compiled the latest research in the field of digital speech transmission to explain the latest advances to engineering students and field technicians. These academic papers cover both fundamental information on widespread and emerging technologies such as Voice over IP, soft-decision source-coding and Turbo DeCodulation. Practical applications of these systems are also explained in detail.

Cooperating embedded systems and wireless sensor networks.
Title main entry. Ed. by Michel Banatre et al.
ISTE/Wiley, ©2008 418 p. $150.00
With a rapidly expanding industry and intense competition, different system concepts are likely to emerge. The contributors of these five extended articles, however, argue that many concepts share ideas on control, heterogeneity, wireless communications, dynamics, cost and other factors. After an introduction to the concept of cooperating objects and sensor networks, topics include applications, in such markets as control and automation or logistics, application scenarios, such as sustainable bridges and smart surroundings, paradigms for algorithms and interactions, including wireless sensor networks and robots, vertical system functions, such as context and location management, system architectures and programming models, and a road map of cooperating objects including methodology and structure. Each article includes its own references and the editors provide an author list along with the general index.

NASA space science vision missions.
Title main entry. Ed. by Marc Allen. (Progress in aeronautics and aeronautics; v.224)
Amer. Inst. of Aeronautics & Astronautics, ©2008 434 p. $124.95
Loaded with ideas that take your breath away, this collection of possible future missions includes such techniques as solar sails, remote sensing instruments on Saturn, nuclear electric propulsion, magnetic activity measurement devices and a telescope designed to find and analyze the chemical history of earth and other structures. Clearly cognizant of technology investment planning, the contributors of these 12 essays nevertheless describe their biggest and most ambitious ideas, from the Solar Polar Imager to the Titan Explorer (for Saturn's moon Titan), Neptune Orbiter (probing and landing on Neptune) a nuclear-powered interstellar probe that will leave the heliosphere, the Stellar Imager (stars), the Modern Universe Space Telescope, the single aperture far infrared/submillimeter interferometer in space, the Generation-X vision mission, and the advanced Compton Telescope.
mission. Investors and dreamers, take note.

MILITARY & NAVAL SCIENCE

UA10 2007-928084 978-1-58603-760-4

Scientific support for the decision making in the security sector; proceedings.


IOS Press, ©2007 342 p. $150.00

Kounchev and Tsachev (Institute of Mathematics and Informatics, Bulgaria), Willems (TNO Defense and Security, the Netherlands), and Shalamov (Institute for Parallel Processing, Bulgaria) present the results of a conference bringing together specialists from mathematics and computer and information sciences together with specialists on European security issues in order to lay the groundwork for a synthesis of these respective areas. The papers are organized into sections on planning for security; mathematical, computer, and information science methods for security; environmental security; and dynamic optimization for security. Some examples of specific topics addressed include scenario simulation for the military safety maintenance of the state, planning of security sector capabilities for protection of maritime strategy, database structure for radiation incidents and for treatment of affected people, the affect of multi-modality image displays on decision making, calculation of maximal outlets of small mountainous rivers in Armenia, a real-time air quality operational forecasting system for industrial and urban areas, and a computational approach for assessment of critical infrastructure in network systems.
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