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SciTech News

The Official Bulletin for the Chemistry, Engineering, and Science-Technology Divisions and the Aerospace Section of the Engineering Division and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association

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SciTech News

Ellis Mount, Editor Emeritus

SLA
Connecting People and Information

On the Cover

Although Fingal's cave on the isle of Staffa in the Scottish Hebrides had long been known to locals, it was first revealed to the outside world when Joseph Banks visited the site in 1772 while on his way to Iceland. Banks had the foresight to bring along an artist, who made the picture on the cover of this issue. The naturalist Thomas Pennant later visited the area but missed the cave, so Banks allowed him to use his drawings to make engravings to illustrate the travel account that Pennant published as Tour in Scotland, and Voyage to the Hebrides (Chester, 1774). It was a good thing he did so, because Banks never did publish his own account of his voyage *(photo and caption courtesy of the Linda Hall Library of Science, Engineering & Technology).*

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Manuscripts: The Editor solicits papers of interest to the community of science and technology-oriented special libraries. Manuscripts of articles should be sent via E-mail (Microsoft Word or Plain Text format) to abby.thorne@gmail.com.

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From the Editor

Abby Thorne

Welcome to the final issue of *SciTech News* for 2011! I can hardly believe my first year as Editor is coming to an end!

As we rapidly approach the end of the year, I encourage you to consider several opportunities within SLA for 2012.

If you are not yet involved with your division or section, please consider volunteering to serve in some capacity. Your contributions and service helps SLA provide the excellent professional development, services, and networking opportunities that help you and your colleagues grow and flourish professionally.s

I also ask you to consider submitting an article to the peer-reviewed section of *SciTech News* in 2012. More information and a call for articles is available on page 4. We would really love to see this section of the journal full of content in 2012, but we can only do that with your help and your articles! We are ready to help you get published!

On a final note as the end of the year approaches, I would like to thank Carol Lucke for her years of work on behalf of *SciTech News* and the Sci-Tech Division. This is her last issue as Advertising Manager and we will greatly miss her contributions to our publication.

I hope everyone has a safe and happy holiday season and a prosperous New Year! ❖

Abby Thorne
abby.thorne@gmail.com
859-539-5810

SciTech News Call for Articles!

SciTech News is looking for a few good authors!

If you have a research project, a new service in your library, a new instructional method, or other information you'd like to share with your colleagues, please consider writing for *SciTech News*. In addition to the regular articles, we now have a refereed section. Colleagues will review your article and provide feedback. Accepted articles will be published in the new electronic *SciTech News*. This is an excellent venue to get your research and ideas out to a group of interested readers and get that important refereed article for your dossier or annual review.

For additional information, contact Editor Abby Thorne (abby.thorne@gmail.com) or Review Board Chair Bonnie Osif (bao2@psu.edu). Articles for the refereed section may be submitted to the Review Board Chair at bao2@psu.edu.

News from the Science-Technology Division

Science-Technology Division — Joe Kraus, 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.'

I would like to congratulate Helen Josephine for winning the election for the Chair-Elect position of the Sci-Tech Division. Kudos also go to Margaret Smith as the new Secretary. They will officially start their positions in January of 2012. As the new Chair-Elect, Helen Josephine will have the opportunity to create the slate of sessions for our division at the 2013 SLA Conference in San Diego. I have never been in San Diego before, and I am looking forward to visiting that fair city and attending the SLA Conference.

Helen and several other Sci-Tech members will converge on Atlanta, GA, January 25-28, 2012 for the Leadership Summit.

http://www.sla.org/content/resources/leadcenter/LeadershipSummit/12leadsummit/

Please attend Leadership Summit if you have the opportunity. In Atlanta, Helen Josephine will begin planning the sessions for the 2013 Conference.

I am getting a little ahead of myself, though. I would also like to highlight the great work that Cheryl Hansen has done preparing the Division for the 2012 SLA Conference in Chicago next summer. More information is available at http://www.sla.org/content/Events/conference/ac2012/. This is sure to be an awesome conference!

I enjoyed serving the Sci-Tech Division as your Chair during 2011. I hope you learned more about scientific resources during the June 2011 Conference in Philadelphia and more about the changes in scholarly communication at the October 24th, 2011 Online Seminar (http://scitech.sla.org/2011/09/online-seminar-new-directions-in-scholarly-communication/). The recording of the keynote by John Wilbanks should be available by the time you read this.

I would also like to thank the rest of the Executive Board for providing advice and support to me over the last year.

Chair-Elect – Cheryl Hansen
Past Chair – Hilary Davis
Secretary – Lisa Johnston
Treasurer – Nevenka Zdravkovska

I hope you all have a great holiday season and a happy and healthy New Year. ❖

Joe Kraus
joseph.kraus@du.edu

Sci-Tech Division Seeks Mentors and Mentees

Have you heard of the Sci-Tech Division's mentoring program? One of the most directly influential, yet under-the-radar, ways the Sci-Tech Division contributes to professional development is through the mentoring program, which is coordinated by the Student Relations Committee. The mentoring program is entering its thirteenth year, and we are grateful to all the mentors who have volunteered their time to help their mentees.

The program is a great way to build professional connections and learn from your peers. Students, new division members, or new career professionals are paired with an experienced member of the profession in their area of interest. The mentor's main responsibilities are to offer support and to field questions as they arise, and time involved is minimal - typically, the mentor will contact the mentee several times during the year just to touch base and be available for questions during the year. Potential topics of discussion depend on the mentee's needs and may include: specifics about subject-based collections or reference service, job search and interview tips, outreach advice, guidance on SLA involvement and other types of professional development, ideas for jump-starting research projects, tips on how to turn a research project into a poster or publication, etc. Mentors benefit from knowing they are helping out, expanding their professional network, and gaining perspective on issues faced by students and early-career professionals.

Both mentors and mentees have reported very positive experiences with the program. If you are interested in being a mentor or are seeking a mentor, please contact:

Thea Allen
theaallen@gmail.com

Science-Technology Division New Members

Submitted by Sarah Oelker, Membership Committee Chair, Science-Technology Division

The Science-Technology Division welcomes its new members:

Michele Aquilino
Morristown, NJ
USA

Jessica Bottomly
Seattle, WA
USA

Meira Chefitz
Palo Alto, CA
USA

Laura Hill
Menlo Park, CA
USA

Karen Hudock
Orange, CA
USA

Greta Larmer
Wellington
New Zealand

Tiffany Lopez
Raleigh, NC
USA

Science-Technology Division Member Spotlight

by Emily Kasuto and Sarah Oelker

Featured Member:

Ann Koopman

JEFFLINE Editor, Thomas Jefferson University

A.M. from the University of Chicago's Graduate Library School (may it rest in peace)

Joined SLA sometime in late 1980's/early 90's (both SLA and Sci-Tech Division)

Tell us why you wanted to become a librarian.

When I was in high school I met a wonderful school librarian, who taught me how to write a research paper and who gave me a summer job in the school media center. She was a terrific role model. I wanted to "grow up" to be just like her. In fact, I had a chance to see her again last year and could tell her so. Then I worked in my college library, and those admirable librarians reinforced the decision.

What are some of your interests outside of librarianship?

Ah, I have a passion! I grow African violets. I belong to two local clubs devoted to growing violets, and participate in our annual competitive shows. In fact, I recently qualified as a student judge for violet shows, as well.

What was your background before you became a science librarian?

Well, I just fell into the science gig. My undergraduate degree was a double major in anthropology and religion. I was headed for the social sciences. In library school I intended to go into reference/public services, but veered off into special collections, where I pursued book binding & conservation science. I did some volunteer work and later my thesis at the Field Museum in Chicago. I found I was comfortable with that brush with the sciences.

So when I got married and had to find work within a limited geographic area, I wasn't shy to take a science job that was open. Yes, there was some hard work involved in learning the language, the resources, and special needs of science & engineering faculty. I took some basic courses in math and several sciences, as well. What can I say? The subjects and the scientists & engineers were fascinating. It stuck.

Tell us a little bit about your current position.

I function as both webmaster and content editor of our library's online services, called JEFFLINE. I contribute some time to our reference service, and do special projects, like our institutional repository. It gives me a lot of variety, so I never get bored. Jefferson is all health sciences, all the time. We have a medical school, nursing and health professions schools, graduate sciences, population health and pharmacy – a lot of ground to cover.

What organizations are you involved in?

I belong to ALA/ACRL and my local chapter of MLA, but do almost all my work for SLA. In SLA, I've held quite a few jobs at both the chapter and division levels (Indiana Chapter, Philadelphia Chapter, Sci-Tech Division). It's always been rewarding work, well worth doing. Now I'm about to embark on a term on the SLA Board, which is both daunting and exciting at the same time.

What do you find most interesting about your work?

I have had the very good luck to be able to move through a series of positions, each of which builds on the last, always thriving on changes in technology. I started as a solo proprietor, doing book binding, paper marbling, and conservation consulting. From there, I went into academic science & engineering librarianship. While doing that, I was tapped to learn and do web work. Because I enjoyed the technology, I eventually parlayed that into web-based services and special e-projects. I love learning new things. Some days a person may feel like Alice racing with the Red Queen in Through the Looking Glass, running as fast as she can just to stay in place, but at least the days are never dull.

What do you think is the most interesting issue in librarianship today?

Oh, there are so many! Do I really have to choose just one? What's interesting to me right now is the evolution of scholarly publishing, and ways libraries can support change through institutional repositories, data curation, and other forms of partnership with faculty.

What has been your biggest professional challenge?

Well, I guess it would be the "fork in the road" choice that I had to make some years back. I found myself starting to climb the ladder of library administration, and had to decide whether I really wanted to do that, or preferred to stick to hands-on work. I chose the latter, and have never regretted it (except occasionally, when I look at my paycheck). I've been very lucky to have a flexible employer, who has allowed me a lot of leeway in defining my own position.

What advice would you give a new member of SLA, new Librarian, or someone starting out in science librarianship?

I am a great believer in Joseph Campbell's instruction to "follow your bliss." Do what you love, be open to opportunities and new ways of doing things, be positive and look for the possibilities in situations. Be especially open to "nontraditional" roles, partnerships with faculty or professionals in related fields (like IT or publishing). Start volunteering in the association of your choice (we hope it will be SLA!) – you'll make friends in the field, learn a variety of skills, and probably pick up a mentor or two along the way. Read SLA's Future Ready blog – it has a lot of good advice for our student and new members.

**Format of column and interview question ideas derived from Medical Library Association News Bulletin, member spotlight section.* ❖

Competencies Internalized and Thoughtfully Executed

by Cynthia Cohen, San Jose State University
Recipient of the S. Kirk Cabeen Travel Stipend Award

This article comes several months after my Philadelphia travels, made possible by the generosity of the SLA Sci-Tech Division. I am grateful for the honor of the S. Kirk Cabeen Travel Stipend Award, and for this opportunity to reflect on and share the lasting impressions of my second SLA annual conference experience as a student member.

Lately, I've been thinking a lot about competencies. Now in the final throes of my MLIS program, I'll soon be writing essays and compiling evidence to demonstrate that I've met the fifteen competencies that San Jose State University requires for completion of the degree. Yet I know that library school is just the beginning, and, as a lifelong learner, I embrace the realization that there will be new competencies to conquer even before I walk out of the library-school door. As it happens, the most impactful session for me from the 2011 SLA annual conference spoke to this very idea.

Moderated by Ulla de Stricker (of de Stricker Associates), "Capitalizing on Content to Grow Competencies" featured three engaging speakers: Fred Wergeles (of Fred Wergeles & Associates), Constance Ard (of Answer Maven), and Deborah Keller (of the U.S. Department of Homeland Security). Not to dismiss the relevance of the initial presentations about each speaker's project, I want to communicate the insight these speakers demonstrated in response to questions from the moderator and the audience. Reflecting on competencies they had needed in retrospect, the speakers highlighted the importance of communication: learning your audience's language (and not expecting them to know—or want to know—library jargon); learning to speak to the bottom line; and learning to communicate with diplomacy and tact, particularly with people who communicate differently than you do. Another common theme was the need for lifelong learning and awareness: keeping up with new developments and learning how to implement them for your clients; engaging in continuing education that cultivates your personal passion, and trusting that it will yield something you can apply to your workplace; and reading what the business leaders are reading, to become conversant in "C-level ideas." The speakers conveyed the value of mentors—from within and from beyond the library and information science field—to help us build these skills, point us to new information sources, act as sounding boards, and help us separate the fluff in our own work from the core issues. On the evolution of SLA's "Competencies for Information Professionals of the 21st Century," the speakers called for more flexibility and a broader perspective, suggesting that we must see ourselves as researchers, communicators, and teachers; incorporate self-analysis and reflection; and think about what it would take to get ourselves to where the futurists say we are headed.

Yet the single point that most resonated with me was Deborah Keller's impassioned assertion that it's okay to be a generalist. After years of trying to specialize, performing well but constantly feeling far short of the reach of mastery, she now realizes how valuable it is that she can do many different things and has the ability to learn new skills, continually growing her toolbox, portfolio, and worth. Instead of trying to fulfill someone else's vision of you or your role, Deborah Keller challenged the audience to "figure out what you're good at, and be the best YOU that you can be." We shine when we work from our own strengths, but first we must understand what they are. While others can sometimes show us what we cannot see in ourselves, we each must distinguish advice that seeks to place us in a mold that others perceive as appropriate from advice that genuinely seeks to identify the unique value that we each can contribute. Like Deborah Keller, I am a natural generalist who has always felt (and resisted) the pressure to specialize. If I had succumbed and neglected the wide range of ideas that spark my own imagination, you wouldn't be reading this, as I surely would have never found my way to librarianship without having cultivated a broad range of interests.

This self-reflection is key. While piling up competencies can only improve us, the real benefit is knowing what we're capable of and being able to articulate how our own pieces fit, in whatever puzzle we may drop (or be dropped) into. Once armed with that awareness, we can use it strategically to benefit our organizations, our clients, and ourselves. ❖

2012 SCIENCE-TECHNOLOGY AND ENGINEERING DIVISIONS BONNIE HILDITCH INTERNATIONAL LIBRARIAN AWARD

The Bonnie Hilditch International Librarian Award, sponsored by the Science-Technology and Engineering Divisions, is presented to a librarian outside of the United States and Canada. The purpose of the award 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 $2,000. The SLA annual conference will be held in Chicago, Illinois, July 15-18, 2012.

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 vita OR resume for the candidate, significant publications, supporting letters, etc.

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

DEADLINE FOR NOMINATIONS: December 31, 2011. 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.

APPLICATION PROCEDURES for the SCIENCE-TECHNOLOGY and ENGINEERING DIVISIONS BONNIE HILDITCH INTERNATIONAL LIBRARIAN AWARD

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.

2012 SCIENCE-TECHNOLOGY AND ENGINEERING DIVISIONS BONNIE HILDITCH INTERNATIONAL LIBRARIAN AWARD

POST AWARD REQUIREMENTS:

1. Recipient will write a brief article (approximately 1,000 words) on the conference experience for the November 2012 *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 2012. 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.

E-mail nominations and materials preferred.

News from the Chemistry Division

Chemistry Division — William Armstrong, 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.

As Chair of the Chemistry Division, this will be my last official message to you via Sci-Tech News, but it will certainly not be my last action, and there is more that will be done before this year ends. But I want to take this opportunity to thank all of those on the Executive Board, the Advisory Board, and the membership at large with whom I've worked over the past year. It has truly been a pleasure, and I look forward to working with even more of our membership over the coming years in various capacities.

We have a wonderfully diverse membership, each of you bringing your own experiences with you into this organization. Help us find ways to use your talents, energy, and experience to move this Division forward. Bring us your ideas, for they provide the spark to this organization. Help us meet the needs of our membership in a manner that can better enable each of us in our various jobs to help direct and manage the challenges of a rapidly changing chemical information environment. Contact me or any Board member and volunteer at whatever level of commitment you feel you can afford to offer. I promise, this is an investment with positive returns!

Speaking of investments, Chair-Elect Marie Fraties-Block, along with Program Planner Nora Xiao, Professional Development Chair Ted Baldwin, and CE Course Co-Planner Judith Currano are developing an excellent program for 2012 in Chicago. Details of that will be forthcoming. I trust we will see many of you there.

Our Division work has not ceased for the calendar year 2011, however, so stay tuned for future announcements regarding these activities.

Again, my sincere thanks to all with whom I have worked this year, and I look forward to meeting many more of our membership as time goes on. And remember - think about opportunities to volunteer. The Division needs you! ❖

Bill Armstrong, Chair
notwwa@lsu.edu

News from the Materials Research & Manufacturing Section

Materials Research & Manufacturing Section Bing Wang, 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.

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

Dr. Josep Prous
Executive Vice President
Prous Institute for Biomedical Research
Rambla Catalunya 135, 3º2ª
Barcelona, 08008
Spain

News from the Engineering Division

Engineering Division — Kathryn Breininger, 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.

End of 2011, Beginning 2012

It is hard to believe it is already nearly the end of the year! I know we say it every year, but my, how fast the time has flown by! Today I shuffled my feet through the brightly colored maple leaves that had fallen all around my car while I was in the office, and remembered the joy of kicking up the crackling leaves that I have felt from the time of childhood, and I did a quick little shuffle and kick just to hear the sounds and feel that Autumn feeling that includes crisp days, warm coats, and frost on your breath!

We have been busy in the Engineering Division over the past several months. The nominating committees have been working hard, talking with volunteers, gathering nominations, and setting up and sending out the ballot slates. We will be announcing our new officers in the next few weeks, and look forward to their participation on the Boards starting in January. We thank those who are rotating out to enable others the opportunity to develop their leadership skills and share ideas in the coming year as we work on programming, membership development, and other activities. A warm thank you to those who have held positions, and to those who have volunteered to fill positions!

Another big accomplishment this year was the migration of our website to the new format and platform. A big thank you to our webmaster, Dale Copps, for all his hard work on this! Please check it out at: http://engineering.sla.org/. You will find information from the old site neatly categorized under the tabs across the top of the page, including Member Profiles under the About Us tab. Many thanks to Sara Davis for highlighting our members and helping us get to know one another better in a virtual age!

We have a number of communication avenues available on the website, including our discussion lists and wiki. In addition, we will be posting to the blog regularly, and look forward to your comments! Please take a look and send in your comments, suggestions, ideas for articles, or better yet, submit an article yourself! This is our tool and it opens all sorts of opportunities for us to collaborate, share ideas, discuss best practices, lessons learned, strategies, dreams and goals! We should see rich and varied content grow as we move into the new year and as our membership moves forward in 2012 with new challenges and opportunities. Be watching for postings and updates related to the SLA 2012 conference – it promises to be a fun event in the Windy City!

As you know, Leadership Summit is January 25-28 in Atlanta, Georgia. Brent Mai will present the association's vision for 2012-2014 and there will be opportunities to learn about strategic planning and accomplishing your goals and discuss conference planning for 2013, running effective meetings, engaging members, and developing relationships, to mention a few. I encourage you to attend if possible; it is a great opportunity to learn about leadership, as well as an opportunity to network with colleagues!

I will be your Past-Chair starting in 2012 and Pam Enrici will be your new Chair. I have enjoyed the opportunity to serve as Chair and want to thank my fellow Board Members and all of you for helping me along the way. I have learned so much from each of you, and value the relationships we have developed over the last couple of years. As Past-Chair, I have a list of responsibilities I will be working on in 2012, so you will probably continue to hear from me (be watching for requests for nominations next year, as that will be one of my tasks!). Thank you for a great year! I look forward to new challenges in 2012! ❖

Kathryn Breininger, Chair
kathryn.r.breininger@boeing.com

$1000 IEEE Continuing Education Stipend – Call for Applications

Stipend to attend the SLA Annual Meeting in
Chicago, IL July 15-18, 2012

IEEE (Institute of Electrical and Electronics Engineers) is sponsoring for SLA Engineering Division members a travel stipend up to $1000 toward payment of expenses incurred while attending any Continuing Education course offered at the annual SLA conference in Chicago, IL July 15-18, 2012.

The IEEE Stipend will be given to the qualified 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." Please email Stephanie Sheldon (stephanie.sheldon@lmco.com) for a list of Continuing Education courses offered during the SLA 2012 conference. The winner will also be required to submit an article to the Engineering Division newsletter (SciTech News) within twelve months of completion on how the course helped them in library applications.

Qualifications for Entering Award Competition:

Be a member of the SLA Engineering Division in good standing at the time of applying for the award.

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.

Deadline for Submission: March 14, 2012.

The winner must be present to accept the award at the annual Engineering Division Business Meeting during the SLA 2012 conference.

Submit Entries for the award to:

Stephanie Sheldon
E-mail: stephanie.sheldon@lmco.com
or to:
Stephanie Sheldon, SLA-ENG Awards Committee
Lockheed Martin Aeronautics Company
Company Research Library, MZ 0124
1011 Lockheed Way
Palmdale, CA 93599

Call for Nominations and Applications - SLA Engineering Librarian of the Year Award sponsored by HIS

The Engineering Librarian of the Year, sponsored by IHS, highlights the accomplishments and contributions of SLA Engineering Division members to the engineering librarian profession. The winner must be present to accept the $1500 award at the annual Engineering Division Business Meeting held during the annual SLA conference in Chicago, IL, July 15-18, 2012.

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

Criteria for entry are:

1. Be a member of the SLA Engineering Division in good standing at the time of applying for the award.

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

Instructions for submissions:

Submit the nomination/application by March 14th, 2012. Provide full name, job title, address, telephone numbers, e-mail address, and a maximum one-page statement of the nominee's qualifications.

Submit Entries for the award to:

Diane F. Brenes, SLA-ENG Awards Committee, at the following email address: diane.f.brenes@boeing.com (714) 235-0814.

News from the Aerospace Section

Aerospace Section Adrianne Jones Washburn, 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.

The wind is blowing, the leaves are falling, and time is changing. Literally! On Sunday, November 6th, 2011, Daylight Saving Time ends and we "fall back" to standard time. Changes are constant these days, or so it seems... This year I became a Mom! What an exciting time! However, the birth of my son meant I was unable to attend the annual conference. Thankfully, Hema Ramachandran, Aerospace Section Past-Chair, stepped up to fill in during my absence. Thanks to Hema, the Aerospace Section Annual Meeting and Breakfast, as well as our sponsored session were both successful events!

Hema Ramachandran presents the George Mandel Memorial Award to the 2011 Award Recipient, Gale Harris, Lockheed Martin Aeronautics.

A big round of thanks is also in order for the Aerospace Section Annual Meeting and Breakfast sponsors: AIAA, IHS, and SPIE Digital Library. Thank you to our fabulous sponsors for attending and contributing to the success of our Annual Meeting; we could not do it without you!

Highlighting the Aerospace Section Annual Meeting and Breakfast is the presentation of the George Mandel Memorial Award. This award is made possible by the generous contributions made by Dr. David Mandel and AIAA. Gale Harris of Lockheed Martin Aeronautics was honored as the 2011 George Mandel Memorial Award recipient. Harris has been a librarian for over 34 years, promoting librarianship, contributing to the profession and the Aerospace industry. Congratulations to Gale on this prestigious award!

The Aerospace Section also sponsored the session, "Tweets from Space, NASA and Social Media Tools." The session speaker, Jaime Scibelli, from the NASA Glenn Research Center shared tools that NASA scientists, astronauts, and employees use for communication. While a number of the tools shared were internal to NASA, Scibelli offered a variety of publically available sites and collaborative tool options. Many thanks to AIAA for sponsoring this well attended session, and deep gratitude to Jaime Scibelli for attending the conference and speaking on this intriguing topic!

Technology has made an impact on so many facets of our lives; time will only tell what communication and computing tools will look like 10, 20, even 50 years from now. I look forward to witnessing the evolution of our profession and being an agent for change.

This desire led me to my first leadership role within SLA, and I cannot express how rewarding this year has been! The responsibility and expectations of a leadership position can be a little overwhelming, but with the support of past Aerospace Section leaders, the Aerospace Section Chair position gave me the opportunity to travel and have new experiences, as well as network and meet a number of leaders and experts within SLA. My tenure as the Aerospace Section Chair has been exceedingly beneficial, but it has gone by much too quickly!

A leadership role allows you to develop leadership skills, build your career, network, and contribute to SLA and our profession as a whole. If you've ever considered moving into leadership, this is your chance! The Aerospace Section of the Engineering Division is searching for a

Chair-elect for 2013. If you are interested in becoming a leader, please contact the search committee lead, Hema Ramachandran via email: hramacha@csulb.edu. If you're interested in the Aerospace Chair-Elect 2013 position but have concerns you'd like to discuss, please contact me for more information at: adrianne.j.washburn@lmco.com.

The 2012 Aerospace Section Chair, Barbara Williams, will lead us forward beginning January 1st. Williams, along with Pam Enrici, the incoming Engineering Division Chair, and Cynthia Eastman, incoming Conference Planner, are hard at work planning the 2012 Annual Conference & INFO-EXPO that will be held in Chicago, Illinois, July 15 – 18, 2012. If you haven't marked your calendar yet, do so now!

If you decide to seek a leadership role or you're considering it, be sure to join me, Barbara Williams, Pam Enrici, and Cynthia Eastman in Atlanta, Georgia, January 19-22 for the SLA Leadership Summit. The Leadership Summit offers numerous networking and learning opportunities on a much smaller scale. Don't pass up your chance to make an impact!

I would like to thank the Aerospace Section members & the Engineering members for supporting me and SLA this year. I especially want to thank Hema Ramachandran, Aerospace Section Past-Chair; Cynthia Eastman, Conference Planner; Gale Harris, Session Moderator; Kathryn Breininger, Engineering Division Chair; and Sara Davis, Vendor Relations Chair for facilitating the planning, scheduling, and coordination of events at this year's conference. Thank you for holding my hand and being patient with me as I learned the ropes of leadership!

We had a tremendous conference this year. I wish I could have been there, but instead of lamenting, I'm looking forward to 2012 and the exciting challenges ahead! ❖

Adrianne Jones Washburn
adrianne.j.washburn@lmco.com

Web Reviews

Lisa R. Johnston

Reviews of web resources of interest to *SciTech News* readers.

QR Codes are popping up everywhere…classroom walls, conference posters, and even T-shirts (http://www.thinkgeek.com/stuff/41/09shirt.html). These "Quick Response" Codes are essentially 2D barcodes that work with your mobile phone's built-in camera and a reader application (like "Google Goggles") to easily point to a web-site or application with one click…rather than typing in a full URL. They also can add a bit of excitement or tech savvy to your promotion materials, such as displays and signs in the library and are very easy to implement.

Recently a group of librarians in my library got together to brainstorm how we can use QR codes in our science library. Here is a list of our ideas, best practices and resources that we uncovered. Special thanks to Charlie Heinz, Megan Kocher, and the STS-listserv for all the help with this topic!

How to Implement

1. Create Your QR Code

QR codes must be created using a generator. Popular generators include: http://www.qrstuff.com/, http://qrcode.kaywa.com/, and the application QR Droid for creating images directly from your Android phone.

There are many types of information that can be encoded into your QR code image. Information could include:

- A URL address to a web site
- Text message or SMS
- Phone number
- Contact information
- Latitude/Longitude location (opens a map)

Then publish your image where users can find it (on the web, or printed on a poster or sign at least 1x1 inches with 300dpi print-quality resolution).

2. Track your QR Code "hits"

Free URL shortening tools like Bitly (https://bitly.com/) or Google's http://goo.gl/ will help you track how well your QR code gets used. This also lets you change or update the resulting URL so that the same QR code can be used more than once.

3. Don't go overboard

Remember, QR codes are shortcuts to help people get to a specific web source. Not all information might be appropriate and if the information is critical (eg. Library is closed) a good old-fashioned sign would still suffice.

4. Be respectful

Not all people have smart phones with built-in cameras, therefore accompany your QR code with the destination URL so that anyone can follow the link.

5. Educate

For those who don't know what QR codes are, your sign can also be a teaching moment. Our library links users to an FAQ on our website describing what these images can do.

Ways to Use Them

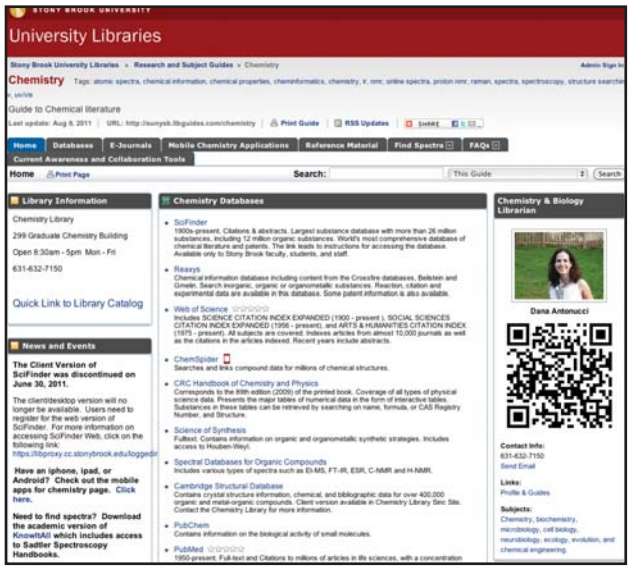
1. Mobile Versions of Sci-Tech Databases

- Web of Knowledge http://m.webofknowledge.com/
- Scifinder Scholar http://scifinder.cas.org/mobile

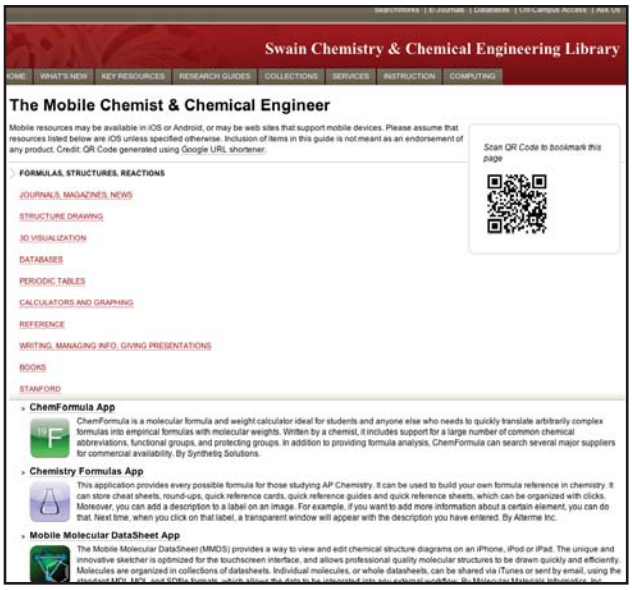
- Science.gov http:/m.science.gov
- And don't forget your library's mobile site!

2. Mobile-Applications and Guides

There are millions of mobile applications ("apps") and some have amazing potential for our sci-tech users. Some libraries have created library guides that list the top mobile applications and can be promoted through QR codes: see for example Dana Antonucci's guide "Mobile Chemistry Applications" tab on the Chemistry libguide http://sunysb.libguides.com/chemistry.

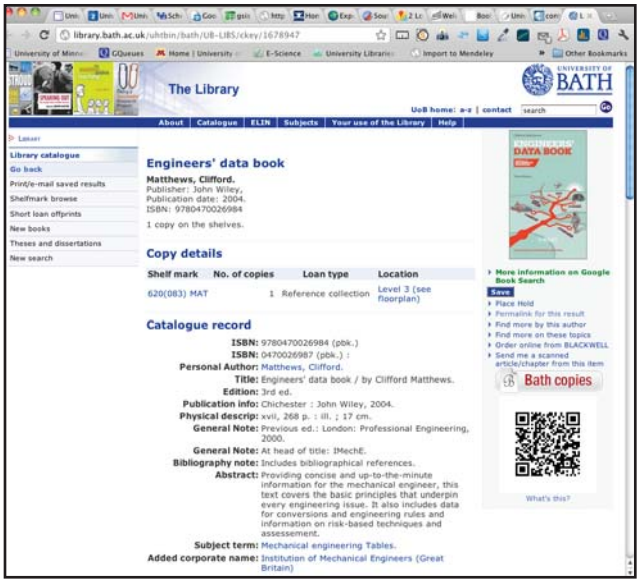


Also, using a QR Code on your web page can be useful when you are highlighting mobile resources. The users can easily switch from viewing your web site on their computer to viewing it on their phone and begin downloading mobile apps. See Grace Baysinger's page at Stanford for a great example of this: http://lib.stanford.edu/swain-library/mobile-apps-chemists-chemical-engineers.



3. In your library catalog

Some libraries have begun embedding QR codes directly into their library catalog. This would allow a user browsing your catalog online to take a quick image with their phone and walk off to the stacks with the call number conveniently located on their mobile device (much more economical that SMS texting!). See this example from the University of Bath in the UK: http://library.bath.ac.uk/uhtbin/bath/UB-LIBS/ckey/1678947



If you promote your events on posters, try adding QR Codes to embed details directly into company or university-wide calendar systems or direct users to the sign-in form for workshops to help increase attendance with your library instruction sessions.

5. In the Stacks

Any collection in the library that has an online component is fair game for using QR codes in the stacks. Here are some of our favorite ideas for QR Code signs:

- Sticker on map drawers linking to digital versions (eg. USGS Topo Finder http://store.usgs.gov/)
- Point to DVD movie trailers from the media collection
- Promote digitized versions of microfiche collections, such as NASA Technical Reports
- Engineering standards where new versions may be online
- Journal print runs that continue online only
- Subject guides for any browsable section (Chemistry, Physics, etc.)
- Important reference works that are full-tech searchable like Sci-tech encyclopedias.
- Building hours and link to alternative libraries for off-hours study locations

More resources to get you started!

Give Away Some E-books
http://www.davidleeking.com/2011/03/07/give-away-some-ebooks/

Blog post describes library experimenting with QR codes to "give away" free e-books.

Google Kills Off Those Little Square Codes You Scan With Your Phone
http://www.businessinsider.com/those-little-square-codes-you-scan-with-your-phone-are-dead-2011-3

Article predicts the demise of QR Codes in favor of near-field communication (NFC) chips due to "Google Places" move away from QR Code support.

Augmented Reality App for Shelf Reading
http://youtu.be/NgZVI630SsI

Video by computer science professor who developed a smart phone app that scans books on a shelf using QR Codes.

QR Code Roundup: 10 Resources for Librarians and Educators
http://oedb.org/blogs/ilibrarian/2011/qr-code-roundup-10-resources-for-librarians-and-educators/
Includes topics such as how to make QR Codes more attractive looking and scanning library cards on smart phones.

Tales of Things
http://talesofthings.com/

Using QR Codes to tag physical objects, like the antique clock on your mantel. This site allows you to preserve memories by attaching them to the physical item. ❖

Beyond the Chemistry Web...

Bob Buchanan, Chemistry Librarian, Auburn University

Every wonder how the Google search page looked on a particular day? See Google Holiday Logos (better known as Google Doodles) for a historical record of these cutesy homepage-for-a-day designs. A search box is provided to locate past designs but beware – indexing is surprisingly thin. The most productive search is to browse for specific holidays.
http://www.google.com/logos/

Sciencebase is a fantastic blog that covers anything related to science. A chemist by training, David Bradley, has spent over 20 years as an award-winning science writer. David Bradley has been described by The Guardian as "often irreverent, but always intelligent."
http://www.sciencebase.com/

Be prepared to get lost in the in the Museum of Online Museums. This is a fascinating array of museums, collections, and exhibits.
http://www.coudal.com/moom

Molecular Expressions Microscopy Primer is a huge collection of microscopy images and movies. The Optical Microscopy Primer offers background on microscopy techniques.
http://micro.magnet.fsu.edu

Viewing colorful micrographs from the Gorgeous Inside Stories of Metal requires online access to C&E News. Microstructure features reveal the history of a piece of metal – how it was manufactured and how it was used.
http://pubs.acs.org/cen/metallography/index.html

Wellcome Images is a large collection of images on the history of medicine, modern biomedical science and clinical medicine.
http://images.wellcome.ac.uk/

From one compact page, convert units in 19 physical dimensions with the Versatile Unit Converter where "the user writes the unit he wants, in the form of a mathematical formula."
http://www.cberthod.homepage.bluewin.ch/vuc/converter.html ❖

Science Today in Verse

Hope Leman, Samaritan Health Services

The Nobel Prize in Physics 2011

Our universe is growing
At an accelerated rate
Let's hope it won't
Disintegrate

Though we'd thought
It's slowing down
A Nobel winner of renown
Declares the opposite to be the case
In the depths of outer space

The 2011 Nobel Prize in Chemistry

Dr. Shechtman's discovery
Seemed so odd it could not be
He was attacked in fashion cruel
Subjected to basest ridicule
Pauling said that he
Considered it tomfoolery
But Shechtman was full of fight
And in the end was proven right

The 2011 Nobel Prize in Physiology or Medicine

Should bacteria attack
You wouldn't want to lack
An immune system most robust
For without one you would be
Early for Eternity
Ashes to ashes and dust to dust ❖

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

G70 2011-012049 978-0-415-80483-7
Advances in web-based GIS, mapping services and applications.
Title main entry. Ed. by Songnian Li et al. (ISPRS book series; v.9)
CRC Press, ©2011 385 p. $159.95
The processes of designing, implementing, generating, and delivering maps, geospatial data, and Geographical Information Systems' (GIS) functionality or services on the web are examined by contributors from the underlying sciences, from areas of application, and from the computer systems that connect the two. They address the overall issues of constantly updating related web and geospatial technologies as well as innovations in web mapping caused by mainstream information technology vendors such as Google and Yahoo, increased interest in geospatial information technologies from business, and increasing demand from the general public for prompt and effective online access to geospatial information.

G70 978-1-58948-242-5
Understanding GIS; an ArcGIS project workbook. (DVD-ROM included)
Harder, Christian et al.
Esri Press, ©2011 360 p. $79.95 (pa)
This workbook for GIS (geographic information system) students and professionals illustrates the methods, tools, and processes needed to apply full-scale GIS analysis to a spatially-based problem. It contains a nine-lesson project in which readers assume the role of a GIS analyst who must find the best location for a new park along the Los Angeles River, providing the starting data (on the DVD) and guidance for performing a complete GIS analysis and exploring the study area; building a database; evaluating, processing, editing, and analyzing the data; modeling alternative outcomes; mapping findings; and sharing results on interactive web maps. It includes instruction on the use of ArcGIS Desktop 10 software within the project.

GE45 2011-004906 978-1-906799-04-5
Practical environmental statistics and data analysis.
Title main entry. Ed. by Yue Rong. (Advanced topics in environmental science series)
ILM Publications, ©2011 269 p. $105.00
Rather than a math book, this work is a practical statistics guide for policy makers, planners, regulators, and those working in environmental science. Focusing on statistics as a means to solve problems in a variety of environmental fields, the book describes statistical methods used in environmental research, problem-solving, and decision making in areas such as groundwater monitoring, transport in environmental systems, and environmental forensics. Coverage includes applications of statistics in earthquake hazard prediction, adaptive sampling of ecological populations, solving complex environmental problems using stochastic data analysis, and statistical accounting for uncertainty in modeling transport in environmental systems. There are also chapters on petroleum hydrocarbon forensic data and cluster analysis, and anomaly detection methods for hydrologists, hydrogeologists, and environmental engineers. A section of color charts is included. International contributors come from academia, industry, and public entities. Rong is the environmental program manager at the Los Angeles Regional Water Quality Control Board of the California Environmental Protection Agency. Distributed by Cold Spring Harbor Laboratory Press.

GE195 2011-0504 978-1-4398-4928-6
Fundamentals of practical environmentalism.
Weldon, Mark B.
CRC Press, ©2011 201 p. $79.95
Drawing on some 20 years of professional engineering experience, resource conservation

engineer Weldon (PepsiCo, Cedar Rapids, Iowa) introduces readers to a valuable tool for improving their daily interactions with the environment. Written for activists, policymakers, researchers, resource managers, government agencies, and students, the text opens with an overview of practical environmentalism and its four main components<-->environmental degradation, resource conservation, economic progress, and personal benefit<-->followed by a concise history of environmentalism in the US, environmentalism ethics, and elements that make environmental decision making difficult. Subsequent chapters explain each of the components in detail, including their combination into a holistic metric to guide environmental actions. Using real-world examples, Weldon demonstrates use of the metric to conduct practical and meaningful analyses of environmental issues and actions, both the individual and large scale.

ECONOMICS

HB61 2011-009721 978-0-8389-1024-5
ALA guide to economics & business reference.
Title main entry. Ed. by American Library Association.
Am. Library Association, ©2011 505 p. $65.00 (pa)
Compiled in North America for use primarily in North American libraries serving higher education institutions, this reference guide will also be of value to public and school librarians, independent researchers, publishers, book dealers, and librarians in North America and beyond. It contains annotated bibliographies for some 1400 print and electronic sources that are key to economics and business reference. The entries are grouped into eight topical chapters: basic industry information, company information, economic conditions and world trade, functional areas of business, general works, occupations and careers, regional economic sources, and specialized industry information. Each chapter is further organized into multiple subcategories; entries are organized alphabetically within the subcategories. The entries include the traditional array of encyclopedic, bibliographic, and compendious works, as well as websites, search engines, and full-text databases.

HB615 978-1-4398-5763-2
Primer on risk analysis; decision making under uncertainty.
Yoe, Charles.
CRC Press, ©2012 237 p. $59.95 (pa)
Intended as a primer for students or practitioners, this book by You (economics, College of Notre Dame of Maryland) explores risk assessment and management under the standard situation of uncertainty. This book also has a section on risk communication which covers honest public relations focused on two way interaction. The language of risk analysis still varies depending on the organization, and the author both chooses to standardize the terms used in his writing and also to present in an appendix the official language of the International Organization for Standardization (ISO). Examples of relations with government agencies, such as the Food and Drug Administration or the Department of Homeland Security, are limited to the United States.

PRODUCTION, INDUSTRY, LABOR

HD30 2011-014967 978-1-60960-605-3
International enterprises and global information technologies; advancing management practices.
Title main entry. Ed. by Felix B. Tan.
Information Science Reference, ©2011 390 p. $180.00
International contributors in management and computer information systems offer insight on the use of technology in business and industry, in this book for managers, IT professionals, and business students. The first section of the book introduces governance, trends, and terminology related to the latest information technology, and examines the influence of national and organizational cultures on technology use. The second section offers international cases on different sectors, in areas such as user evaluation of e-government systems in China, compliance with government regulation of IT in South Africa, use of instant messaging in Kuwait, and Korean mobile Internet use. The book's third section looks at trends and techniques, such as management of knowledge transfer in offshore software development. Tan is professor of information systems and director of the Center for Research on Information Systems Management at Auckland University of Technology, New Zealand.

HD30 2011-017262 978-1-55570-720-0
Knowledge management; an introduction.
Desouza, Kevin C. and Scott Paquette.
Neal-Schuman, ©2011 351 p. $80.00 (pa)
Information scholars Desouza (U. of Washington) and Paquette (U. of Maryland) offer a textbook introducing graduate and upper-level undergraduate students to fundamentals of managing information

that can be applied in any type and size of organization. Information management courses are taught in several disciplines ranging from library science to engineering. There are no prerequisites. Within sections on the basics, processes, and building programs, they consider such aspects as the concept of knowledge, knowledge transfer, and building the business case for knowledge management.

HD30 2011-012048 978-1-4200-7860-2
Lean management principles for information technology.
Plenert, Gerhard J. (Series on resource management)
CRC Press, ©2012 344 p. $79.95
Plenert, who works in information technology quality and productivity consulting and has experience in manufacturing, planning and scheduling methods, explains how to introduce and implement lean principles in information technology functions in settings ranging from the commercial sector to government to reduce or eliminate waste and increase efficiency. He discusses Six Sigma, cycle time, value stream mapping, value-added vs. non-value-added activities, bottlenecks, and spaghetti charting. Coverage also includes the need for IT to become more efficient, an overview of change management and how it works, and exploration of IT and the need for improvements. He details a methodology for analyzing problems and processes and overviews continuous process improvement alternatives, then describes how lean can be used, along with metrics to determine if success and improvement was achieved. He ends with a section on assessing an organization's IT maturity, the next generation of lean and its application, and how it can drive IT in the future.

HD30 2011-018830 978-981-4335-58-4
Multiple criteria decision making; from early history to the 21st century.
Köksalan, M. Murat et al.
World Scientific, ©2011 197 p. $72.00
For students, academics, and professionals in the field of decision sciences, Köksalan (multiple criteria decision making, Middle East Technical U., Turkey) et al. recount the history of multiple criteria decision making (MCDM) in the field of management sciences and operations research, from its early history and roots to the 1960s, and through each subsequent decade up to the present. They cover contributors, contributions, and subfields such as decision analysis, goal programming, the work of the "French School," which includes outranking relations, multiple objective mathematical programming, fuzzy set theory, the analytic hierarchy process, and evolutionary multiobjective optimization. They also highlight International Society on Multiple Criteria Decision Making conferences and traditions, its awards, and presidents, and provide biographies of leading scholars in the field, with photos.

HD69 978-1-4398-5246-0
Managing projects in trouble; achieving turnaround and success.
Kliem, Ralph L.
CRC Press, ©2011 196 p. $69.95
Over 25-plus years of experience in a corporate environment, project management consultant Kliem has discovered how to successfully manage projects, in general, and five keys to effectively turning around troubled ones. In this text, he offers project management professionals an overview of project management and the symptoms and patterns of troubled projects, followed by chapters on each of the five strategies: *energizing* the project by motivating the existing team members to make needed changes; *envisioning* the project by revisiting the original vision and developing a new or revised vision; *exploring* all the options available to execute the new or revised vision; *evaluating* those options to choose the best one(s) to implement; and implementing solid management concepts, tools, techniques, and methods to *execute* a new or revised vision of the project.

HD69 2011-016833 978-1-4398-5111-1
Program management complexity; a competency model. (CD-ROM included)
Levin, Ginger and J. LeRoy Ward. (ESI international project management series)
CRC Press, ©2011 203 p. $69.95
The authors, credentialed as "Program Management Professionals" by the Project Management Institute, offer their advice on managing complexity in programs across industries and provide information on the set of competencies that is required to be a successful program manager. They begin with a literature review of program and project management complexity and then present a competency model for program managers that addresses the performance competencies of defining, initiating, planning, executing, monitoring and controlling, and closing the program and the personal competencies of communicating, leading, building relationships, negotiating, thinking critically, facilitating, mentoring, and embracing change. They also include assessment instruments for assessing one's own competencies. The CD-

ROM appears to just reproduce the model and the assessment instruments in electronic form.

HD9502 2010-934014 978-1-84844-551-2
The handbook of research on energy entrepreneurship.
Title main entry. Ed. by Rolf Wüstenhagen and Robert Wuebker.
Edward Elgar Publishing, ©2011 384 p. $210.00
The process of assembling this collection of articles further convinced editors Wüstenhagen (renewable energies management, U. of St. Gallen, Switzerland) and Wuebker (entrepreneurship and strategy, U. of Utah, US) that in addition to scholarly benefits, "...understanding the drivers of entrepreneurial activity in the emerging new energy sector (along with exploring the specific challenges faced by energy entrepreneurs) has tremendous practical relevance." Contributions are arranged under the broad themes of the role of start-up firms, international energy entrepreneurship, large encumbent firms, financing, commercializing energy innovation, and institutions and public policy.

HD9685 978-1-60807-127-2
The advanced smart grid; edge power driving sustainability.
Carvallo, Andres and John Cooper.
Artech House, ©2011 237 p. $89.00
Carvallo and Cooper describe how they built a smart electric power grid for the Austin, Texas power company, which they expect to be the first of many. They focus on the new power engineering concepts needed to drive the transition to a more rational approach to designing and operating an advanced smart grid. They discuss the inevitable emergence of the smart grid, the rationale for an advanced smart grid, smart convergence, smart grid 1.0 emerges, envisioning and designing smart grid 2.0, today's smart grid, and fast-forward to smart grid 3.0. No deep technical background is assumed.

SCIENCE (GENERAL)

Q325 2010-046375 978-0-470-34396-8
Self-adaptive systems for machine intelligence.
He, Haibo.
John Wiley & Sons, ©2011 230 p. $84.95
This comprehensive introduction to machine intelligence engineering and self-adaptive systems provides an overview of a variety of processes and technologies for the development of artificial intelligence. The volume includes discussion of incremental learning, imbalanced learning, ensemble learning, adaptive dynamic programming, associative processes, sequence learning and hardware design for machine intelligence. Chapters include numerous illustrations, formulas and data tables as well as a glossary of terms, acronyms and abbreviations. He is a professor of engineering at the University of Rhode Island.

MATH, COMPUTERS

QA76.54 2011-016061 978-1-60960-827-9
Achieving real-time in distributed computing; from grids to clouds.
Title main entry. Ed. by Dimosthenis P. Kyriazis et al.
Information Science Reference, ©2012 330 p. $195.00
This collection of fifteen articles on distributed computing showcases current scholarship in cloud computing and a wide variety of online services. Divided into sections covering software as a service, infrastructure as a service, and platforms as a service, individual articles discuss such topics as programming interfaces and IDEs for real-time and cloud based computing, data storage in cloud based environments and workflow management systems in distributed computing. Papers include abstracts, illustrations, code examples and references and a volume-wide compilation of reading resources is provided. Contributors include computer scientists and academics from European institutions.

QA76.575 2011-001669 978-0-470-74700-1
Multimedia semantics; metadata, analysis and interaction.
Troncy, Raphaël et al.
John Wiley & Sons, ©2011 305 p. $115.00
Researchers in multimedia, information, and other fields address issues relating to representing and managing the multimedia data that is increasingly being acquired, created, stored, sent, edited, browsed, and rendered on devices ranging from desk computers to mobile phones. They gather and report on recent work that aims to extract and represent the semantics of multimedia items, focusing particularly on what is called the semantic gap: between the low-level descriptors that can be computed automatically from multimedia content, and the richness and subjectivity of semantics in user queries and human interpretations of audio-visual media.

QA76.58 2011-017261 978-1-55570-749-1
Getting started with cloud computing; a LITA guide.

Title main entry. Ed. by Edward M. Corrado and Heather Lea Moulaison. (LITA guide; #16)
Neal-Schuman, ©2011 214 p. $65.00 (pa)
Cloud computing, in which data is centrally stored, is introduced as enabling libraries to focus on their mission and services rather than on peripheral technical issues. In this Library and Information Technology Association guide, Corrado (library technology, Binghamton U., New York) and Moulaison (information science and learning technologies, U. of Missouri) compile 20 chapters for librarians and computer professionals working in libraries on how cloud computing relates to their environment. Contributors discuss general issues, technologies, and case studies of library usage of cloud computing. Illustrations feature service sign-in forms, data flows, and cost comparisons of cloud platforms.

QA76.585 2011-012004 978-1-59749-592-9
Securing the cloud; cloud computer security techniques and tactics.
Winkler, Vic J.R.
Syngress Media, Inc., ©2011 290 p. $59.95 (pa)
This comprehensive guide to security concerns and best practices for cloud computing and cloud services provides practical advice for assessing security risks in remote infrastructure and applications and implementing security standards both in the design of new cloud products and the use of existing services. Topics discussed include cloud computing architectures, risk issues and legal topics, data security, internal and external clouds, information security frameworks and operational guidelines. Chapters include summaries, numerous illustrations and organizational charts, tables and sidebars. Winkler works for Booz Allen Hamilton, a security consulting firm working for the US government.

QA76.5915 2011-002202 978-0-470-74772-8
Pervasive computing and networking.
Title main entry. Ed. by Mohammad S. Obaidat et al.
John Wiley & Sons, ©2011 322 p. $105.00
This collection of nineteen articles on pervasive computing highlights current scholarship in a wide variety of technologies related to ubiquitous systems and networks. Topics discussed include resource and service discovery in mobile computing, dynamic reconfiguration, opportunistic networking, standards implementation, smart systems and intelligent environments and adaptive architecture and ad hoc performance evaluations. Individual papers include illustrations, tables and code examples. The contributors are hardware and software engineers and academics in computing and informatics related fields from universities around the world.

QA76.76 2011-014858 978-0-13-258220-9
The economics of software quality.
Jones, Capers and Olivier Bonsignour.
Addison-Wesley, ©2012 587 p. $79.99
Intended for software testing professionals as well as other stake holders in the development process, this volume seeks to quantify the costs and value of software testing in order to provide a solid footing for both business and technological decision making. Beginning with definitions of software testing processes and economic value, the work discusses estimating and measuring software quality, defect prevention, pre-test defect removal, post-release defect removal and economic analysis of the testing and remediation processes. Jones is the CEO of a software company and Bonsignour is an experienced software developer and tester.

QA76.76 2011-014614 978-1-60960-762-3
Handbook of research on practices and outcomes in virtual worlds and environments; 2v.
Title main entry. Ed. by Harrison Hao Yang and Steve Ci-Yin Yuen.
Information Science Reference, ©2012 755 p. $495.00
This two-volume set introduces theoretical aspects of virtual worlds and describes current and future trends in the design of virtual worlds. The book's international contributors come from diverse fields, such as educational technology, computer science, and industrial engineering. In the first part of the book, they ponder ethical considerations for the design and development of virtual worlds, learning games, and simulations, and address the problem of virtual hate communities. The second section looks at applications of virtual communities, such as virtual museums, virtual evidence in the courtroom, and cyber charter schools. Chapters on professional development and pedagogical design examine teacher professional development, virtual worlds as environments for spatial reasoning, and instructor feedback in online learning. The book's final set of chapters gives examples of program practices, such as e-portfolios in reflective learning and commerce models in virtual worlds. B&w screenshots are included in a two-column format. The book is written for a broad audience of practitioners, managers, trainers, and researchers in business and education. It can also be used in courses in information or

instructional technology. Yang teaches in the Department of Curriculum and Instruction at State University of New York-Oswego. Yuen teaches the Department of Technology Education at The University of Southern Mississippi.

QA76.9 2011-012243 978-1-84821-250-3
Distributed systems; design and algorithms.
Title main entry. Ed. by Serge Haddad et al.
ISTE/Wiley, ©2011 334 p. $145.00
Researchers mostly from France but also the lowlands and Chile explain distributed systems to engineers, masters students, or others familiar with algorithms and programming. They present distributed systems in relation to their design and their main principles. The overall themes and large-scale peer-to-peer distributed systems; distributed, embedded, and real-time systems; and security in distributed systems. Among the topics are design principles of large-scale distributed systems, peer-to-peer storage, scheduling in distributed real-time systems, the design of aerospace systems, practical security in distributed systems, and enforcing security with cryptography.

QA76.9 2010-281555 978-981-283-703-5
Handbook of electronic security and digital forensics.
Title main entry. Ed. by Hamid Jahankhani et al.
World Scientific, ©2010 697 p. $252.00
While the knowledge explosion due to information and communications technology (ICT) has yielded substantial benefits, the darkside of ICT is escalating in the form of cybercrime. Jahankhani (U. of East London, UK) and other researchers and practitioners in the field of electronic security and digital forensics present a state-of-the-art review of the risks, issues, and practices involved in electronic information security. Following an introduction to principles for protecting computer operating systems and networks, contributors to 33 chapters discuss topics including authentication, security measures specifically for wireless networks, developing secure-by-design information systems, behavioral biometrics, and other risk management strategies. They also treat how to protect national critical information infrastructures against cyber attacks, and intelligent decision support systems for forensic investigations. Diagrams illustrate the frameworks and processes discussed.

QA76.9 2011-005844 978-0-12-372512-7
Heuristic search; theory and applications.
Edelkamp, Stefan and Stefan Schrödl.
Morgan Kaufmann Pub., Inc., ©2012 836 p. $89.95
This is an introduction to artificial intelligence heuristic state space search. Authors Edelkamp (U. of Bremen, Germany) and Schrödl (a research scientist at Yahoo! Labs) seek to strike a balance between search algorithms and their theoretical analysis, on the one hand, and their efficient implementation and application to important real-world problems on the other, while covering the field comprehensively from well-known basic results to recent work in the state of the art. Prior knowledge of artificial intelligence is not assumed, but basic knowledge of algorithms, data structures, and calculus is expected. Proofs are included for formal rigor and to introduce proof techniques to the reader. They have organized the material into five sections: heuristic search primer, heuristic search under memory constraints, heuristic search under time constraints, heuristic search variants, and applications.

QA280 2011-012246 978-1-84821-277-0
Digital spectral analysis; parametric, non-parametric and advanced methods.
Title main entry. Ed. by Francis Castanié. (Digital signal and image processing)
ISTE/Wiley, ©2011 383 p. $145.00
This reference for students, engineers, and academics covers all aspects of digital spectral analysis. Part 1 deals with processing tools and spectral analysis, offering chapters on areas such as classes of signals, representation of signals, spectral analysis, and digital signal processing. This section also offers an introduction to estimation theory with an application to spectral analysis time-series models. Part 2 covers non-parametric methods used most often in industry, and part 3 covers parametric methods such as spectral analysis by parametric modeling and minimum variance. A chapter on subspace-based estimators includes an application to partially known signal subspaces. Part 4 treats advanced concepts such as multidimensional harmonic retrieval, spectral analysis of non-stationary random signals, space-time adaptive processing, and particle filtering and tracking of varying sinusoids. Castanié directs the Research Laboratory in Telecommunications for Space and Aeronautics in France.

QA280 2010-048281 978-0-470-54064-0
Time series analysis and forecasting by example.
Bisgaard, S*oren and Murat Kulahci. (Wiley series in probability and statistics)*
John Wiley & Sons, ©2011 366 p. $125.00
Technology management scholar (U. of Massachusetts-Amherst) Bisgaard (1938-2010) and Kulahci (statistics, Technical U. of Denmark) found that many students and practitioners in statistics get frustrated trying to learn time series analysis, and either give up on it entirely or just plug data into a software package and accept what comes out. They set out to provide an introduction that is easy to understand and use, and that draws heavily from examples to demonstrate the principles and techniques. The profession of statistics needs at least a few people who know what is actually going on, they say, and who know the shortfalls of the statistical techniques being used.

ASTRONOMY

QB462 2011908774 978-1-58381-768-1
Numerical modeling of space plasma flows; proceedings.
International Conference on Numerical Modeling of Space Plasma Flows (5th: 2010: San Diego, CA) Ed. by Nikolai V. Pogorelov et al. (Astronomical Society of the Pacific conference series; v.444)
Astronomical Soc./Pacific, ©2011 300 p. $77.00
At a level suitable for graduates, researchers, and practitioners in space physics, astrophysics, numerical engineering, and applied mathematics, 44 papers look at turbulence and cosmic ray transport; astrophysical flows; space plasma flows; kinetic, particle, and hybrid simulations; numerical methods, algorithms, and frameworks; and data handling and visualization. Among specific topics are quantifying uncertainty for turbulent mixing simulations, simulating relativistic shocks and associated radiation from turbulent magnetic fields, the effects of sun rotation on solar wind propagation, the effect of pitch angle scattering on the formation of the interstellar boundary explorer ribbon in the outer heliosheath, coupling kinetic and hydrodynamic models for simulating gas flows and weakly ionized plasmas, and petascale global kinetic simulations of the magnetosphere and visualization strategies for analyzing very large multi-variate data sets. There is no subject index.

QB500 2011927102 978-0-7695-4446-5
Space mission challenges for information technology; proceedings.
IEEE International Conference on Space Mission Challenges for Information Technology (4th: 2011: Palo Alto, CA)
Computer Society Press, ©2011 200 p. $188.00 (pa)
The conferences are intended as an interface between the community that designs, develops, and operates space missions and the community of software, computing, and other information-technology practitioners who represent emerging capabilities of relevance and importance to space missions. The 24 papers here cover reliable software, autonomy and automation, cybersecurity and networks, small spacecraft and systems, reliable/software systems, autonomy and robotics, mission operations, and vision and human systems. Among specific topics are the case for software health management, a new approach to autonomous onboard mission replanning using orthogonal array design, programming models and development software for a space-based many-core processor, human-rating for automated and robotic systems, transforming the operations paradigm of space exploration, and large terrain modeling and visualization for planets. Only the authors are indexed.

PHYSICS

QC176 2010-050670 978-1-4398-1537-3
Optical techniques for solid-state materials characterization.
Title main entry. Ed. by Rohit P. Prasankumar and Antoinette J. Taylor.
CRC Press, ©2012 718 p. $129.95
Physicists and other scientists describe both basic and advanced experimental optical techniques that are commonly used to study materials. The goal is to provide enough information that researchers with different levels of experience can build and/or use a working setup, acquire data on both simple and complex materials, and analyze and interpret the data to obtain insight into fundamental material properties with minimal reliance on other sources. The topics include semiconductors and their nanostructures, carrier dynamics in bulk semiconductors and metals after ultra-short pulse excitation, time-resolved magneto-optical spectroscopy, near-field scanning optical microscopy, and recent developments in spatially and temporally resolved optical characterization of solid-state materials.

QC176 978-3-527-40894-8
Properties of interacting low-dimensional systems.
Gumbs, Godfrey and Danhong Huang.
Wiley-VCH, ©2011 379 p. $115.00
Physicists Gumbs (City U. of New York-Hunter College) and Huang (US Air Force Research Laboratory) introduce methods and other information for conducting or understanding research at the mesoscopic scale--between the quotidian and the atomic--where dwell such species as semiconductor heterojunctions, quantum dots and wires, carbon nanotubes, and atomic layers of graphene. Neither traditional physics nor single-particle Schröinger equations quite work here. The material is inspired by a lecture course they gave for many years to graduate students who had some background in basic quantum mechanics, statistical mechanics, and introductory solid state physics at the undergraduate level. It differs from similar textbooks by presenting a broad range of special topics as well as core chapters.

QC670 2011-011086 978-0-8218-5289-7
Mathematical and statistical methods for imaging; proceedings.
NIMS Thematic Workshop (2010: Inchon, Korea) Ed. by Habib Ammari et al. (Contemporary mathematics; v.548)
American Mathematical Society, ©2011 163 p. $69.00 (pa)
Drawn from papers delivered at the National Institute for Mathematical Sciences workshop on mathematical and statistical Methods for Imaging held in Incheon, Korea in August 2010, this collection of ten articles examines complex mathematics related to cutting edge digital imaging techniques. Topics discussed include resolution limits in source localization, path integrals and optical tomology, and attenuating acoustic media. Individual essays include abstracts, tables and formulas and are individually referenced. Author credentials are not provided.

QC763 2011-377864 978-3-527-40779-8
Multifrequency electron paramagnetic resonance; theory and applications.
Title main entry. Ed. by Sushil K. Misra.
Wiley-VCH, ©2011 1022 p. $200.00
The introduction begins: "In earlier days, electron paramagnetic resonance (EPR) was referred to as paramagnetic resonance (PMR), but today is also referred to as electron spin resonance (ESR) and, more recently--in analogy with nuclear magnetic resonance (NMR)--as electron magnetic resonance (EMR)." Editor Misra (physics, Concordia U., Canada has brought together contributed chapters offering full treatment of theoretical and practical aspects, and prospects for the future. Coverage includes both low and high frequency EPR, with emphasis on adopting the multi-frequency approach to study paramagnetic systems.

QC808 2011-377199 978-981-4293-74-7
Statistical methods of geophysical data processing.
Troian, Vladimir and Yurii Kiselev.
World Scientific, ©2010 436 p. $138.00
Studying the structure of the Earth and near-earth space generates massive volumes of data, from which random error and noise can never be eliminated completely, say Troian and Kiselev (both St. Petersburg State U., Russia), so probability-statistical methods must be used to analyze and interpret the geophysical information. They explain such methods in a textbook based on a course of lectures they have given for graduate students of geophysics for the past decade. Among their topics are basic concepts of probability theory, models of measurement data, statistical criteria for choosing a model, and tomography methods for recovering the image of medium. Computer exercises are appended.

CHEMISTRY

QD96 2011-008524 978-0-12-386984-5
Infrared and raman spectroscopy; principles and spectral interpretation.
Larkin, Peter.
Elsevier, ©2011 228 p. $115.00
Larkin has been using these and other imaging techniques for over 20 years to elucidate structure at specialty chemical and pharmaceutical companies. Infrared and Raman spectroscopy are completely complementary, providing characteristic fundamental vibrations that are extensively used to determine and identify molecular structure, he says, but are not widely used because potential users lack the necessary interpretation skills. It is that lacuna that he seeks to fill. His topics include basic principles, instruments and sampling methods, the origin of group frequencies, a general outline and strategies for interpretation, and unknown infrared and Raman spectra.

QD181 2011-377861 978-3-527-40859-7
Anomalous effects in simple metals.
Overhauser, Albert.
Wiley-VCH, ©2011 687 p. $170.00
Over the past seven decades, many monographs and textbooks have elaborated the anticipated

electric, magnetic, optical, and thermal properties of a simple metal<-->one of the alkali metals that possesses free-electron-like conduction electrons, and so a spherical Fermi surface. Over the past four decades, experiments have consistently violated those expectations. Overhauser (physics, Purdue U., Indiana) documents the many phenomena that do not fit the theory, and compiles reports of research by him and and his collaborators that has led to a unified synthesis of alkali metal peculiarities. Among the reprinted reports are mechanisms of anti-ferromagnetism in dilute alloys, the theory of the residual resistivity anomaly in potassium, open-orbit effects in thermal magnetoresistance, and broken symmetry in simple metals. No index is provided.

QD400 978-3-527-32706-5
Heterocycles in natural products synthesis.
Title main entry. Ed. by Krishna C. Majumdar and Shital K. Chattopadhyay.
Wiley-VCH, ©2011 637 p. $210.00
This collection of sixteen articles on heterocyclic reactions highlights current research in the synthesis of natural products using heterocycles. Topics discussed include Aziridines in natural product synthesis, epoxidesand oxetanes, furan, pyran, pyrrole and their derivatives, indoles and indolizidines, thiophen and other sulfer heterocycles and bioactive macrocyclic natural products. Chapters include numerous chemical formulas and equations. Contributors are chemists and materials scientist from universities and research facilities around the world.

QD415 2011-021605 978-1-4398-6076-2
Introduction to natural products chemistry.
Title main entry. Ed. by Rensheng Xu et al.
CRC Press, ©2012 363 p. $89.95
The Chinese original was published in 2006 by the Science Press of China as part of a series introducing modern chemistry to scientists and graduate students. It compiles the most important results of natural products chemistry in China. The topics are extracting and isolating natural products, the chemistry of fungal products, alkalopoids, sesquiterpenoids, diterpenes, saponins, amino acids and peptides, flavonoids, athraquinones, coumarins, other natural bioactive compounds, marine natural products, the structural modification of active principles from traditional Chinese medicine, and the chemical synthesis of natural products.

QD501 978-3-527-32329-6
Homogeneous catalysts; activity--stability--deactivation.
Van Leeuwen, Piet W.N.M. and John C. Chadwick.
Wiley-VCH, ©2011 404 p. $180.00
Although activation, deactivation, and regeneration of catalysts in heterogeneous catalysis has been a major area of study, and results have been published in accessible form, the same is not true for homogeneous catalysts. From the preface: “The approach in homogeneous catalysis is entirely different to that of heterogeneous catalysis, especially before industrial applications come into sight; in homogeneous catalysis, the general approach to improving the catalyst performance is variation of one of the catalytic components, without much attention being paid to the question of why other catalysis systems failed.” This volume brings together research hitherto scattered in the literature. Piet van Leeuwen is based in Spain, and John Chadwick is based in The Netherlands; both are or have been affiliated with Shell Research.

QD505 978-3-527-32271-8
Selective nanocatalysts and nanoscience; concepts for heterogeneous and homogeneous catalysis.
Title main entry. Ed. by Adriano Zecchina et al.
Wiley-VCH, ©2011 332 p. $215.00
While heterogeneous and homogeneous catalysis mainly followed separate development paths in the past, the recent work assembled here proves that they are strongly interconnected. The book describes several heterogeneous catalysts currently in use, then shows how nanoscience can be used with artificial homogeneous catalysts. Some chapter topics include the structure and reactivity of single and multiple sites on heterogeneous and homogeneous catalysts, the relationship between catalysis with transition metal complexes and catalysis by nanoparticles, synthetic catalysts of nanometric dimensions, and nanostructured photovoltaic materials for solar energy conversion. Chiral catalysts, selective catalysts for the petrochemical industry, and crystal engineering of metal-organic frameworks for heterogeneous catalysis are some other subject considered. The book is for catalytic and organic chemists and those working in organometallics. Zecchina directs the Center for Excellence in Nanostructured Surfaces and Interfaces at the University of Torino.

QD569 2011-010949 978-0-470-40690-8
Catalysis in electrochemistry; from fundamental aspects to strategies for fuel cell development.
Title main entry. Ed. by Elizabeth Santos and Wolfgang Schmickler. (Wiley series on electrocatalysis and electrochemistry; 3)
John Wiley & Sons, ©2011 516 p. $135.00
Each volume in the series focuses on a particular aspects of electrocatalysis and electrochemistry, always with an eye out for commercial applications. The 14 studies here include discussions of the dynamics and stability of surface structures, the catalysis of electron transfer at metal electrodes, electrocatalysis at bimetallic surfaces obtained by surface decoration, carbon monoxide adsorption on platinum electrodes, electrocatalysis at liquid-liquid interfaces, and the impact of electrochemical science on energy problems.

QD801 978-1-4398-4206-5
Handbook on applications of ultrasound; sonochemistry for sustainability.
Title main entry. Ed. by Dong Chen et al.
CRC Press, ©2012 709 p. $189.95
For chemists, Chen (engineering, Indiana U.-Purdue U. Fort Wayne) et al. compile 26 chapters on the use of ultrasound in industrial, agricultural, and environmental processes for better sustainability and to lower the number of hazardous chemicals and solvents, reduce energy consumption, and increase product selectivity. A global group of chemists, engineers, and other scientists discuss applications in medicine, drug and gene delivery, nanotechnology, food technology, polymer chemistry, anaerobic digestion, synthetic applications and organic chemistry, industrial syntheses and processes, environmental contaminants degradation, reactor design, electrochemical systems, and combined ultrasound-microwave technologies.

BIOLOGY

QH324 978-1-907568-10-7
Concepts and techniques in genomics and proteomics.
Saraswathy, Nachimuthu and Ponnusamy Ramalingam. (Series on pharma, biotech and biosciences; v.10)
Biohealthcare Publishing, ©2011 242 p. $115.00
The intent is a basic text for undergraduate and postgraduate students in biotechnology as well as researchers in other fields. Material is arranged in chapters beginning with a basic introduction to genes and genomes, discussion of the human genome project, model organisms, high capacity vectors, DNA sequencing methods, genome mapping and sequencing methods, and genome sequence assembly and annotation. Following are chapters on functional genomics, proteomics, two-dimensional gel electrophoresis of proteins, mass spectrometry for proteomics, protein identification by peptide mass fingerprinting, protein sequencing techniques, phosphoproteomics, and glycoproteomics. Each chapter concludes with review questions and answers. The two authors are affiliated with Kumaraguru College of Technology, India. The volume is distributed in North America by BookMasters.

QH324 2010-052304 978-1-60960-557-5
Feature selection and ensemble methods for bioinformatics; algorithmic classification and implementations.
Okun, Oleg.
Medical Information Science Reference, ©2011 445 p. $245.00
Okun (SMARTTECCO, Malmo, Sweden) offers a reference guide on machine learning aspects of one of the functions of bioinformatics, microarray gene expression-based cancer classification. The author notes that his book is unique in that it covers three topics that are not typically combined: machine learning, bioinformatics, and MATLAB. A sampling of topics includes gene expression data sets, extreme value-based gene selection, evolutionary algorithm for identifying predictive genes, ensembles of classifiers, and ensemble gene selection. The book also could be used as a textbook.

ENGINEERING (GENERAL, CIVIL)

TA1 978-0-7277-4143-1
The civil engineers; the story of the Institution of Civil Engineers and the people who made it.
Ferguson, Hugh and Mike Chrimes.
ICE Publishing, ©2011 262 p. $60.00
The Institution of Civil Engineers, UK, with which Ferguson and Chrimes have long been affiliated, is the oldest professional engineering institution. Drawing on its extensive archives, they present a well-illustrated history of civil engineering and leading role of ICE in the profession, from a meeting at a London coffee house in 1818 to such major modern projects as the Channel Tunnel and a global membership network. In landscape format, the volume includes color images of ICE presidents and secretaries, ICE buildings, project drawings, and a further reading list.

TA153 978-1-84569-398-5
Service life estimation and extension of civil engineering structures.
Title main entry. Ed. by Vistasp M. Karbhari and Luke S. Lee. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 301 p. $210.00
Civil engineers discuss using fiber-reinforced polymer composites to rehabilitate and retrofit concrete structures, to extend the service life of corroded concrete structures, and rehabilitate and estimate the life of bridge superstructures. They also consider areas of uncertainty in using the material in such application. Then they survey techniques for estimating the service life of civil engineering structures from perspectives of probabilistic methods, non-destructive testing and evaluation, health monitoring and field validation, databases and knowledge-based systems, and pipeline rehabilitation systems.

TA166 978-0-415-67573-4
Contemporary ergonomics and human factors 2011.
Title main entry. Ed. by Martin Anderson.
CRC Press, ©2011 510 p. $139.95 (pa)
This volume contains the proceedings of the April 2011 annual international conference of the Institute of Ergonomics & Human Factors in the UK. Seventy papers are presented in sections devoted to: human factors in industrial accidents, making safety culture work, ergonomics in education, designing transport systems for users and operators, usability of military equipment, human factors in modern manufacturing, ergonomics in future computer use, health care and aging, user centered design and evaluation of medical devices, green ergonomics, the 24 hour society, cross sectors, safety, human factors integration, and maps. Five posters are also included.

TA167 2010-038955 978-0-7546-7580-8
The handbook of human-machine interaction; a human-centered design approach.
Title main entry. Ed. by Guy A. Boy.
Ashgate Publishing Co., ©2011 455 p. $124.95
The field of human-machine interaction (HMI), as Boy (director, Human-Centered Design Institute, Florida Institute of Technology) describes it, "attempts to rationalize relevant attributes and categories that emerge from the use of (computerized) machines." It focuses on principles of safety, performance, comfort, and aesthetics in relation to human physical, cognitive, social, and emotional factors. He presents 20 chapters that discuss approaches, methods, and tools for understanding HMI in the context of design and propose a human-centered design approach that is an upstream process that enables a design team to incorporate human requirements into the design of a system through the application of Boy's "AUTOS pyramid," relating the entities of Artifact (system), User, Task, and Organizational Environment. Twenty chapters discuss this system as well as other perspectives on human-machine interaction as they concern methods and tools for human-centered design and engineering. They are organized into sections on analysis, design and engineering, and evaluation.

TA169 2010-046368 978-0-470-92975-9
Concise encyclopedia of system safety; definition of terms and concepts.
Ericson, Clifton A.
John Wiley & Sons, ©2011 517 p. $99.95
System safety is an engineering discipline that is applied during system design and development of a product or system in order to identify hazards and reduce the risk of accidents. System safety is used in fields such as commercial aircraft, nuclear power plants, weapon systems, and medical devices. This reference for system safety engineers, analysts, and managers begins with a definition of system safety and a rationale for its use and guidelines for when system safety should be applied, costs of system safety, and a history of the field. Alphabetical entries give definitions, explanations, and examples of system safety terms and concepts. Most entries are about a paragraph long, with some a full page and some only one sentence. There is also a section of the book reviewing system safety specialty areas; much of the information in this section is in outline format. The book includes b&w diagrams and tables and a list of acronyms. Ericson, editor of the *Journal of System Safety*, was president of the System Safety Society 2001-2003.

TA170 2011-007298 978-1-4129-9692-1
Green technology; an A-to-Z guide.
Title main entry. Ed. by Dustin Mulvaney. (The Sage reference series on green society; toward a sustainable future; 10)
Sage Publications, ©2011 524 p. $110.00
This large reference encyclopedia provides detailed articles on a wide range of green technologies in several interest areas including renewable energy, non-polluting transportation, and sustainable building processes. Entries range from explanations of specific materials such as solar-voltaic cells, to conceptual

essays on topics such as the arms race or technological determinism. The volume includes a chronology of green technologies as well as a reader's guide that lists entries by topic groupings. Individual entries include illustrations and recommendations for further reading. The contributors are academics from American and European universities as well as independent scholars from a variety of disciplines.

TA350 978-3-03785-163-0
Coupled problems and multi-physics.
Title main entry. Ed. by Moussa Karama. (Advanced materials research; v.274)
Trans Tech Publications, ©2011 121 p. $124.00 (pa)
Containing only invited peer reviewed papers, this collection of twelve contributions on coupled problems and simulation of multi-physics issues contains frequent figures and equations. Although this area of research has traditionally been associated with aircraft engineering, several of the pieces cover other areas such as design optimization, drilling fluids, and river sedimentation.

TA355 2011-026782 978-1-4398-3455-8
Modeling and control in vibrational and structural dynamics; a differential geometric approach.
Yao, Peng-fei. (Chapman & Hall/CRC applied mathematics and nonlinear science series)
CRC Press, ©2011 405 p. $99.95
The differential geometrical approach was introduced more than a decade ago, says Yao (Chinese Academy of Science, Beijing), and since then there have been many developments in its use with vibrational and structural dynamics. He presents a systematic and up-to-date account, focusing on using the approach when the coefficients of the partial differential equations are variable in space, when the partial differential equations themselves are defined on curved surfaces, and when the systems have quasilinear principal parts. He includes the core material from the Chinese *Introduction to Riemannian Geometry* to make the book self-contained.

TA357 2011-018476978-1-84821-262-6
Statistical approach to wall turbulence.
Tardu, Sedat.
ISTE/Wiley, ©2011 312 p. $145.00
Writing primarily for master's and doctoral students, Tardu (Grenoble U., France) synthesizes the current knowledge about turbulence in flows bounded by solid barriers from a statistical perspective. He covers basic concepts; phenomenology, closure, and fine structure; inner and outer scales: spectral behavior; effects based on Reynolds number; and vorticity.

TA417 978-3-03785-165-4
Dynamics of the structures and non destructive testing.
Title main entry. Ed. by Moussa Karama. (Key engineering materials; v.482)
Trans Tech Publications, ©2011 100 p. $124.00 (pa)
Destructive and non-destructive testing of composite and nano-composite materials, as well as refractory alloys, has become more important as their use has increased in structural engineering. The ten papers gathered here focus on the traditional topics of reliability and resistance to degradation, as well as newer topics such recyclability and biodegradability. Containing only invited peer reviewed papers, this collection of pieces contains frequent black and white photographs and figures. The spine and cover omit "the" from the title.

TA418 978-3-03785-159-3
Advances in structures analysis.
Title main entry. Ed. by Moussa Karama. (Applied mechanics and materials; v.61)
Trans Tech Publications, ©2011 99 p. $123.00 (pa)
Mechanical engineers, materials scientists, and others present 12 invited peer-reviewed papers on recent developments in analyzing the structural integrity of materials, components, and structures. Among their topics are optimizing by the reliability of the damage by tiredness of a wire rope of lifting, a multi-scale analysis of materials reinforced by inclusions randomly oriented in the ply plane, non-destructive testing methods applied to detect cracks in the hot section of a turbojet, and simulating the thermo-mechanical behavior of structures by the numerical resolution of the direct problem.

TA418 978-1-84569-513-2
Fracture and fatigue of welded joints and structures.
Title main entry. Ed. by Kenneth A. Macdonald. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 338 p. $230.00
Contributors in mechanics, materials, and construction explore aspects of current fracture and fatigue research that are important to general concepts of designing welded strictures to avoid failure, and the ongoing assessment of the condition of structures and plants in service. Taking fracture and fatigue in turn, they consider such topics as test methods for

constraint fracture mechanics, using fracture mechanics in the fatigue analysis of welded joints, the fatigue strength assessment of local stresses in welded joints, improving weld class systems in assessing the fatigue life of different welded joint designs, fatigue assessment methods for variable amplitude loading of welded structures, and assessing residual stresses in predicting the service life of welded structures.

TA418 2011-015217 978-0-470-62607-8
Handbook of bioplastics and biocomposites engineering applications.
Title main entry. Ed. by Srikanth Pilla.
John Wiley & Sons, ©2011 588 p. $195.00
Responding to the impending depletion of cheap petroleum and the mountains of discarded plastic made from it, scientists have been exploring plastics that are made from biological sources and are biodegradable. Materials scientists and engineers here present an applications-oriented reference. They cover processing, and applications in packaging, civil engineering, biomedical engineering, and general engineering. Among specific topics are the handling of various forms of dry ingredients in bioplastics manufacturing and processing applications, polyvinyl-modified guar-gum bioplastics for packaging applications, starch as a biopolymer in construction and civil engineering, chitin and chitosan polymer nanofibrous membranes and their biological applications, and nanocomposites based on starch and fibers of natural origin.

TA418 2011-013472 978-0-470-48760-0
Hybrid nanomaterials; synthesis, characterization, and applications.
Title main entry. Ed. by Bhanu P. S. Chauhan.
John Wiley & Sons, ©2011 334 p. $115.00
Three dimensions of hybridity are considered in this volume: organic/inorganic components, heterogeneous/homogeneous catalysis, and hard and soft materials. Scientists and engineers in chemistry, materials, and pharmaceuticals who developed the materials discuss their discoveries and project future applications. Their topics include hybrids from polymer colloids and metallic nanoparticles as a novel type of green catalysis, the design and synthesis of nanohybrid systems based on a silicon-oxygen bond, nanocrystalline magnesium oxide for asymmetric organic reactions, biomedical multimodality in small solid core nanoparticles, liposomes containing polydiacetyline as sensory materials, and the block-copolymer-templated synthesis of ordered silicas with closed mesopores.

TA418 978-1-84569-670-2
Nanostructured metals and alloys; processing, microstructure, mechanical properties and applications.
Title main entry. Ed. by Sung H. Whang. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 803 p. $305.00
Materials scientists offer a broad handbook on nanostructured metallic materials for structural applications. The topics include bulk nanostructured metals and alloys produced by accumulative roll-bonding, severe plastic deformation and producing nanostructured alloys by machining, deformation structures including twins in nanograined pure metals, characteristic structures and properties of nanostructured metals prepared by plastic deformation, strengthening mechanisms in nanocrystalline metals, the mechanical behavior of nanostructured metals based on molecular dynamics computer simulations, processing nanostructured metal and metal-matrix coatings by thermal and cold spraying, and applying nanostructured steel sheets to automotive body structures.

TA418 978-1-84569-761-7
Polymer-carbon nanotube composites; preparation, properties and applications.
Title main entry. Ed. by Tony McNally and Petra Pötschke. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 820 p. $245.00
The composites have been well studied since the turn of the century, but until now there has been no single-volume comprehensive reference on making, analyzing, and using them. Taking the three steps in turn, materials scientists discuss such aspects as the surface treatment of carbon nanotubes with plasma technology, elastomer-carbon nanotube composites, mechanical properties of polymer-polymer-grafted carbon nanotube composites, the rheology of polymer-carbon nanotube composite melts, fibers, and biomedical and bioengineering applications.

TA418 978-3-03785-099-2
Recent trends in materials and mechanical engineering materials, mechatronics and automation; 3v.
International Conference on Recent Trends in Materials and Mechanical Engineering (2011: Shenzhen, China) Ed. by Qi Luo. (Applied mechanics and materials; vs.55-57)
Trans Tech Publications, ©2011 2265 p. $552.00 (pa)
This three-volume set collects selected, peer-reviewed papers from a January 2011 conference held in Shenzhen, China. The conference

provided a forum for researchers, educators, engineers, and government officials involved in materials and mechanical engineering to disseminate research results and exchange views on future research directions. Volume 1 is dedicated to material engineering and mechanical engineering, with chapters on topics such as swelling and deswelling of a PH/thermosensitive hydrogel, techno-economic analysis of magnetic treatment of cobalt concrete, a plasticity model of extruded peanuts under mechanical pressing, and face image segmentation using a color information and saliency map. Volume 2 covers manufacturing and production processes, discussing areas such as design of a fiber-optic MEMs acoustic sensor system, a product life-cycle energy-consumption analysis method used in remanufacturing, and medical staff incentive mechanisms in China. Volume 3 describes automotive engineering and industry applications in areas such as trust analysis in social network community research, preparation and characterization of polypropylene/clay nanocomposites, and features extraction for printed numerals based on geometric properties.

TA418 2011-929804 978-1-84569-753-2
Superplastic forming of advanced metallic materials; methods and applications.
Title main entry. Ed. by Gillo Giuliano. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 369 p. $230.00
Superplasticity is an exceptional ductility that some metals with fine and stable grain size display under deformation at specific temperatures and strain rates. The feature can be exploited to manufacture products with complex forms in a single operation. Here materials scientists and mechanical engineers, but also researchers in dentistry and automobiles, examine superplastic forming methods, modeling superplastic forming, and applications. Among specific topics are standards for the superplastic forming of metals, using laser surface modification in combined superplastic forming and diffusion bonding of metals, the finite element modeling of thin metal sheet forming, predicting instability in the superplastic forming of metals, superplastic forming and diffusion bonding of titanium alloys, and superplastic micro-tubes fabricated by dieless drawing processes.

TA418 978-1-84569-658-0
Thermal barrier coatings.
Title main entry. Ed. by Huibin Xu and Hongbo Guo. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 339 p. $230.00
Materials scientists and mechanical engineers explain how the coatings, along with internal cooling of superalloy components, can allow aircraft and industrial engines to operate at a temperature above the melting point of the superalloy. They cover materials and structure, processing and spraying techniques, and the performance of thermal barrier coatings. Specific topics include ceramic thermal barrier coating materials, nanostructured coatings, manufacturing thermal barrier coatings by electron beam physical vapor deposition, plasma-sprayed thermal barrier coatings with segmentation cracks, the non-destructive evaluation of failure, and life prediction.

TA418 2011-932611 978-1-84569-736-5
Thin film growth; physics, materials science and applications.
Title main entry. Ed. by Zexian Cao. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 416 p. $245.00
Physicists, materials scientists, and engineers offer perspectives on the theory and techniques of thin film growth. Their topics include measuring nucleation and growth processes, analyzing the evolution of surface roughness, modeling thin film deposition processes based on real-time observation, phase transition in colloidal crystal thin films, thin film growth for thermally unstable noble-metal nitrides by reactive magnetron sputtering, electronic properties and adsorption behavior of thin films with polar character, understanding substrate plasticity and buckling of thin films, the electrocaloric effect in ferroelectric polymer films, and network behavior in thin films and nanostructure growth dynamics.

TA418.9 978-1-4398-4176-1
Computational nanotechnology modeling and applications with MATLAB.
Title main entry. Ed. by Sarhan M. Musa. (Nano and energy series)
CRC Press, ©2012 513 p. $139.95
Electronic and computer engineers, chemists, and other contributors explore some of the computational aspects of manipulating materials on the nanometer scale. Their topics include the computational modeling of nanoparticles, a numerical integrator for continuum equations of surface growth and erosion, computational and

experimental approaches to cellular and subcellular tracking at the nanoscale, modeling reversible protein conjugation on a nanoscale surface, and computational technology in nanomedicine.

TA658 2011-377213 978-1-84816-477-2
Optimization and anti-optimization of structures under uncertainty.
Elishakoff, Isaac and Makoto Ohsaki.
Imperial College Press, ©2010 402 p. $127.00
Mechanical engineers Elishakoff (Florida Atlantic U.) and Ohsaki (Kyoto U.) explore approaches to design that incorporate or avoid optimization under unknown-but-bounded uncertainty. They cover optimization as making the best in the presence of certainty/uncertainty; a general formulation of anti-optimization; anti-optimization in static problems, buckling, and vibration; anti-optimization through interval analysis based on the finite-element method; anti-optimization and probabilistic design; and hybrid optimization and anti-optimization under uncertainty or making the best out of the worst. Distributed in the US by World Scientific Publishing.

TA706 2011-379778 978-0-7277-4083-0
Rock engineering.
Palmström, Arild and Hakan Stille.
Thomas Telford, ©2010 408 p. $130.00
Palmström, with a Norwegian company, and Stille (Royal Institute of Technology, Sweden) provide descriptions of rockmasses, with illustrations, in order to strengthen the link between engineering geology<-->which collects characteristics of the site condition<-->and rock mechanics<-->which collects relevant and sufficient information on the ground then selects appropriate rock engineering tools to design the tunnel or other opening being planned. They do not cover all aspects and details, but focus on the interaction between engineering geology and rock design rather than on excavation methods. They assume readers are experienced in underground rock excavations as engineering geologists, rock engineers, excavators, or graduate students in these fields.

TA1230 2011-020212 978-1-84821-279-4
Human-computer interactions in transport.
Title main entry. Ed. by Christophe Kolski.
ISTE/Wiley, ©2011 375 p. $145.00
This collection of eleven articles on human computer interaction highlights current research in integrated computing systems for both public and personal transportation. Topics discussed include traveler information systems for urban subway and bus systems, user needs analysis methodologies, personalized interactive systems, human-machine co-operation in automotive copilot systems, hands-free multimedia control processes and travel time and its computing potential. Individual chapters include illustrations, tables and black and white photographs. The contributors are French, Algerian and American academics in computer science and engineering fields.

ENVIRONMENTAL TECHNOLOGY

TD887 2011-013242 978-0-89448-043-0
Transport and removal of aerosols in nuclear power plants following severe accidents.
Sher, Rudolph and Richard R. Hobbins.
American Nuclear Society, ©2011 218 p. $70.00
This volume provides a summary of the physical, chemical, and thermodynamic phenomena taking place in nuclear reactor cores during the progression of reactor accidents; the formation and physical and chemical properties of the resulting radioactive aerosols; the timing and duration of the aerosol release from the core to the coolant system and containment; and the physical, chemical, and thermal-hydraulic phenomena that govern the removal of aerosols within the containment or other plant volumes through natural or engineered processes. The emphasis is on light water reactors, although much of the material has wider applicability.

TD898 978-1-84569-626-9
Handbook of advanced radioactive waste conditioning technologies.
Title main entry. Ed. by Michael I. Ojovan. (Woodhead Publishing series in energy; no.12)
Woodhead Publishing, ©2011 488 p. $265.00
Materials scientists, chemists, and power engineers explore some current and possible avenues for dealing with the radioactive waste that nuclear power plants produce. They cover characterizing radioactive waste and selecting processing technologies, compaction, incineration and plasma processes, inorganic cements to condition and immobilize waste, calcination and vitrification, the historical development of glass and ceramic forms for high-level radioactive wastes, generating and managing radioactive and other wastes while decomissioning nuclear facilities and environmental remediation, geopolymers, glass matrices, ceramic matrices, the French experience

with waste packages, metal containers, the failure of storage mechanisms, long-term behavior models, and knowledge management for radioactive waste management organizations.

TD899 2010-029540 978-0-8247-9106-3
Remediation of former manufactured gas plants and other coal-tar sites.
Hatheway, Allen W.
CRC Press, ©2012 1354 p. $199.95
This book constitutes an extraordinary resource for industry professionals concerned with clean-up, which is crucial to sustaining the environment. Hatheway had an active career in many capacities, then retired early after a couple decades teaching geological engineering at the School of Mines and Metallurgy of the U. of Missouri-Rolla; but he didn't just go fishing. Instead, having long been frustrated by the lack of "definitive answers to real questions about site and waste characterization and remedial engineering of manufactured gas plants" (his words, from the introduction), he devoted 13 years to visiting and studying more than 900 coal-tar sites in North America and Britain. He methodically compiled information, and the result is this hefty volume that will no doubt serve as an indispensable reference for years to come. Coverage is encyclopedic, encompassing the history of manufactured gas and coal-tar activities, details of manufacturing processes, sources and mechanisms (and choices) responsible for site contamination, and details of the remediation process.

TG300 978-0-415-68415-6
Modern techniques in bridge engineering.
Title main entry. Ed. by Khaled M. Mahmoud.
CRC Press, ©2011 323 p. $159.95
Increasing traffic loads, deterioration of bridges, and the need to maintain bridges without disrupting vital economic and social activities were some of the issues addressed at the Sixth New York Bridge Conference, in July 2011. In 26 papers selected from the presentations there, bridge engineering practitioners, researchers, owners, and contractors from all over the world look at cable-supported bridges, bridge analysis and design, innovative bridge technology, bridge rehabilitation and retrofit, bridge replacement and construction, bridge management and monitoring, and historic bridges. Among the topics are the cable-stayed bridge across the River Sava in Belgrade, incorporating climate change predictions in the hydraulic analysis of bridges, new tools for inspecting gusset plates, deck truss bearing rehabilitation for the Benjamin Franklin Bridge, the rapid replacement of bridges using modular systems, identifying and sharing best practices in bridge maintenance and management, and examining the forms of Hudson River bridges. Only authors are indexed.

MECHANICAL ENGINEERING & MACHINERY

TJ163 2011-025620 978-0-07-174552-9
Handbook of energy engineering calculations.
Hicks, Tyler G.
McGraw-Hill, ©2012 736 p. $125.00
Some 2,500 calculations procedures in energy engineering are presented in both the US customary system (USCS) and the System International (SI) so that engineers and designers worldwide will find familiar units for each calculation. Some of the calculations are unique, provided by the team of contributors, and some come from published sources. Most of the chapters focus on a particular energy source, such as steam, gas-turbine, nuclear, wind, solar, and ocean. Other topics include energy conversion, internal-combustion engine energy analysis, heat transfer and energy conservation, fluid transfer, interior climate control energy economics, and energy conservation and environmental pollution control. A detailed index allows access to particular calculations.

TJ211 978-90-5850-651-1
Technologies on the stand; legal and ethical questions in neuroscience and robotics.
Title main entry. Ed. by Bibi van den Berg and Laura Klaming.
Wolf Legal Publishers, ©2011 422 p. $45.00 (pa)
This volume originates out of an eponymous April 2011 conference held at Tilburg U., the Netherlands. It contains 19 papers dealing with a range of topics from the fields of law and ethics as they relate to neuroscience, on the one hand, and robotics on the other. Broadly speaking, topics addressing law, ethics, and neuroscience include the role of neuroscience in assessing the responsibility of a suspect in a criminal trial, legal issues raised by using neuroscience in the courtroom, and the question of using neuroscience for enhancement and related legal and ethical issues. Topics associated with the fields of law, ethics, and robotics include foundations of roboethics, ethics and the design of robots (including the implementation of ethics

or morality in robots), and legal issues in robotics.

TJ755 978-1-84569-715-0
Diesel engine system design.
Xin, Qianfan. (Woodhead Publishing in mechanical engineering)
Woodhead Publishing, ©2011 1038 p. $330.00
The subject is becoming increasingly important because of the diesel engine's potential for superior fuel efficiency and reliability. It's also complex and multifaceted, involving many people. Xin works in private industry as a specialist in diesel engine system design, and one reason he wrote this text is to mitigate the disconnect between academic experiences and the work place. Another reason was the need for a comprehensive reference that gathers information scattered in the literature of company reports, journals, and even the oral accounts of engineers. The author also wanted to present a unified and systematic theory about diesel engine system design that would be useful to people in various areas of the organization and would facilitate collaboration. This volume begins with an extensive listing and decoding of nomenclature and of abbreviations and acronyms. Coverage begins with fundamental concepts and continues with the engine thermodynamic cycle and vehicle powertrain performance; dynamics, friction, and noise, vibration and harshness; and heat rejection, air system engine controls, and system integration.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK152 2011-286400 978-0-470-62589-7
Handbook of international electrical safety practices.
Title main entry. Ed. by Princeton Energy Resources International.
John Wiley & Sons, ©2010 721 p. $195.00
This reference edited by Princeton Energy Resources International (PERI) is intended for the electricity generation, power transmission, and distribution sectors of the energy industry. It is a collection of best international practices for safe handling operations and is intended as a desk reference for technicians, engineers, supervisors, line personnel, business managers, and other industry professionals. It covers a wide range of topics concerning physical, chemical, thermal, energizing, and other hazards that might be confronted in transmission systems and energizing sources<-->and provides information on evaluating and developing site-specific safety and health programs. More than a rehashing of regulations and laws, the handbook offers a functional framework for creating a safe industrial environment. Eight PERI staff members contributed to the book. While technical, the book is clearly written and well-formatted for quick reference.

TK1541 2010-045226 978-0-470-59365-3
Power conversion and control of wind energy systems.
Title main entry. Ed. by Bin Wu et al. (IEEE Press series on power engineering; 74)
Wiley-IEEE Press, ©2011 453 p. $110.00
For academic researchers, practicing engineers, consultants, and undergraduate and advanced graduate students, Wu (electrical and computer engineering, Ryerson U., Canada) et al. explore the power conversion and control of wind energy conversion systems (WECS) from an electrical engineering perspective, analyzing wind generators, system configurations, power convertors, control schemes, and dynamic/steady-state performance of various practical systems. They discuss market survey, wind turbine technology, system classifications, costs, and grid codes for wind power integration; the fundamentals of systems; commonly used generators; and various power convertors and characteristics of major WECS, including fixed-speed induction generators, variable-speed squirrel cage induction generators, doubly fed induction generators, and synchronous generator based systems. Case studies and solved problems are provided.

TK3001 2011-003205 978-1-84821-245-9
Electrical distribution networks.
Title main entry. Ed. by Nouredine Hadjsaid and Jean-Claude Sabonnadiére.
ISTE/Wiley, ©2011 492 p. $195.00
Traditional electricity distribution networks are ill-equipped to meet the challenges of a new generation of sustainable and renewable power now mandated by many governments and demanded by citizens. They were simply not designed to handle decentralized energy production from randomly located and intermittent energy sources like wind, solar, geothermal, and others. This book offers a comprehensive and thorough exploration of both theoretical and practical tools needed for a new "intelligent energy network," typically referred to as a smart grid. Topics include overviews of distribution networks and decentralized energy production, impacts of distributed generation on the electrical network, photovoltaic and wind turbine systems

and grid integration, reliability, load control, fault detection and protection, power electronics, and virtual power systems for active networks. The book should particularly interest researchers and engineers involved in the development of the new, more flexible and reliable distribution system of the future. Editors Hadjsaid (director, IDEA, France), Sabonnadiére (emeritus, National Polytechnic Institute of Grenoble, France), and 26 authors contributed to the book.

TK5102 2011-003217 978-1-61520-925-5
Signal processing, perceptual coding, and watermarking of digital audio; advanced technologies and models.
He, Xing.
Information Science Reference, ©2012 192 p. $195.00
He (SRS Labs) proposes a psychoacoustic model for digital perceptual audio coding and digital audio watermarking. The model takes advantage of the flexibility of discrete wavelet packet transform (DWPT) decomposition to closely approximate the critical bands and allows precise masking thresholds, resulting in increased inaudible spectrum and reduction of sum to signal masking ratio (SSMR). The final chapter presents a fast and robust synchronization algorithm for watermarking which exploits the consistency of the signal energy distribution under varying transformation conditions and uses matched filter detection to determine the precise watermark location.

TK5103 2010-022641 978-1-4200-8812-0
Mobile opportunistic networks; architectures, protocols and applications.
Title main entry. Ed. by Mieso K. Denko.
CRC Press, ©2011 278 p. $119.95
Denko (deceased, computing and information science, U. of Guelph, Canada) and is co-authors provide an overview of current research findings, technologies, tools, and innovations in mobile opportunistic networks, said to be one of the most promising technologies for the next generation of mobile technologies. Topics include the state of the art in modeling mobile opportunistic networks, opportunistic routing for load balancing and reliable data dissemination, quality of service, effective file transfer, and connection enhancement. The book should be considered a technical guide for engineer, scientists, practitioners, graduate students, and researchers.

TK5105 2011-007852 978-0-470-74915-9
Cooperative networking.
Title main entry. Ed. by Mohammad Obaidat and Sudip Misra.
John Wiley & Sons, ©2011 330 p. $125.00
This collection of fourteen articles on cooperative networking showcases current scholarship in the interaction of telecommunications networks through a wide variety of emerging technologies such as ad hoc, peer-to-peer, and sensor networks. Topics discussed include cooperation in autonomous vehicular networks, cooperation in wireless ad hoc and sensor networks, overlay networking for streaming multimedia content, access selection in ambient networks and cooperative caching for chip multiprocessors. Individual papers include illustrations, diagrams and formulas. The contributors are computer scientists and telecommunications engineers from universities and research firms around the world.

TK5105 2011-006282 978-1-58714-127-0
Enterprise network testing.
Sholomon, Andy and Tom Kunath.
Cisco Press, ©2011 599 p. $65.00
Network consulting engineer Sholomon and solutions architect Kunath, both with Cisco, explain structured system testing to network professionals, and how to use it to test complex network systems and technologies. The book could be read cover-to-cover, they say, but it is intended mostly as a reference that readers skip around in to find information relevant to a particular project or problem. Among their topics are testing and laboratory strategy development, proof of concept testing case study, migration plan testing cast study, a plan to test the firewall in an inter-organization secure data center interconnection, IPv6 functionality test plan, and using the laboratory for hands-on technology training.

TK5105 2011-017832 978-1-60960-794-4
Performance and dependability in service computing; concepts, techniques and research directions.
Title main entry. Ed. by Valeria Cardellini et al.
Information Science Reference, ©2012 477 p. $195.00
Computer scientists from many parts of the world describe recent efforts and achievements in overcoming problems and limitation associated with the service-oriented computing paradigm. Their topics include dependability modeling, service-oriented collaborative business processes, the performance management of composite applications in service-oriented architectures, a

game-theory solution for the optimal selection of services, the performability evaluation of web-based services, building web services with time requirements, engineering secure web services, and detecting vulnerabilities in web services.

TK5105 2011-010645 978-0-12-385965-5
Semantic web for the working ontologist; effective modeling in RDFS and OWL, 2d ed.
Allemang, Dean and Jim Hendler.
Morgan Kaufmann Pub., Inc., ©2012 354 p. $54.95 (pa)
Allemang, a scientist at a company that consults, trains, and provides products for the Semantic Web, and Hendler (computer and cognitive science, Rensselaer Polytechnic Institute) explain how web developers who are practitioners in another field, such as health care, finance, engineering, national intelligence, and enterprise architecture, can model data to fit the requirements of the Semantic Web. They detail how to construct semantic models, with a focus on the use of RDF (Resource Description Framework), RDFS (RDF schema), and OWL (Web Ontology Language) to accomplish specific tasks and model data and domains. This edition has been updated to incorporate new technologies such as SPARQL (SPARQL Protocol And RDF Query Language), OWL 2.0, and SKOS (Simple Knowledge Organization System). They include examples of Quantities, Units, Dimensions, and Types (QUDT) and The Open Biological and Biomedical Ontologies (OBO), as well as examples of how to use the Semantic Web to solve common modeling problems and a FAQ section on challenges.

TK7870 2011-927290 978-1-84569-576-7
Advanced adhesives in electronics; materials, properties and applications.
Title main entry. Ed. by M.O. Alam and C. Bailey. (Woodhead Publishing in materials)
Woodhead Publishing, ©2011 268 p. $210.00
Eight studies describe types of adhesives used in electronic devices and their processing and properties. Researchers in mathematics, computing, and electronics discuss such topics as anisotropic conductive adhesives in electronics, underfill adhesive materials for flip chip applications, the structural integrity of metal-polymer adhesive interfaces in microelectronics, modeling techniques used to assess conductive adhesive properties, and adhesive technology for photonics.

TK7871 2011-021212 978-1-84821-307-4
Compact antennas for wireless communications and terminals; theory and design.
Title main entry. Ed. by Jean-Marc Laheurte.
ISTE/Wiley, ©2011 245 p. $125.00
Specialist engineers and researchers examine microwave antennas and more specifically planar versions, which are the types of antenna preferred at microwave frequencies in modern integrated communication systems. They explain the principles of planar and/or small volume antennas, problems of design and manufacture, and constraints and limitations presented by the antenna within the body of the communication system. Among specific topics are the transmission line model, electrical equivalent circuit of a printed antenna, circularly polarized antennas, and reconfigurable antennas.

TK7871 978-1-60807-143-2
Plasma antennas.
Anderson, Theodore. (Artech House antennas and propagation series)
Artech House, ©2011 203 p. $109.00
Anderson (founder, CEO, and principal investigator for Haleakala Research and Development, Inc.) presents comprehensive coverage of the emerging technology of plasma antennas. Plasma antennas utilize ionized gas as a conductor rather than metal resulting in a highly efficient and adaptable antenna. Topics discussed include plasma antenna physics, fundamental theory, building a basic plasma antenna, nesting, stacking, arrays, reduction of cosite interference, plasma antenna windowing, plasma frequency selective surfaces, plasma antenna thermal noise, and more. With a section covering basic plasma physics, this book is a useful resource for students and professionals alike.

TK7871 2011-286648 978-1-84816-491-8
Ultrawideband antennas; design and applications.
Title main entry. Ed. by Daniel Valderas et al.
Imperial College Press, ©2011 194 p. $90.00
Now that unlicensed commercial ultrawideband systems are legal and proliferating, Spanish and Chinese electrical engineers describe aspects of designing antennas to pick up the signals in a range of particular applications. Their topics include monopole antenna analysis, bandwidth synthesis and maximization, folded monopole antennas, revolution monopole antennas, and printed circuit monopoles. Among the applications are communications, measuring electromagnetic waves, detecting breast cancer, and radar. Distributed in the US by World Scientific.

TK7875 2011-009635 978-0-470-97869-6
Digital holography for MEMS and microsystem metrology.
Title main entry. Ed. by Anand Asundi. (Microsystem and nanotechnology)
John Wiley & Sons, ©2011 205 p. $110.00
Indian and Chinese engineers, most of them working in optics or optoelectronics, explore issues related to micro-measurement with a specific focus on micro-devices and micro-electro-mechanical systems (MEMS) for which digital holography is best suited. They cover digital reflection holography and applications, digital transmission holography and applications, digital in-line holography and applications, and other applications.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL221 2011-002521 978-0-470-74773-5
Hybrid electric vehicles; principles and applications with practical perspectives.
Mi, Chris et al.
John Wiley & Sons, ©2011 448 p. $110.00
Hybrid electric and all-electric vehicles have slowly been catching on as the transportation of choice for consumers interested in better fuel economy and a smaller carbon footprint. And, as automakers and engineers know, electric vehicle technologies have been multiplying rapidly. This book may be differentiated from others on the topic in that the authors wanted to widen the focus to include other forms of transportation, like locomotives, construction and mining vehicles, and ships. Topics include an introduction to sustainable transportation, the state of the art for all manner of electric vehicles, fundamentals of electrics and their power trains, power electronics, batteries and ultracapacitors, component size and design optimization, power control strategy, and energy management. Authors are Mi (electrical and computer engineering, U. of Michigan), Masrur (advanced electric and hybrid vehicles, U. of Detroit Mercy), and Gao (electrical and computer engineering, U. of Denver). The book is intended for graduate students and field engineers as a textbook or for self-study.

TL501 2011-005628 978-0-470-74133-7
System health management; with aerospace applications.
Title main entry. Ed. by Stephen B Johnson et al.
John Wiley & Sons, ©2011 630 p. $210.00
From the foreword: "As a systems engineering discipline, SHM addresses the design, development, operation, and lifecycle management of components, subsystems, vehicles, and other operational systems with the purpose of maintaining nominal system behavior and function and assuring mission safety and effectiveness under off-nominal conditions." SHM concepts apply to consumer products (cars, computers), but the roots of the discipline are in aerospace applications where conditions are extreme or hazardous. From the preface: "This book is predicated on the idea that SHM has been evolving into its own discipline over the course of the last 20 years, and has reached `critical mass.' The intent of this book is to provide a basic resource for those who work in, or interact with it." The seven editors who participated in assembling this handbook have affiliations with NASA, academia, and private enterprise.

TL671 978-0-415-66574-2
Aircraft structures.
Narasaiah, G. Lakshmi.
Routledge, ©2011 401 p. $129.95
Narasaiah (the Institute of Aeronautical Engineering) presents this book covering the basics of aircraft design. The book is organized into three sections, the first covering the basics of structural analysis, the second dealing with design and analysis of aeroplane structures, and the third offering information on additional topics. Each section covers its respective subjects thoroughly including many examples and a wealth of equations, graphs, charts, and statistics. This text is a highly valuable resource for students and professionals in aircraft engineering.

TL1491 978-1-60086-836-8
Spacecraft charging.
Title main entry. Ed. by Shu T. Lai. (Progress in astronautics and aeronautics; v.237)
Amer. Inst. of Aeronautics & Astronautics, ©2011 179 p. $84.95
Scientists in the US, Japan, and Europe examine some of the dangers spacecraft face from near-Earth space weather when they recharge their batteries. They cover surface and deep dielectric charging on spacecraft; incoming and outgoing electrons; spacecraft charging, arcing, and sustained arcs in low Earth orbit, surface discharge on spacecraft, spacecraft charging simulation, spacecraft charging in the auroral oval, and internal charging.

CHEMICAL TECHNOLOGY

TP159 2011934921 978-1-84569-969-7
Advanced membrane science and technology for sustainable energy and environmental applications.
Title main entry. Ed. by Angelo Basile and Suzana Pereira Nunes. (Woodhead Publishing series in energy no.25)
Woodhead Publishing, ©2011 818 p. $330.00
Scientists and engineers in materials, chemistry, and other fields who specialize in membrane science and technology describe applications of membranes that help reduce greenhouse gas emissions and contribute to energy security. After introducing membrane science and engineering, they survey applications for carbon dioxide capture and synthetic gas processing and oxygen transport in coal and gas power plants; hydrocarbon fuel and natural gas processing and advanced biofuels production in the petrochemical industry; batteries, fuel cells, and hydrogen production for alternative energy applications; and industrial, environmental, and nuclear applications. Among specific topics are the fundamental science of gas and vapor separation in polymeric membranes, inorganic membranes for pre-combustion carbon dioxide capture, membranes for hydrocarbon processing and separation, ion exchange membranes for vanadium redox flow batteries, and the degradation of polymeric membranes in water and wastewater treatment. Angelo Basile and Suzana Pereira Nunes are based at Penn State University.

MANUFACTURES, ARTS & CRAFTS

TS173 2011-011401 978-1-60960-747-0
Dependability and computer engineering; concepts for software-intensive systems.
Title main entry. Ed. by Luigia Petre et al.
Engineering Science Reference, ©2012 515 p. $195.00
This reference provides an overview of current research being conducted on the dependability of software-intensive systems, and addresses the most pressing challenges to ensuring that dependability. Some specific topic examples include: a holistic approach to fault management, network availability for distributed applications, development of scalable and reliable multi-agent systems, security issues and software vulnerabilities, application security for mobile devices, and analysis of risks and dependability. The book was written for readers interested in the design, operation, maintenance, and management of dependable software-intensive systems. Editors Petre, Sere, Troubitsyana (Abo Akademi U., Finland) and 47 co-authors contributed to the reference.

UG486 2011-010940 978-0-470-25560-5
Military laser technology for defense; technology for revolutionizing 21st century warfare.
McAulay, Alastair D.
John Wiley & Sons, ©2011 305 p. $79.95
McAulay (electrical and computer engineering, Lehigh U.) presents unclassified and declassified information on military applications of laser technology that involves the propagation of laser beams through the atmosphere. Following background information on optical technologies, he describes specific laser technologies, including efficient ultrahigh-power lasers such as the free-electron laser that he believes will have a major impact on future warfare. He then discusses protection from directed energy lasers and the role of laser technologies in combating missiles, nuclear weapons, and chemical-biological weapons; in object detection, tracking, and identification; and in various anti-terrorism applications (for some reason “nonlethal crowd control” is included under the rubric of anti-terrorism).

UG635 2011-008727 978-1-59114-241-6
Chinese aerospace power; evolving maritime roles.
Title main entry. Ed. by Andrew S. Erickson and Lyle J. Goldstein.
Naval Institute Press, ©2011 524 p. $52.95
This work offers a broad overview and appraisal of recent developments in Chinese aerospace and maritime power and examines implications for the US military, especially Chinese prowess in fielding advanced cruise missiles and China’s long-range precision-strike capabilities that pose a threat to forces in the Western Pacific theater; emphasis is on how the US can deter armed conflict with China and maintain a dominant presence in the region. Coverage encompasses China’s existing aerospace system of microsatellites, unmanned aerial vehicles, ballistic and cruise missiles, as well as China’s aircraft carrier program now under development. The book surveys Chinese aerospace assets for intelligence, surveillance, and reconnaissance (ISR) and counter-ISR, and considers prospective maritime missions that might develop further in the future as the result of advances in Chinese aerospace. B&W maps are included. The book

consists of revised and updated papers from a December 2008 conference sponsored by the US Naval War College's China Maritime Studies Institute, plus invited new papers, written by technical specialists in the US Air Force, US Navy operators, and regional experts. The editors are affiliated with the College's China Maritime Studies Institute.

VM156 2010-054228 978-1-119-99149-6
Handbook of marine craft hydrodynamics and motion control.
Fossen, Thor I.
John Wiley & Sons, ©2011 575 p. $195.00
Fossen (Norwegian U. of Science and Technology, Norway) has developed expertise in the fields of hydrodynamics, naval architecture, robotics, marine and flight control systems, guidance systems, navigation systems, and nonlinear control theory. In this handbook he has merged recent research and results with material from two previous texts (*Guidance and Control of Ocean Vehicles*, 1994; and *Marine Control Systems*, 2002). Coverage encompasses kinematics; rigid-body kinetics; hydrostatics; seakeeping theory; maneuvering theory; models for ships, offshore structures, and underwater vehicles; environmental forces and moments; and various aspects of motion control including guidance systems and sensor and navigations systems. Appendices include nonlinear stability theory, and numerical methods.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z675 978-1-84334-616-6
Convergence of libraries and technology organizations; new information support models.
Barth, Christopher D. (Information professional series)
Chandos Publishing, ©2011 180 p. $80.00 (pa)
Some organizations and institutions have converged their previously independent library and technology teams into single information teams, creating a new type of organization: the information service organization. This book is designed to support institutions that are considering or already deploying a converged information service model, principally in academic settings. The book doesn't provide an exact blueprint of how the process should be done, but rather promotes discussion among campus and organizational leaders as well as library and technology staff, and gives guidelines for organizational design in converged organizations. Material is presented from the point of view of the library. The book looks at changes in professional identity, staffing for convergence, and the tension between traditional models of specialization in higher education versus the generalization needs of converged organizations. A final chapter examines future trends in the research process, the cloud, multimedia, metadata, and user interfaces. Barth is executive director of library and information services at Luther College. The book is distributed in North America by Neal-Schuman.

Z678 2011-010418 978-1-59884-573-0
Engaging in evaluation and assessment research.
Hernon, Peter et al.
Libraries Unlimited, ©2011 305 p. $50.00 (pa)
Hernon (library and information science, Simmons College) et al. introduce evaluation and assessment research to library managers and students and its use in planning, decision making, and accountability to improve the quality of library programs and services or its infrastructure. Drawing from research within and outside library and information science, they overview the research process and its activities, including reflective inquiry, adoption of appropriate procedures, quantitative and qualitative data collection and analysis, and presenting findings. They explain design, statistics, and creating a culture of evidence gathering and managerial use, and offer a checklist of tips drawn from their and others' experiences. ❖

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