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In 1866, Edward Cope discovered, in New Jersey, the first American remains of a carnivorous dinosaur. He named it Laelaps aquilunguis, and he reconstructed it here as a kangaroo-like predator, perched on a rock. Surrounding Laelaps are two marine reptiles, called Elasmosaurus, which Cope has unfortunately depicted with the head on the wrong end, that is, on the end of the tail. More information is available at the Linda Hall Library’s online exhibition, Paper Dinosaurs, 1824-1969, which was recently redesigned; it may be found at www.lindahall.org. The image is from an article by Cope in the American Naturalist, 1869, volume 3. (Photo and caption courtesy of the Linda Hall Library of Science, Engineering & Technology).
Editor
James Manasco
Head, Collection Development
University of Louisville
LL38 Ekstrom Library
2301 S. Third Street
Louisville, KY 40292
Ph: (502)852-8731
Fax: (502)852-8714
james.manasco@louisville.edu

Assistant Editors
Susan Fingerman
R.E. Gibson Library and Information Center (L-100)
JHU Applied Physics Laboratory
11100 Johns Hopkins Road
Laurel, MD 20723-6099
Ph: (443)778-4301/Baltimore
Ph: (240)228-4301/DC
Fax: (443)778-5353
susan.fingerman@jhuapl.edu

Abby Thorne
132 Hemingway Place
Georgetown, KY 40324
Ph: (859)539-5810
abby.thorne@gmail.com

Sci-Tech Book News Reviews
Selector: Susan Fingerman (11/2008)
susan.fingerman@jhuapl.edu

New S&T Journals
Editor: Earl Mounts
Alcoa Technical Center
earl.mounts@alcoa.com

Web Reviews
Lisa R. Johnston
University of Minnesota
ljohnston@umn.edu

Business Manager
Cheryl Hansen
Engineering Systems, Inc., Library
3851 Exchange Avenue
Aurora, IL 60504-7900
Ph: (630)851-4566
Fax: (630)851-4870
cahansen@esa-il.com

Advertising Manager
Carol Lucke
US Naval Research Laboratory
Research Library
Washington, DC 20375
Phone: (202) 767-2348
Fax: (202) 767-3352
E-mail: carol.lucke@nrl.navy.mil

Mailing address:
6917 Asbury Drive
Springfield, VA 22152

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From the Editor

James Manasco

What was I thinking? Was I crazy to accept such an overwhelming post like SciTech News editor? Should I have run screaming when I saw the posting about the position? Why am I babbling on in this fashion in my first “From the Editor” posting? Only the Norns may know for sure!

Any way, enough wailing and gnashing of teeth! First off, I must apologize for the lateness of this issue. All blame should be assessed to me alone. Transitions are often a bit messy and this one was no exception. But, the fault lies with your humble editor and should not be ascribed any further. I accept all blame and ask you all for your kind forgiveness and I truly hope this does not herald a new standard for the SciTech News.

I am grateful to all the contributing authors and especially my predecessor, Susan Fingerman, for all her advice and support as I tackle this new challenge. I am thankful that she is staying on as an Assistant Editor, at least for a little bit to help with the continuing process of getting the SciTech News running more smoothly under its new management.

I am also thankful that Abby Thorne has agreed to be an Assistant Editor, as well, taking on the monumental task of doing the markup for each issue this year. “Thankful” is actually too small a term...”eternally grateful” would be much more appropriate!

I am also happy to report that both Carol Lucke and Heidi Porth have agreed to stay on in their accustomed roles with the bulletin! And, finally, I want to thank Christina Pikas for her years of service to SciTech News. She has done a phenomenal job as Assistant Editor and I wish her the best in her future endeavors.

To the readers, I want to thank you for your patience as I “learn the ropes.” I also want to put out a call for, as the Manuscripts notation so eloquently illustrates, “papers of interest to the community of science and technology-oriented special libraries.”

And, finally, I do want you all to know that your editorial staff will be looking into several new, or returning, features/changes for SciTech News this coming year. Those changes will include: an online version of the bulletin, hopefully by 2010, a return of the refereed section, and, perhaps, a surprise or two.

See you next time!

James E. Manasco
james.manasco@louisville.edu
Call for Sci-Tech Nominations for 2010

It's that time already! Your Sci-Tech Division is looking for nominees to run for election as Secretary or as Chair-Elect of the Division. You may volunteer yourself or recommend a colleague for the Nominating Committee to consider.

Secretary
• Serves a term of 2 years (2010 and 2011).
• Records the actions of the Board and communicates them to the Association.
• Manages the balloting of the Division’s annual election (lately on Survey Monkey).
• Travel support is available, if needed.

Chair-Elect/Chair/Past-Chair
• Serves for 3 years on the Executive Board, moving from Chair-Elect to Chair to Past-Chair (2010-2012).
• As 2010 Chair-Elect, manages the Program Committee for the 2011 Annual Conference.
• As 2011 Chair, makes Board appointments and leads the Division.
• As 2012 Past-Chair, revises government documents as needed and advises the 2012 Chair and Board.
• Informally, serves a 4th year as chair of the Nominating Committee
• Travel support is available, if needed.
• The Chair-Elect is supported by a Programming Committee and a Vendor Relations Committee for fund-raising; this allows the Chair-Elect to focus on quality programming.

Check the Division’s Recommended Practices document for further detail about the roles.

We work at making Division jobs FUN and REWARDING, not to mention GOOD FOR YOUR RESUME. Why not make this the year you say “YES, I CAN” to your Division?

Please contact any member of the 2009 Nominating Committee to recommend a candidate (including yourself) for either position. We’ll be accepting recommendations for consideration through the end of May, with the intention of announcing nominations at the Annual Business Meeting in June 2009. Your recommendation will be held in confidence by the Committee, if requested.

2009 Nominating Committee:
Ann Koopman, Chair (ann.koopman@jefferson.edu)
Mary Frances Lembo (mf.lembo@pnl.gov)
Debal Chandra Kar (dckar@teri.res.in)
Colleagues and Friends,

As the New Year dawns, a common exercise is to review and reflect on the achievements and challenges of the past year and to look ahead to the coming year. Here is my snapshot of just a few DCHE 2008 highlights and 2009 directions.

Just a few 2008 Highlights:

The Chemistry Division produced a fine program for the SLA Annual Conference in Seattle where several new formats for some “traditional” events were piloted.

There are now some Division members helping with various committees for the first time thanks to great mentoring by “experienced” members.

The Division had several award winning members in 2008 – from the Sparks Award winner (Margaret Smith) to a Diversity Award winner (Bing Wang) and even the second Hall of Fame winner in as many years (Dana Roth)! Congratulations to all!

What lays ahead for 2009?

The Division planners: Susan Makar, Cathy DiPalma (MRM) and myself, are putting together another great set of sessions for the 2009 SLA Annual Conference, and there will be opportunities for Division members to participate in various ways, such as session moderators, session reporters, panelists, poster presenters, etc. I hope you avail yourselves of these great opportunities in planned sessions on:

A Measures Toolkit for Librarians
Materials Research in Wind Energy - Present and Future
Interdisciplinary Science and Its Implications for
Librarians and Information Professionals
The Business of Chemistry
Food Security (with FAN)
REACH & the Future of Toxics Legislation (with ERM)
Forensics (with Sci-Tech)
Poster Session during the All Sciences Reception (theme TBD)

Our Division Professional development Chair, Ted Baldwin, also has a great lineup of CE Courses for the 2009 SLA Conference.

The Division will review its Strategic Plan and update it to reflect the needs of the membership and to help set actionable goals for the Division. Please participate in any needs assessment/membership survey to help define the Division’s new Strategic Plan and goals.

In what areas have you made a positive difference in your organization, in your work group, in your profession in the past year? Of what are you most proud? Have you used skills or expertise derived from your membership in SLA and the Chemistry Division in any of these? What challenging goals have you set for yourself for 2009? How can your membership in the Chemistry Division help in these goals – by professional development courses, leadership development opportunities, networking to help keep up with the profession, etc? Maximize your usage of the Division discussion list and check out the Division’s web site and blog (http://units.sla.org/division/dche/index.htm) to keep the communication channels open and learn about opportunities in any of these areas. Please do not hesitate to contact me or any of the other Division officers if you are interested in participating in the Chemistry Division in any way.

Have a great 2009 heralding in the 100th Anniversary of SLA!
Greetings from Rochester, NY,

This year the Chemistry Division will be electing a new Chair-Elect and a Secretary to start in 2010. I’m currently assembling the Nominations Committee and we will be reviewing the membership for nominees. Let me know who you would recommend for these important leadership positions.

We are in the process of updating our strategic plan and collecting information from our membership to enhance our activities. I will be in touch with Judith Currano and Linda Shackle as they prepare and administer this survey to see if I can be of assistance.

On a personal note, baby Torstan is flourishing and is adding a new dimension to my life.

Sue Cardinal
DCHE Past Chair 2009
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Happy New Year and Welcome 2009

I am looking forward to a festive and activity-filled year as SLA celebrates its centennial. "Information to Inspiration: Knowledge & Vision Shaping the Future," the theme of the 2009 conference, not only beckons us to consider the direction of both our profession and our organization as we proceed into the next 100 years, but also resonates as a theme of our country as a whole as we hold this conference in Washington, D.C., site of an historic inauguration in January.

Materials science has always played an important role in innovation; within society as a whole as well as in industry. Materials R&D today and in the future is poised to make significant contributions to the global condition. Those of you working in this field and those supporting researchers in this field know that there are exciting developments taking place related to energy, health and environmental issues, transportation and housing, to name a few. I would like to see this space dedicated, in part, to some of these developments and I encourage you to share your ideas or work experiences in this publication.

I would like to add my own themes of participation and outreach for the MRM group this year. Please consider involvement in SLA and the Chemistry Division/ MRM Section. We are always seeking volunteers and have a lot of fun in the process. Some of you might like to consider participating in a poster session or submitting a paper—there are many ways to make a contribution. In turn, I will do my best to inform you about news and issues for our section and SLA as well. I also hope to have a mid-year activity, time and resources permitting and will try to acquaint myself with as many of you as possible.

Thanks again to Nora Stoecker, Past Chair, who has been a very dedicated, active member and someone who has helped me a great deal as I prepared for this position.

Welcome to Jack Bashian, Chair-Elect for 2010. I look forward to working with him and sharing some of my experiences.

I hope to see many of you in Washington, D.C. in June. Check the SLA website for early bird registration and additional information concerning hotel reservations, flight information, etc.

Warm regards,
Cathy DiPalma
Saint-Gobain NorPro
cathy.dipalma@saint-gobain.com
Phone: 330-677-3566

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

Ms. Nicole Ernst
Bibliographic Coordinator
ICDD
Publication
12 Campus Blvd
Newtown Square, PA 19073

Ms. Maurica Fedors
Mngr Tic
BASF Catalysts LLC
R&D
25 Middlesex Essex Tpk
Iselin, NJ 08830
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Welcome to a new association year!

I am honored to be serving as chair of the Engineering Division during SLA’s Centennial Anniversary. We have a wonderful team that will be working together to bring news, networking, and educational opportunities to members all year long.

Within the division we all share the excitement and periodic unease of working in interesting times. Not only are the tools and platforms of librarians and information professionals changing with near blinding speed, the working environments of engineers are also shifting. The world has indeed become more flat for the people we support, with global perspectives, design, creativity & innovation, and policy awareness all crowding for attention along with traditional engineering skills. How can we maintain our own skills while continuing to support engineers in their emerging roles? Networking, continuing education, current awareness, and partnerships are critical. I invite each of you to join our conversations this year as we stay connected and support our collective development.

Before looking ahead, though, I’d like to thank our 2008 Board. Daureen Nesdill was an active chair throughout the year. Not only did she lead the planning efforts for a fabulous conference in Seattle, where the Engineering Division had its own anniversary celebration, she also organized timelines and roles to help keep the Board focused on key deliverables. Many volunteers are needed to plan a conference and run a division, and I want to thank everyone who helped make 2008 a successful year for the division.

Turning to 2009, I want to welcome new members to the Engineering Division Board and team. Laurie Allen of Teledyne Scientific & Imaging will be serving as the division’s Chair-Elect, and Mary-Frances Panettiere of the Georgia Institute of Technology will serve as our new Secretary. Hema Ramachandran of California State University – Long Beach has been elected Chair-Elect of the Aerospace Section. Another new member of our team is Tina Gheen of the National Science Foundation, who will serve as the Division’s new Web Page Editor. I will be announcing our new Professional Development Chair shortly; hopefully a name will make our roster in this publication. Currently the ASEE Engineering Libraries Division Liaison Position is open. While this position is often filled from the ASEE side, I welcome volunteers whose names I can share with ASEE. The Government Relations Chair is also open. This is a wonderful opportunity for an Engineering Division member who either works in government, deals with government contracts, or who stays current with government policy impacting librarianship and engineering.

I have formed three committees this year to take on special projects or to coordinate similar functions. First, there is now a Communications Committee that is made up of the Discussion List Owner, LibGuides Team Lead, and the Web Page Editor. We’ll also be exploring division business functions on our wiki site that is under construction. This committee is currently co-chaired by each of the communication channel chairs. Second, with the change in the Association calendar year, our governing documents have become out of date. I’ve formed a Governing Documents Committee that will audit the documents and suggest changes to the division board. Sara Davis of Jacobs Engineering Group Inc will be chairing this committee. Finally, to look ahead, I’ve formed a Strategic Planning Committee that will propose a 3–5 year plan for the Division. I will be chairing this committee. Each of these teams will need additional support for their work, and I welcome volunteers. Please let me know if you have a specific interest.

The LibGuides Team has recently been formed within the Communications Team. SpringShare is a new vendor partner who has donated the use of their software, LibGuides, to the division. Engineering Division members are volunteering to create subject guides and to sit on the team’s editorial board. The web site for the LibGuides is: http://sladeng.libguides.com/index.php. These guides will serve as one of the key tools to keep members up to date within specific engineering areas. I want to thank everyone who has volunteered to create a guide or to sit on the editorial board. I would also like to invite others to join our team. Topics currently under development are: Chemical Pricing, Civil & Environmental Engineering, Computer
Engineering, Energy Resources, Patents, Physical Property Information, and Water & Waste Water Information. We have room for many more authors, and this is a wonderful opportunity to share your expertise with the division.

A key conversation for 2009 is Corporate/NGO/Government/Academic partnerships. I would like to discuss what academic engineering librarians can be doing to help prepare their students for a professional engineering role. What sort of relationships do corporate/NGO/government librarians have with their clients? What do engineering librarians wish their clients knew about working with them? How can we all work together to create a continuous stream of engineering support? In addition to feeding the discussion list with news items, our division will be taking on this conversation at our Annual Business Meeting in Washington, DC. At our lunch tables will be sheets of talking points and writing tools. I am hoping that we can have a stimulating conversation and leave some great thoughts that will then be shared on the division list and on our web site.

One key tool in keeping creativity and innovation skills sharp is play. I think that many of us become so busy with our day-to-day job tasks that we neglect this tool. Many of us played with Legos and other building toys as children. What are our current toys? Have you ever dabbled in origami? Folded snowflakes? These are very mathematical pastimes. Do we have potters amongst us? Quilters? I love to dabble with my digital camera, and am always folding scraps of paper into shapes of some sort. I invite each of you to share your play pastime. I also invite each of you to a session on play at the annual conference. Stephen Abram will lead us through our session, and each participant will receive a play kit filled with fun surprises. The session, on Wednesday morning, June 17, from 7 am to 10 am includes a full breakfast.

Once again, I am excited about the upcoming year, and look forward to both serving the division and working with many of you. Please feel free to contact me at any time.

Dee
CALL FOR NOMINATIONS AND APPLICATIONS

Special Libraries Association Engineering Division

$1000 IEEE Continuing Education Stipend - Call for Applications

Stipend to attend the SLA Annual Meeting in
Washington, DC, 14-17 June 2009

IEEE (Institute of Electrical and Electronics Engineers) is sponsoring for SLA Engineering Division members a travel stipend up to $1000.00 toward payment of expenses incurred while attending any Continuing Education course offered at the annual Special Libraries Association conference in Washington, DC, June 14-17, 2009. The stipend may be applied to travel, food, and one night’s accommodation.

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

Qualifications for Entering Competition:

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

Special Instructions:

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


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

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

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

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

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

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

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

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

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

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


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

Submit Entries for the award to:

Bette Finn, SLA Engineering Division Awards Committee
Georgia Tech Library and Information Center
Georgia Institute of Technology
Atlanta, Georgia 30332 0900
Phone: (404) 894 1790
Fax: (404) 894 8190
E-mail: bette.finn@library.gatech.edu
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CALL FOR NOMINATIONS AND APPLICATIONS

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

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

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

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

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

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

Deadline for submission: March 2, 2009

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

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

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

Gale Harris, 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.

WOW! Happy New Year! What a year 2009 will be for SLA! As I write this, I am preparing for the SLA Leadership Summit in Savannah, GA. Visions of history, haunting and Paula Deen awaits me while finalizing conference program details. I just hope there are no nightmares of large beasts made of butter (Paula Deen’s favorite food).

I want to express my thanks to Kathryn Breininger, our past Chair, for her help and support. She and I became fast friends as we worked through our respective positions. We both took the approach of learning and doing things together which helped ease some of the transition from Chair-Elect to Chair. Also, huge thanks go to the SLA Engineering Division Board for their help and support in organizing and coordinating the various programs.

Our new Chair-Elect for 2010 is Hemalatha (Hema) Ramachandran. She is the Engineering Librarian at Long Beach California State University-Long Beach. She has been with the University since May 2007. She received the SLA Diversity Leadership Award in 1996. Besides SLA, she is involved with the American Society of Engineering Education’s Engineering Libraries division. She has presented several papers at the ASEE conferences on information literacy. She is also a published writer with a book chapter under her belt on the topic of computer engineering. Please be sure to meet Hema in D.C.

The Aerospace section will hold its Business Meeting and Breakfast on Monday, June 15th. We will be presenting the Mandel Award at the breakfast meeting as well as other recognitions and information. On that same day, the Engineering Division and the Aerospace Section will be hosting a session on “MISSION TO MARS”. This promises to be an enlightening look at the future. Dee Magnoni, Engineering Chair, along with others has been busy working on this year’s programming and the offerings are great. I know you will find many more sessions to attend than you will have time for.

More detailed information on various conference activities and events will be discussed in the next newsletter. I’m already excited about the keynote speakers slated for the conference. SLA is going all out this year. In the mean time, be sure to look over the conference site and plan to be a part of our centennial celebration in our nation’s capitol.

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Time moves fast - no, time goes at the speed of light! It is about a year and a half since I was elected Chair-Elect to the Sci-Tech Division. Chair-Elect time is over and now I am Chair. What I’ve chosen to get involved with is still sinking in. Many, many thanks to Christine Whitaker and Ann Koopman for their help. As writers frequently say in their introduction, any mistakes I make are my own and not my advisors.

An organization like SLA is only as good as its’ volunteers and we have a great group of volunteers this coming year. With so many electronic ways to keep in touch, people like me who are geographically isolated can actually attend “virtual” meetings and keep in touch with other members of a committee or SLA as a whole. So please, think about volunteering. The old saying, “many hands makes light work,” is really true. The more volunteers we have, the easier it is. For those of you new to the profession, it’s a good way to meet your peers and for those of us who have been members for a while, it’s good to give back to the profession. In tough economic times, every dime we spend needs to be relevant to our needs, so you need to let the officers know what you want and need from the division and SLA. If you want to volunteer, contact either the chair of the committee you might be interested in or myself. You can go to http://units.sla.org/division/dst/Officers/officers.html to see what positions are vacant or see who the chair of a particular committee is. I’ll be writing more about volunteers next issue but I would especially like to acknowledge Ann Koopman. She just finished the three year stint, chair-elect, chair, and past-chair responsibilities in addition to serving as chair of two committees.

Ann, you deserve a big round of applause for all your fine work.

Happy birthday SLA! We celebrate SLA’s 100th birthday this year. The keynote speakers for our annual conference are Colin Powell for our opening and for the closing, there is a panel consisting of Judy Woodruff, moderator and Robyn Meredith, Neil deGrasse Tyson and John Patrick. It is a time for looking back to see where we have come but equally important is looking ahead to the next millenium. SLA has created their Centennial Website at: http://www.sla.org/centennial.

Our conference this year and many other activities, especially with the various chapters, are about our history and future. Early bird registration for the annual conference is available until April 3.

SLA has contracted with a number of hotels - some expensive, others less so. Make your reservations early so that you can get your choice of hotel. If you need to share a room, use the Sci-Tech Listserv to find a roommate. (If you aren’t currently subscribed, you can send an e-mail to lyris@sla.lyris.net with the Subscribe command in the body of the message. No subject line is necessary. Please do not include any signature or formatted text in the message. Your text message should read: Subscribe SLA-DST your-e-mail_address “FirstName LastName”).

Keep an eye on the Sci-Tech listserv for more information about our division’s activities and, of course, read SciTech News. Check with your local chapter to see what activities they are planning. If you are like me and it’s a several hour drive (or more) to attend your local chapter meetings, do try to find the time to go but if that is impossible, see what electronic activities they have available. The Sci-Tech Division will be having at least one electronic class this year and keep an eye out for the poster session from the annual meeting that will be posted this fall if you can’t make the annual conference. Watch for our contributed papers going electronic! More information about that will be on our listserv.

Please remember to renew your membership to SLA (and to our Division!).

SLA realizes that many of us have had changes in employment, so they have restructured the dues so that there is a third tier.

Members with incomes equivalent to USD$35,000 or more have dues of USD$160. Members with incomes between the equivalent of USD$35,000 and USD$18,000 have dues of US$99.
Members with incomes below USD$18,000 have dues of USD$35. (The category for members who become unemployed providing a one-time, one-year opportunity to pay dues of US $49, has now been eliminated.) Members will now be able to pay the lowest dues as long as their income is below the equivalent to US$18,000, regardless of their employment status.

Susan Fingerman is stepping down as editor to the SciTech News after 4 years. This is a quarterly publication and so there is an extraordinary amount of work involved. In addition, it involves not only working with the Sci-Tech Division but the Chemistry and Engineering Divisions, the Aerospace Section of the Engineering Division, and the Materials Research and Manufacturing Section of the Chemistry Division. Susan has had to work with each of the divisions and sections in order to put together an extremely high-quality newsletter. This cannot have been an easy task but she has done it brilliantly. Thank you Susan for doing such a great job as editor. James Manasco will be our new editor. You can read more about the change in this issue of Sci-Tech News.

SLA begins a new century this year. There will be great things in store for us this year and the next century. Keep up the good work, SLA!
S. Kirk Cabeen Travel Stipend Award
Sponsored By The Science-Technology Division

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

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

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

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

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

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

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

**Notification:**
1. Applicants will receive notification of award status by mid March 2009. The award checks will be sent to the recipient as soon as the receipts are received by the Awards Chairperson.
2. The recipients’ names will be posted to the Science-Technology Division’s Web site
3. The award will be announced and presented to the recipient at the Science-Technology Division’s Annual Business meeting/breakfast.
From Sticky Notes to Mind Maps: Visual Collaboration Environments

I use sticky notes, both electronically on my desktop and in the real world. They are invaluable to quickly jot down information that might slip away the moment someone walks into your office or that second mouse click takes you on to a new topic. Of course these precious bits of paper present new problems: how to connect those ideas, make sense of your various projects, and manage your time efficiently (Not to mention presenting your scribbles in such a way to effectively share with others!). Naturally I’ve been impressed with the electronic sticky notes popping-up on the web. These virtual mind mapping tools do all this and more. Going beyond the simple list tracking applets, like the popular “Remember the Milk” (http://www.rememberthemilk.com/), they can map and visualize your ideas, connecting the various threads of your latest article, and allow web-based collaboration with others, for tasking-out those larger group assignments. My notes still might not make sense to others, but at least they won’t fall off the monitor when the glue wears out!

MindMeister
http://www.mindmeister.com/
Fun, fast, and easy to use, this AJAX-based web application has a slick user-friendly interface and the free basic account is simple to create and gives you up to 6 free maps. Connectivity makes this application rise above the rest. Integration with Twitter, Skype, export options and, my personal favorites, the Firefox browser extensions and iGoogle gadgets, all really keep you in touch with your ideas! Premium accounts (to share with your library staff or university) range from $15 to $49 a year but include nice features such as an offline version, plus file attachment and search capabilities. A nice completed Meister map showing off the incredible features of this web-ware is at “Robin Good’s Open Collaborative Map for LearningTrends2008” http://www.mindmeister.com/12213323 (pictured here).

Dabbleboard
http://www.dabbleboard.com/
A great tool for what it is: a freehand note pad. Additional features such as the chat tool is nice for collaboration while drawing. But draw features are difficult to use. Interface is not in-line with past learned behaviors (such as select and drag items creates a line, special button on each corner of an item controls functions like move, delete, etc.). Also the drawing area gets very small after only a few notes. Great concept, but may be only useful for doodles and passing virtual “notes” during class (or meetings!).

VUE
http://vue.tufts.edu/
VUE (Visual Understanding Environment) was created at Tufts University as a way to integrate multiple media sources for learning
and education. As a result, this freeware can accommodate visual elements beyond text such as audio, video, and images. The built-in search features, ontologies and outline tool are great resources to help you build professional, impactful maps. And the new plug-in “Resources” connect this stand-alone application with useful academic web content from sources like Fedora, Flickr, JStor, PubMed (NCBI), and Wikipedia.

**Stixy**
http://www.stixy.com/
Stixy is a virtual web-environment for your sticky notes…and it’s really cool. The homepage of this site is a live demo that features the ease of creating new “widgets” for your notes, photos, To Do items, and documents. It might make a great environment to write an article with all of your reference article pdf’s held in one mind map tool. Especially nice is the To Do widget that prominently displays the calendar date and can be set to email a reminder to you and your collaborators. Once you leave the site URL, all notes are saved and hidden from view. The downside of this cool tool is that the widget’s large size fills up the screen quickly and your notes get a bit messy.

**FreeMind**
http://fremind.sourceforge.net
FreeMind is a java based software download that was created in 2003. With near two million downloads last year, this free software hosted on Source Forge is a very hot item. However the abundance of web-based applications doing relatively the same thing may outpace their success; their documentation page links to alternative applications.

**Bubbl.us**
http://bubbl.us
Very easy to use mind map that uses bubbles automatically placing themselves; creating a visually appealing brainstorming session with very little effort. Best of all, the drawing space is limitless and your map can grow to include all of your ideas without cluttering up the screen. I love the mouse and keyboard shortcuts that manipulate the web page, such as mouse scroll-wheel Zoom control and the Tab and Enter keys control the arrangement of the next bubble, making this a perfect note-taking tool during a fast-paced discussion. On the other hand, text appears to be the only accepted content for your bubbles at this time.

**Twiddla**
http://www.twiddla.com/
Twiddla calls itself a web-based meeting playground…and they are not far off. This is another literal whiteboard tool which is highly doodle-prone. Like DabbleBoard, the screen gets small after a few additions, but the draw tools behave more as expected. Another nice chat feature makes collaboration with Twiddla fun and visual. The Browse feature allows multiple users to “co-browse” the internet by viewing a web page and adding comments. This is a great concept, but difficult to implement in practice. On the other hand, there is no installation limit to the number of mind maps you save, so there is plenty of room from trial and error.

**Mindomo**
http://www.mindomo.com/
With similar features to MindMeister, such as web-based mind maps that can be created, edited, saved, and shared, Mindomo comes up short with its poor graphic quality and slow-loading interface. Their basic accounts are free and premium versions start at $6 a month. This
mapping software works both online and off with the additional installation of Adobe Air.

**Mind42**
http://www.mind42.com/
Rather than bubbles, Mind42 expands your ideas in the form of an idea tree. The nodes can be collapsed or expanded to present a concise picture of the detailed map you create. Though limited in features, the tool’s minimal navigation and web-based approach make it one of the simplest mapping tools reviewed here.
LET US HELP YOUR LIBRARY

Libraries of every type have two common problems:

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—Michael Powell, Owner, with daughter Emily Powell

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Tour the USPTO

Thursday, June 18, 2009 tour at SLA Annual Conference
8:30 am – 4:30 pm

Take the mystery out of the patent process while viewing some of the earliest US patent items/inventions. We’ll start the day with a buffet breakfast at the Conference Center. Martin Finston, Alcatel-Lucent patent attorney, will provide an overview of the patent process and how Information Professionals can add value to their customers during this process. Attendees will then take a bus to the USPTO in Alexandria, VA, where USPTO personnel will detail the process for a patent application submitted to the USPTO through approval or rejection. Attendees will be on their own for lunch in the USPTO cafeteria or Old Town (recommendations will be provided). The USPTO museum and gift shop will be open during lunch. The afternoon will include tours of the main USPTO library, a choice of Technology Centers, and the Public Search space.

Register via the SLA Annual Conference form.

Ticket price: $25

Questions? Contact Dee Magnoni at dianna.magnoni@olin.edu

Schedule of Tour:

8:30 am Meet at a conference room at Conference center - Continental breakfast or coffee

9:00 am Presentation by Martin Finston, PhD, JD, Alcatel-Lucent patent attorney: An overview of the patent process and how Information Professionals can add value to their customers during this process.

10:00 am Bus to USPTO in Alexandria, VA

11:30 am A presentation on the process for a patent application when it is submitted to the USPTO to approval or rejection.

12:30 - 2:30 pm Lunch on your own in either the USPTO cafeteria or Old Town, USPTO museum and store.

2:30 pm Three tours: the Main USPTO Library, a choice of one Technology Center, and the Public Search space.

4.00 pm Bus back to DC conference center.

PARTICIPATING DIVISIONS

Engineering, Information Technology, Legal, Physics-Astronomy-Mathematics

THANK YOU

IEEE, our Vendor Partner

The USPTO library staff and personnel
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  2007-039305  978-0-470-02167-5
Self-organising maps; applications in geographic information science.
Title main entry. Ed. by Pragya Agarwal and André Skupin. John Wiley & Sons, ©2008  205 p.  $145.00
Kohonen, or self-organizing, maps are an approach to the intense computation of with massive sets of geographical data that are becoming more common in geographical information systems (GIS). Researchers in geography and related earth sciences describe in great detail the technique that, inevitable, is already known as SOM. The topics include detecting geographic associations in English dialect features in North America within a visual data-mining environment that integrates SOMs, visualizing human movement in attribute space, and automating road extraction from remotely sensed imagery.

SOCIAL SCIENCES

H62  2008-010387  978-1-4129-4918-7
The handbook of social research ethics.
Title main entry. Ed. by Donna M. Mertens and Pauline Ginsberg. Sage Publications, ©2009  667 p.  $130.00
Going far beyond which forms to file and which committees to impress, this collection of 37 essays address many of the sources of questions as well as appraisals of many of the recent lapses. Contributors cover the history and philosophy of social science research ethics, including research ethics in the postmodern context, feminist perspectives, critical race theory, disability theory, and transformational research, and articles on ethical regulation address government regulation, institutional review, indigenous control, and program evaluation. Research methods considered here include sociological research, experiments and quasi-experiments, ethnography, covenantal ethics, and peacemaking; those on research practice include self-evaluation, relationships between researchers and subjects, indigenous voices, partnership, and visual representation. The final two sections cover ethics within diverse cultural groups and the future of research in the ethics of social research.

PRODUCTION, INDUSTRY, COMMERCE

HD45  2008-010317  978-1-60566-038-7
Principle concepts of technology and innovation management; critical research models.
Title main entry. Ed. by Robert S. Friedman et al. IGI Publishing, ©2008  305 p.  $165.00
Although research will never become a luxury, it has come under fire increasingly as managers expect more applicability to commercial projects, better cost-effectiveness and ever-shorter lead times. This expansive treatment aimed at practitioners, researchers, students and managers covers a full range of issues in technology and innovation management, and includes an excellent introduction to the field. It covers research and development process models, technology development and innovative practice, and social influences and human interactions with technology. They offer an organizational perspective on diffusion and innovation, a review of knowledge in changing organizations, organizational innovation strategies, and new product development, as well as an executive summary on technology and management information systems, including open source and software development innovations. The result is an overview that does not sacrifice on detail when appropriate to satisfy the needs of professionals and students.

HD9502  978-1-84542-660-6
Heat, power and light; revolutions in energy services.
The effect of newer sources of fuel on existing energy systems is explored by Fouquet (U. of the South Pacific, Fiji), who takes a look at recent innovations and developments in the industry and notes their impact upon communities and the environment. Using vast amounts of research data, the author uncovers some of the underlying motivations for each type of energy service, and how recent concerns over carbon emissions and climate change really affect decisions at the executive level of energy companies. Written for economists, environmentalists and policymakers, this volume also explores the competition for future energy sources.

HF5548 2008-932460 978-0-7695-3395-7
E-business engineering; proceedings.
Computer Society Press, ©2008 788 p. $266.00 (pa)
The 46 regular length and 26 short papers of this proceedings were first presented at the 2008 IEEE International Conference on e-Business Engineering, held in October 2008 in Xi'an, China. The research presented reflects the international state of the field, with contributors based in China, the US, Australia, South Korea, the UK, and other countries. The papers are grouped according to their session topic, with topics that include data models, knowledge in data, service discovery and description, trust evaluation and real-time transactions, and privacy and security. Each paper includes an abstract, list of keywords, numerous tables and other visual aids, and a list of references. Author indexed only.

MATH, COMPUTERS

QA76.15 2008-030048 978-0-19-923400-4
A dictionary of computing, 6th ed.
Title main entry.
Oxford U. Press, ©2008 583 p. $50.00
This dictionary for computer users, students, and lecturers of computing and related fields contains about 6,500 concise entries on terms and people in the field. This edition has 250 new entries, and feature spreads on XML, object-oriented programming, quantum computing, computer graphics, SQL, and the anatomy of an internet address. It also has new recommended web links and a new chronology. Obsolete entries have been deleted.

QA76.59 2007-050624 978-1-4200-5184-1
Broadband mobile multimedia; techniques and applications.
Title main entry. Ed. by Yan Zhang et al. (Wireless networks and mobile communications; v.9)
CRC / Taylor & Francis, ©2008 566 p. $99.95
This research field is, to put it mildly, hot; and the present and future commercial applications are even hotter, because multiple service providing is likely to be one of the prerequisites for the success of the next generation of wireless networks. This collection of 15 articles includes a range of introductory concepts, fundamental techniques, new advances and open research issues to satisfy experienced designers as well as novices, with topics such as multimedia systems (design challenges, performance analysis of multimedia traffic, interactive mobile TV technologies, and multiparty auto-conferencing), multimedia over ad hoc and sensor networks (routing, multipath unicast and multicast video communication), multimedia over wireless local area networks (including wireless local area networks and improvement of video quality) and quality of service and enabling technologies (including end-to-end quality support of video deliver and packet scheduling).

QA76.59 2008-008315 978-1-4200-5537-5
Unlicensed mobile access technology; protocols, architectures, security, standards and applications.
Title main entry. Ed. by Yan Zhang et al. (Wireless networks and mobile communications; v.11)
CRC / Taylor & Francis, ©2009 405 p. $99.95
Unlicensed Mobile Access (UMA) is a relatively new field within the realm of wireless technologies, and this textbook investigates how these systems can be integrated into GSM and GPRS networks so that services to subscribers are clear and seamless. Zhang (Simula Research Laboratory, Norway), Yang (St. Francis Xavier U., Nova Scotia) and Ma (Hosei U., Japan) have edited this book to explore such popular developments as Bluetooth, WiMax and Wi-Fi, and to show telecommunications engineers and technicians how to design algorithms for any wireless environment. A strong emphasis is placed upon Quality-of-Service (QoS) issues, especially as they pertain to vertical and horizontal handoff.

QA76.76 2008-273363 978-0-13-600663-3
Modern operating systems, 3d ed.
Tanenbaum, Andrew S.
Prentice Hall, ©2008 1076 p. $122.00
This text examines principles and practice of modern operating systems, with an emphasis on Linux, Windows Vista, and embedded, real-time, and multimedia systems. Drawing on
his experience as designer or co-designer of three operating systems, the author begins by covering basic concepts of operating systems, then progresses through material on memory management, file systems, multimedia operating systems, security, and operating system design. Chapter-length case studies are presented on Linux, Windows Vista, and Symbian OS. This third edition is substantially revised to reflect the latest technology, offering more of a focus on the operating system as the creator of abstractions. There is new material on operating systems found in cell phones and PDAs, and on exploiting code bugs and defending against malware. A new section on virtualization technology and virtual machines has been added, using VMware as an example. Tanenbaum teaches computer science at Vrije University, Amsterdam, The Netherlands.

QA76.76 2007-941915 978-1-58603-818-2
Ontology learning and population; bridging the gap between text and knowledge.
Title main entry. Ed. by Paul Buitelaar and Philipp Cimiano. (Frontiers in artificial intelligence and applications; v.167) IOS Press, ©2008 273 p. $161.00
Contributors from natural language processing, machine learning, knowledge representation and engineering, and user interface design explore theories and practices by which people can learn simply by reading a text. Their topics include extracting concept description from the Web, the unsupervised learning of semantic relations for molecular biology ontologies, automatically harvesting and ontologizing semantic relations, strategies for evaluating ontological learning. There is no subject index.

QA76.76 2008-008331 978-0-471-78911-6
Software testing and quality assurance; theory and practice.
Naik, Kshirasagar and Priyadarshi Tripathy. John Wiley & Sons, ©2008 616 p. $100.00
Written for software engineers, software quality professionals, developers, and students, this book sets out fundamentals of testing theory and describes common testing practices. Rather than addressing the characteristics of specific software systems, the book presents testing theory and practice as stepping stones that will help students understand and develop testing practices for more complex systems. Learning features include test questions, examples, teaching suggestions, and chapter summaries. The book can be used as a reference for professionals and as an introductory text for undergraduate courses in software testing, quality assurance, and software engineering.

Naik teaches in the Department of Electrical and Computer Engineering at the University of Waterloo, Canada. Tripathy conducts software testing for grid-based storage applications.

QA76.76 2008-274657 978-0-470-14707-8
Software maintenance management; evaluation and continuous improvement.
April, Alain and Alain Abran. Wiley-Interscience, ©2008 314 p. $65.00 (pa)
For software managers, students, and others, April and Abran (software engineering, U. of Québec, Canada) describe software maintenance management through their model, which covers process management, request management, and evolution engineering and support. Case studies of the use of the model in industry are included. They also discuss the theoretical concepts and fundamentals of the identification and evaluation of maintenance processes. The book draws on best practices from many managers around the world and refers to the Capability Maturity Model Integration published by the Software Engineering Institute.

QA76.9 2007-943828 978-1-58603-831-1
Adaptive web sites; a knowledge extraction from web data approach.
Velásquez, Juan D. and Vasuke Palade. (Frontiers in artificial intelligence and applications; Knowledge-based intelligent engineering systems; v.170) IOS Press, ©2008 272 p. $161.00
Velásquez (industrial engineering, U. of Chile) and Palade (computing laboratory, Oxford U.) take the approach that building effective adaptive web sites is an application of systematic web mining methodology. They focus necessarily on commercial sites, explaining the operation of the web and the information typically contained in a web page. They describe the process of locating and extracting information, consolidating data and applying data mining tools such as artificial neural networks, self-organizing feature maps, K-means and K-nearest neighbor methods, decision trees, Bayesian networks, decision trees and support vector machines. They describe how to operate web information repositories and mine the web, how to use web-based personalization systems, and how to acquire and maintain knowledge extracted from web data, concluding with a proposed framework for developing adaptive web sites from extracted knowledge.

QA76.9 978-0-470-23055-8
Dependability benchmarking for computer systems.
Title main entry. Ed. by Karama Kanoun and Lisa
Kanoun (LAAS-CNRS, France) and Spainhower (IBM) have edited these articles on metrics for the dependability, reliability, availability and serviceability of computer systems. Using the most common benchmarks for extracting this data, contributors from both industrial and academic sources outline measurement protocols by describing specific examples and case studies used in such companies as IBM, Intel, Microsoft and Sun Microsystems. Designed as a tutorial for network engineers, researchers, system vendors and consultants, this book also reports the findings of the D-bench research project, which was commissioned by the European Union to develop a reliable system for benchmarking. Co-published by Wiley and IEEE/Computer Society.

An international group of contributors provided the articles of this resource, many of them presenting the results of their own work on data warehousing and mining. A sampling of article topics includes a method for recognizing entity and relation, OLAP visualization, reasoning about frequent patterns with negation, rough sets and data mining, sampling methods in approximate query answering systems, and summarization in pattern mining. Each article concludes with a list of references and a helpful list of keywords and their definitions. The articles are arranged alphabetically by first word of the article’s title, making this 4-volume work appropriate for browsing. However, a second table of contents is provided that presents the articles by topic or keyword, such as data streams, decision, evolutionary algorithms, graphs, and modeling. The articles are written in an explanatory style, each including sections of introduction, background, future trends, and conclusion, making the work especially suitable for college students and researchers.

This extremely large and comprehensive handbook on granular computing traces this relatively new discipline’s roots in artificial intelligence, interval computing and quotient space theory and explores the growing interest in this subject due to advances in bioinformatics, data mining, wireless technologies and e-commerce. Pedrycz (computational intelligence, U. of Alberta, Canada), Skowron (mathematics and computer science, Warsaw U., Poland) and Kreinovich (mathematics and computer science, U. of Texas) have edited information from leading computing experts on the basics of fuzzy set theory, interval analysis and hybrid methodologies. Students and practitioners of system modeling, operations research and bioinformatics should gain a more robust understanding of cutting-edge research in the field, especially in terms computational intelligence and neural networks.
Groups, acting on trees, including free products generated by reflections. After a brief sojourn into fundamental domains and generating sets, and stabilizers, generating sets and Cayley graphs, the symmetry groups of graphs, or bits and theorems.

This introduction to interfaces between humans and computers that exploit the human sense of touch emphasizes algorithmic perspectives that are important to researchers and developers, and discusses fundamental concepts in the psychophysics of touch, and issues in device and interface design. It also surveys current rendering algorithms and novel applications.

Lin is the Beverly W. Long Distinguished Professor in Computer Science at the University of North Carolina-Chapel Hill; Otaduyan is an assistant professor at Universidad Rey Juan Carlos (URJC Madrid), where he works at the Modeling and Virtual Reality Group (GMRV), in the Department of Computer Science.

Seven papers describe approaches and actual software for protecting the integrity of computer networks. Most involve honeypots, or related approaches. Topics include the SANS Internet storm center, the cooperation of intelligent pots to detect unknown malicious codes, and a comparison of techcrafters and makecrafters as two populations of hackers. Only the authors are indexed.

Meier has the rare ability to make complex concepts assessable to novices while simultaneously challenging the experienced. He takes a modern, geometric approach to group theory, which is particularly useful in the study of infinite groups, focusing on Cayley's theorems first, including his basic theorem, the symmetry groups of graphs, or bits and stabilizers, generating sets and Cayley graphs, fundamental domains and generating sets, and words and paths. After a brief sojourn into groups generated by reflections, he works through groups acting on trees, including free products of groups, Baumslag-Solitar groups, words and Dehn's word problems, a finitely generated infinite torsion group, ray kidder languages and normal forms, the "Lamplighter" group, the geometry of infinite groups, Thompson's group, and the large scale geometry of groups. With well-chosen illustrations and examples, Meier succeeds brilliantly in this unique approach.

This graduate text presents several methods that data analysts and statisticians can use to help them choose which models to use for different purposes. Akaike's information criterion (AIC), the Bayesian information criterion (BIC), and the focused information criterion (FIC) are explained and compared. Worked examples with real data are complemented by derivations that provide deeper insight into the methodology. For many of the examples and methods, the authors indicate how they can be applied using available software. Chapter exercises, both theoretical and data-based, are included. All data analyses are compatible with open-source R software, and data sets and R code are available from a companion web site. Readers are assumed to have prior basic knowledge of likelihood functions, applied regression, and basic matrix computations. Claeskens is affiliated with the Leuven Statistics Research Center at the Katholieke Universiteit Leuven, Belgium. Hjort teaches mathematical statistics at the University of Oslo, Norway.

Statistical meta-analysis with applications.

Hartung, Joachim et al. (Wiley series in probability and statistics)

John Wiley & Sons, ©2008 247 p. $95.00

Hartung, Guido Knapp (both statistics, Dortmund U. of Technology, Germany) and Bimal K. Sinha (statistics, U. of Maryland-Baltimore County) describe how to combine the results of two or more research studies in order to strengthen the conclusions, a process also called research synthesis, research integration, and evidence pooling. They emphasize the need for concern about the nature of the underlying studies, the nature of information available from them, and the nature of assumptions about the distribution of random variables arising in the studies. Readers are assumed to have at least a masters-level background in statistics.
Bayesian networks; a practical guide to applications.
Title main entry. Ed. by Olivier Pourret et al. (Statistics in practice)
John Wiley & Sons, ©2008 428 p. $110.00
The term “Bayesian” has become endemic in any field that requires analysis, simulation, prediction, diagnosis or virtually any other range of study that combines elements of artificial intelligence with statistics. The editors and contributors take the wide range of applications in mind as they give researchers and practitioners a solid enough introduction to the concepts behind Bayesian networks to solve practical problems. The provide 20 real life case studies in medicine, computing, natural sciences, engineering and other fields (including such topics as terrorism risk management and improving human cognition), describe the strengths and weaknesses of Bayesian networks in each, and compare their performance to such modeling techniques as neural networks, fuzzy logic and fault trees. They also offer comparisons of commercially available software packages, full citations and avenues of future research. This works well as a comprehensive self-study guide as well as a classroom text.

Mathematics of shape description; a morphological approach to image processing and computer graphics.
John Wiley & Sons, ©2008 254 p. $130.00
To reduce imaging processing problems by reducing noise and other uncertainties, Ghosh (Center for Development of Advanced Computing, India) and Deguchi (information sciences, Tohoku U.) apply morphological and set theories to develop a simple shape model using two basic shape generators. As they build their case for the shape generators (Minkowski addition and decomposition) they explain fundamental and advanced relationships between the algebraic system and shape descriptions through set theory, build image processing geo-chronology and mathematics through algebraic geometry, and provide a shape description notational scheme. This approach produces not only a very interesting framework but workable algebraic structures for shape description and comprehensive models for both shape description and the Minkowski operators. The authors advance to fascinating material on the arithmetics of geometric shape, morphological operations on nonconvex objects and the morphological decomposition and non-decomposition of binary shapes.

Numerical simulation of waves and fronts in inhomogeneous solids.
Berezovski, Arkadi et al. (World Scientific series on nonlinear science; series A; v.62)
World Scientific, ©2008 223 p. $88.00
Focusing on advanced methods and introducing important applications, this acknowledges the difficulty of moving discontinuities such as phase transition fronts or cracks. The authors (from Tallinn U. of Technology, Estonia and U. Pierre et Marie Curie, France) assert that the origin of these difficulties is a constitutive deficiency in the thermomechanical description of the corresponding irreversible processes. Leading to an uncertainty in jump relations at moving discontinuities. They aim to provide a framework for the description of moving discontinuities in solids and its implementation in a finite-volume numerical algorithm, and describe material inhomogeneities in thermodynamics, local phase equilibrium and jump relations at moving discontinuities, linear thermoelasticity, wave propagation in inhomogeneous solids, macroscopic dynamics of phase-transition fronts, two-dimensional elastic waves in inhomogeneous media, two-dimensional waves in functionally graded materials, phase transition fronts in two dimensions and the dynamics of a straight brittle crack.
is arranged alphabetically according to the chemical symbols of the compounds involved, and each entry is accompanied by findings on the ionic conduction and the type of diffusion involved, whether it be hydrogen, oxygen, gold, silver, iron or other compounds. Charts and graphs also illustrate the density and temperatures involved with each testing protocol.

QC174  2008-003224  978-0-521-64168-5

**Nonequilibrium quantum field theory.**

Calzetta, Esteban A. and Bei-Lok B. Hu. (Cambridge monographs on mathematical physics)

*Cambridge U. Press,* ©2008 535 p. $90.00

Bringing together key ideas from nonequilibrium and statistical mechanics and methodology from quantum field theory, Calzetta (physics, U. de Buenos Aires) and Hu (physics, U. of Maryland, College Park) fully address concepts and technologies. They present full derivations or detailed possibility arguments throughout, begins with the of nonequilibrium statistical mechanics and turning to dissipation, relaxation, noise and fluctuations, quantum open systems, basics of non equilibrium quantum field theory, quantum fields of time dependent backgrounds, quantum fields, functional methods and nonequilibrium quantum field theory, dissipation, entropy, noise and decoherence, entropy generation and decoherence of quantum fields, thermal kinetics and hydrodynamics, thermal field and linear response theory, and quantum kinetic field theory. They include applications to selected research, including Bose-Einstein condensates and quantum processes in the early universe. A valuable reference for graduate students and researchers in particle physics, gravitation, cosmology, atomic optical and condensed matter physics.

QC176  978-3-908451-52-5

**Diffusion and ionic conduction in oxides; data compilation.**

Title main entry. Ed. by D.J. Fisher. (Diffusion and defect forum; vs.269-271)

*Trans Tech Publications,* ©2007 445 p. $395.00 (pa)

Fisher (Trans Tech Publications, Switzerland) has edited this compilation of data on diffusion and ionic conduction in oxides for engineers and researchers who need a streamlined reference for these chemical reactions. Data
single layer to multilayered structures), non-uniform magnetization dynamics in ultra-small ferromagnetic planar elements, mode structures of ferromagnetic squares, spin waves in the inhomogeneous internal field of nano-structured rings, and localized spin wave modes excited by polarized current. Includes material which originated from different groups of experimental scientists and theoreticians dominating the field since the discovery of the effect. Distributed in North America by World Scientific.

**CHEMISTRY**

QD281 2008-459893 978-3-527-31862-9

**Modern reduction methods.**


Andersson and Munslow (chemistry, Uppsala U., Sweden) have written this guide to reductions in synthetic organic chemistry for researchers who require solutions in industrial and catalytic environments. The authors explain how reductions are the counterparts of oxidations and result from hydrogenations, hydride transfers and electron transfers, and show the quickest and easiest way to accomplish these processes in the lab. Kinetic resolutions and hydrogenolysis methods are also described for natural product chemists who require a handy reference in lab settings.

QD381 2008-009439 978-0-470-31286-5

**Advances in polymer chemistry and methods reported in recent U.S. patents.**

DeRosa, Thomas F. John Wiley & Sons, ©2008 735 p. $125.00

DeRosa (chemistry, Borough of Manhattan Community College of the City U. of New York) reviewed 2006-2007 US patents in 25 subject areas pertinent to polymer chemistry and of interest to academic, government, and industrial researchers who want to stay up to date on developments and identify trends. In his preface he points out that the audience extends beyond the borders of polymer chemistry, because with some modifications and with the structural depictions of reagents, intermediates, and products provided, the information can be applied to other material applications. The following broad subject areas are addressed: additives, adhesives, bioactive, coatings, cosmetics, dental, electroactive, energetic polymers, fibers, fluorine, gels, imaging agents, ink, liquid crystals, nanoparticles, new synthetic methods, optical materials, photoactive polymers, polymerization methods, regulators, photoresists, separations, and thermosets. The first section focuses on polymerization reactions, presenting for each entry the specifics of experimental procedures along with references to US patents, methods for preparing derivatives and analogues, and product applications. The second section emphasizes modification of existing polymeric materials.

QD476 2008-011002 978-0-470-01474-5

**Biophysical chemistry of fractal structures and processes in environmental systems.**

Title main entry. Ed. by Nicola Senesi and Kevin J. Wilkinson. (Series on analytical and physical chemistry of environmental systems) John Wiley & Sons, ©2008 323 p. $260.00

Scientists in physical, biological, and environmental sciences from Europe, the US, The Caribbean, and Australia show how fractal geometry can be used to develop a quantitative description of the complex physico-chemical systems encountered in environmental analysis. Among their topics are methods and techniques for the fractal analysis of environmental systems, fractal mechanisms in coagulation/flocculation processes, human materials, and aerosol particles. The series is devoted to providing literature reviews for practicing scientists.

QD516 2007-046640 978-0-470-09442-6

**Combustion residues; current, novel and renewable applications.**

Cox, Michael et al. John Wiley & Sons, ©2008 430 p. $200.00

Millions of tons of combustion residues, in particular fly ash and municipal waste bottom ash, are generated every year worldwide, requiring either utilization or disposal. This book reviews the traditional uses of combustion residues, then concentrates on novel products derived from the new generation of combustion ashes resulting from mixed fuels for power generation and new combustion technologies. These novel products include zeolites, ceramics, glass fibers, fire-resistant materials, and glass polyalkenoate cements for biomedical applications. The final chapter discusses some of the legislative and marketing issues that affect products from ash. The book is relevant to managers and engineers working in industries that produce combustion residues or use them in their manufacturing processes, such as power generation, municipal incineration, cement and concrete manufacturing, ceramic industries, and polymer production. The book will also be of use to academics and researchers in civil engineering, materials, and fuel and combustion, as well as regulatory
bodies and government departments. Cox is affiliated with the University of Hertfordshire, UK.

**BIOLOGY**

QH207 2007-025865 978-0-7637-3874-7
**Bioimaging; current techniques in light and electron microscopy.**
Jones & Bartlett, ©2009 440 p. $115.95
This undergraduate or graduate text serves as a professional reference for research scientists and others requiring expertise in bioimaging. While comparing a wide variety of classical and modern techniques, Chandler and Roberson first offer a brief history of microscopic image reproduction, then moved directly to the preparation of specimens for light and electron microscopy. They introduce cell structure, electromagnetic radiation and its interaction with matter, optical contrast methods (including phase, interference and polarization methods), the transmission electron microscope, the scanning electron microscope, cryogenic techniques in electron microscopy, video microscopy and electronic imaging, fluorescence microscopy, microscopic localization and the dynamics of biological molecules, imaging imaging ions and intracellular messengers, imaging macromolecules and supermolecular complexes, and image processing and presentation. The illustrations are well-chosen and helpful.

QH212 978-981-279-733-9
**In-situ electron microscopy at high resolution.**
Title main entry. Ed. by Florian Banhart. World Scientific, ©2008 311 p. $98.00
Editor Banhart (physical chemistry, U. de Strasbourg, France) has collected these research articles on in-situ electron microscopy to reflect the increased attention on sophisticated instruments that can measure on the micro, nano and atomic scales. Written for graduate students and practitioners in the field of chemistry and physics, these papers are the result of scientific research all over the world, covering such in-situ topics as electron irradiation of nanomaterials, observation of atomic defects in carbon nanostructures, transmission electron microscopy and high-resolution observations of chemical reactions between solids, liquids and gases. Studies on ion and electron beam effects on nanomaterials are also examined.

QH324 978-1-84816-258-7
**Applications of fuzzy logic in bioinformatics.**
Xu, Dong et al. (Series on advances in bioinformatics and computational biology; v.9) Imperial College Press, ©2008 225 p. $88.00
Four researchers at the University of Missouri-Columbia show how fuzzy set theory and fuzzy logic can be used to process the massive data that is generated in biology by gene sequencing and other new technologies. Their examples are measuring ontological similarity, predicting and analyzing protein structure, and analyzing microarray data. The study is suitable as a reference for researchers or as a textbook for a graduate or advanced undergraduate course. Readers and students are assumed to have a grounding in college calculus but not necessarily any background in biology. Distributed in the US by World Scientific.

QH324 2008-018595 978-0-07-159306-9
**Bioinformatics; sequence alignment and Markov models.**
Sharma, Kal Renganathan. McGraw-Hill, ©2009 320 p. $115.00
Now spurred by advances in biochips and genome research, this relatively new field has grown dramatically from the days when it was primarily used to yield detailed, accurate information on the progress of disease in the population and service levels. Sharma (chemical engineering, Prairie View A&M U.) clearly appreciates the diversity of bioinformatics and the researchers practicing it, beginning by reviewing molecular biology, probability and statistics and notation. He then covers sequence alignment and representation, including alignment of a pair of sequences, sequence representation and string algorithms and multiple-sequence alignment. He offers a wealth of information on hidden Markov models (HMMs) and specifics on gene finding and protein secondary structure, moving to detail measurement techniques applying to biochips and electrophoretic methods and the finite speed of diffusion. Sharma’s exercises with each chapter make this a good self-study guide as well as a comprehensive classroom text.

QH324 2008-022785 978-1-4129-5908-7
**Encyclopedia of stem cell research; 2v.**
This 2-volume reference offers an A-Z encyclopedia of articles discussing the many issues related to stem cell research. Written for the general reader, the articles describe the medical and scientific aspects of the research, the
history of stem cell science, the main institutions involved, and biographies of the main scientists involved. Volume Two contains the articles from R-Z and a group of lengthy appendices, including a glossary, list of scientists, an overview of Federal research funding and oversight, the Congressional hearings on stem cells and cloning, and reports to the President’s council on bioethics. The contributors are scientists and independent scholars worldwide. Both editors are at with the Stem Cell and Regenerative Medicine Center of the U. of Wisconsin, Madison.

ANATOMY, PHYSIOLOGY

QM23 978-0-443-06684-9
Gray’s anatomy; the anatomical basis of clinical practice, 40th ed. (includes online access)
Title main entry. Ed. by Susan Standring.
Churchill Livingstone, ©2008 1551 p. $199.00
The new edition of this essential work, updated with care, is worthy of the honor of 150-year anniversary edition. Containing 1800 superb color anatomical images, a wealth of supporting radiograph, CT, microphotography, MR, and other images, and a completely reorganized and revised text, the volume is both thorough and clearly organized. The artwork is especially noteworthy, with care given to clarity and consistency throughout. Standring (emeritus in anatomy at Kings College, London, the UK) edited the work in conjunction with 9 section editors, all at institutions in the UK. Massive in size—it’s 9.25x12” and 2.75” thick—the volume is beautifully printed and bound, and authoritative in content, making this a worthwhile investment for the clinician.

QP303 2008-003601 978-0-8247-5831-8
Applied biomedical engineering mechanics.
Title main entry. Ed. by Dhanjoo N. Ghista.
CRC / Taylor & Francis, ©2009 528 p. $139.95
Already proven in the development of prosthetics, biomedical engineering continues to expand in scope and quality. This collection of articles incorporates materials from solid mechanics, fluid mechanics, dynamics and vibrations, control systems, and mathematical modeling. Contributors use a problem-based format to explain diagnostic and intervention procedures based on analysis of physiological and organs systems. They provide biomechanical guidelines for internal fixation of bone and spinal fractures as well as a treatment of herniated disks, heart function, heart structures, noninvasive determination of aortic pressure, detection of infarcted myocardial segments, treatment of degenerated heart valves, modeling of lung ventilation, and analysis and treatment of other human anatomical structures and processes. Along with applications they provide a strong background in theory and the most recent research cardiological engineering, pulmonary engineering, glucose and insulin regulation, orthopedic engineering, and engineering related to fitness and sports mechanics.

QP514 2007-050369 978-0-470-84531-8
Essentials of chemical biology; structure and dynamics of biological macromolecules.
Miller, Andrew and Julian Tanner.
John Wiley & Sons, ©2008 573 p. $75.00
With a focus on understanding the way biology works at the molecular level, this relatively new field of study provides a detailed understanding of the synthesis, structures and behaviors of biological macromolecules and molecular lipid assemblies that are primary constituents of all cells. Miller (chemistry, Imperial College London) and Tanner (biochemistry, U. of Hong Long) assume readers have experience in physical and organic chemistry as they introduce the structures of biological macromolecules and lipid assemblies, chemical and biological synthesis, molecular biology as a way of studying chemical biology, electronic and vibrational spectroscopy, magnetic resonance, diffraction and microscopy, molecular recognition and binding, kinetics and catalysis, mass spectrometry and proteomics, and molecular selection and evolution. This is also suitable for biochemists, molecular biologists, and professionals within medicine pharmaceutical industries. This is extremely well-illustrated.

MEDICINE (GENERAL & PUBLIC ASPECTS)

R858 2008-023343 978-1-60566-050-9
Medical informatics; concepts, methodologies, tools, and applications; 4v.
Title main entry. Ed. by Joseph Tan.
Medical Information Science Reference, ©2009 2672 p. $2,495.00
An international group of contributors provide the articles of this resource, many of them presenting the results of their own work in the field. Each article concludes with a list of references and a helpful list of keywords and their definitions. The material is grouped into eight broad areas: fundamental concepts and theories; development and design; tools and technologies; applications, organizational and...
social implications, managerial impact, critical issues; and emerging trends. A sampling of topics includes knowledge management in hospitals, nonparametric decision support systems in medical diagnosis, PDA usability for telemedicine support, computerization of primary care in the US, and developing trust practices for e-health. Representing an international viewpoint, the articles are written in an explanatory style, each including sections of introduction, background, future trends, and conclusion, making the work especially suitable for college students and professionals. Medical Information Science Reference is an imprint of IGI Global.

R859 2007-051645 978-1-59904-996-0
Advancing artificial intelligence through biological process applications.
Title main entry. Ed. by Ana B. Porto Pazos et al.
Medical Information Science Reference, ©2009 436 p. $225.00
Artificial intelligence (AI), in simulating features of biological processes in computational models, offers clues to the complex functioning of the nervous system and applies these to real-life problems, e.g., Turing’s COLOSSUS machine which deciphered coded Nazi messages. Pazos (computer science, U. of A Coruña, Spain) and international, multidisciplinary contributors review recent advances in AI models based on better understanding of biological information processing. Application examples include genetic algorithms, artificial neural networks, and a bio-inspired design for an information grid system. The 20 chapters include future research trends, further reading, and a glossary of key terms. The text is suitable for students and researchers in bioinformatics and other fields. Medical Information Science Reference is an imprint of IGI Global.

T55 978-1-4200-8051-3
Safe use of chemicals; a practical guide.
Dikshith, T. S. S.
CRC / Taylor & Francis, ©2009 289 p. $99.95
Suitable for the library of virtually any laboratory, this comprehensive reference fills the gap between data sheets and chemical safety encyclopedias. Dikshith, an expert on environmental health and chemical safety, makes good use of a wide variety of sources to explain the characteristics of solvents, pesticides, metals, air pollutants, and toxic gases and drugs, as well as other substances commonly found in laboratories. He ensures that entries are accessible to non-experts as he explains chemical substances and their categorization, elements of toxicology and chemical safety, industrial and laboratory use of chemicals, the relationship between chemical substances and cancer, and the effects of chemical substances on neurotoxicity and nephrotoxicity. He includes appendices on labeling, handling, incompatible chemical substances, and storage, along with a glossary and references.

T57 2008-007571 978-1-59904-887-1
Handbook of research on modern systems analysis and design technologies and applications.
Title main entry. Ed. by Mahbubur Rahman Syed and Sharifun Nessa Syed.
Information Science Reference, ©2009 668 p. $215.00
Sixty-seven international academics and researchers contribute 35 chapters conveying the current state of knowledge regarding systems analysis and design. The material is organized into eight topic areas covering system development methodologies, modeling processes, agile software development, system design and considerations, object oriented development, design applications, medical applications, and educational applications. This resource text is designed for practitioners, educators, advanced undergraduate and graduate students, researchers, and professionals in software/systems engineering, programming, analysis, and design; business/management information technology and systems; computer networking technology; and mobile computing and communications technology.

T58 2008-013084 978-0-8493-8517-9
The engineering handbook of smart technology for aging, disability, and independence.
Title main entry. Ed. by Abdelsalam (Sumi) Helal et al.
John Wiley & Sons, ©2008 944 p. $275.00
Scientists and engineers in computer and information fields survey some high-technology approaches to allowing elderly people and those living with disabilities to maintain independence. A first section sets out definitions, classifications, and policies for both the population and the technologies. Other themes include users and needs, human-machine interaction an alternative communication, assistive robotics, user mobility, smart environments, cyber-infrastructures, and emerging standards and guidelines.

THERAPEUTICS

RM950 2008-009568 978-0-471-71155-1
The engineering handbook of smart technology for aging, disability, and independence.
Title main entry. Ed. by Abdelsalam (Sumi) Helal et al.
John Wiley & Sons, ©2008 944 p. $275.00
Scientists and engineers in computer and information fields survey some high-technology approaches to allowing elderly people and those living with disabilities to maintain independence. A first section sets out definitions, classifications, and policies for both the population and the technologies. Other themes include users and needs, human-machine interaction an alternative communication, assistive robotics, user mobility, smart environments, cyber-infrastructures, and emerging standards and guidelines.
**Enterprise architecture A to Z; frameworks, business process modeling, SOA, and infrastructure technology.**

Minoli, Daniel.

*CRC Press, ©2008 481 p. $79.95*

Drawing on his extensive technical and managerial experience at telecom/networking providers and financial companies, Minoli enlightens senior managers and other decision-makers on designing and managing cost-effective, state-of-the-art information technology (IT) infrastructures and data centers. First he surveys enterprise architecture planning goals, roles, mechanisms, and business modeling and application development via Service-Oriented Architecture (SOA) modeling. Part II focuses on infrastructure technologies including high-speed communications mechanisms (e.g., SANs, Gigabit Ethernet, metro Ethernet); Internet and WAN communication technologies; network virtualization via SOA modeling; and grid computing and server virtualization. The text helpfully includes diagrams of IT conceptual frameworks and models, and a glossary.

**T58 2008-19461  978-1-60566-088-2**

**Selected readings on the human side of information technology.**

Title main entry. Ed. by Edward J. Szewczak.

*Information Science Reference, ©2009 525 p. $195.00 (pa)*

The planning and execution of electronic resources within libraries is analyzed in this reference volume, which is geared to students and practitioners of library science. Szewczak (Canisius College) has edited these essays from contributors all over the world which focus on managing the lifecycles of these resources, with explicit tips on how to compare, order and catalog each database. Each application is reviewed by the contributors in terms of Web presentation, user support and independent evaluations as well.

**T174 2008-019075  978-1-4200-6019-5**

**Nanotechnology and the environment.**

Sellers, Kathleen et al.

*CRC / Taylor & Francis, ©2009 281 p. $99.95*

Environmental engineer and chemist Sellers and her co-authors provide the fundamentals professionals need to assess and understand the life cycle of nanomaterials and the effects of those materials in the environment. They focus on the most common nanomaterials including titanium dioxide, zero valent iron, silver, carbon black, fullerenes and carbon nanotubes, following those materials from their manufacture and use to their fate in the environment and in our bodies. With close attention to methods and regulations they define nanoscale materials and their properties, overview I environmental regulations, analyzed nanoparticles in the environment, their treatment in wastewater, their potential ecological hazards, their toxicology and risk, their use in pollution control, and means of balancing their risks and rewards.

**ENGINEERING (GENERAL, CIVIL)**

**TA23 2008-013220  978-0-309-11483-7**

**The offshoring of engineering; facts, unknowns, and potential implications.**


*National Academies Press, ©2008 230 p. $54.00 (pa)*

The National Academy of Engineering has commissioned this study of the outsourcing of engineering research from the United States to affiliated and non-affiliated entities, which explores whether or not the recent decline of manufacturing employment is caused by this globalization. The NAE presents an objective look at this shift in technology, providing comprehensive data sets for engineers and policymakers who are confronted with pressures to compete in increasingly lean industries. The effects of "offshoring" are also examined in the IT industry, where recent expansions in China have affected the flow of technological progress in unexpected ways.

**TA165  978-0-87849-382-1**

**Measurement technology and intelligent instruments 8.**

Title main entry. Ed. by Wei Gao et al. (Key engineering materials; vs.381-382)

*Trans Tech Publications, ©2008 664 p. $304.00 (pa)*

Gao (nanomechanics, Tohoku U., Japan), Yasuhiro Takaya (nanomechanics, Osaka U., Japan), Yongsheng Gao (nanomechanics, Hong Kong U. of Science and Technology) and Michael Krystek (nanomechanics, Physikalisch Technische Bundesanstalt) have edited this collection of 163 research articles on new measurement technologies in the manufacturing sector, combining both basic research projects with applied systems already used in industry. Written for fellow engineers and students in manufacturing sciences and nanotechnology, these papers cover such topics as micro and nano-metrology, precision measurement advances, online and in-process measurement, surface metrology, optical metrology and image
processing, biomeasurement, sensor technology and intelligent measurement and instrumentation. The latest methods of signal processing and associated algorithms are also discussed.

TA165  2008-017675  978-0-470-86691-7

Smart sensor systems; principles and practice.
Title main entry. Ed. by Gerard C.M. Meijer.
John Wiley & Sons, ©2008  385 p. $110.00

Assembling material used in a multidisciplinary course taught at Delft University of Technology since 1995, researchers in mathematics and physics present the basic principles of advanced sensor systems for designers and users of them. The topics include interface electronics and measurement techniques for smart sensor systems, physical chemosensors, and universal asynchronous sensor interfaces.

TA167  2008-025079  978-0-8058-6151-8

Applications of cognitive work analysis.
Title main entry. Ed. by Ann M. Bisantz and Catherine M. Burns.
CRC / Taylor & Francis, ©2009  383 p. $89.95

Bisantz (industrial and systems engineering, U. of Buffalo, State U. of New York) and Burns (systems design engineering, U. of Waterloo, Canada) assemble 13 chapters that outline the five phases of cognitive work analysis for use in the analysis and design of complex, human-technology systems. Contributors working in engineering and psychology in the US and Canada provide examples of all of the phases of cognitive work analysis in a variety of real-world domains to show the application of techniques in practice. Analysis in an air traffic control simulation, health care system, and other settings is included, as are applications of work domain, control task, social-organizational analysis, and strategies analysis, and techniques from other research and design traditions.

TA168  2008-026812  978-1-58488-769-0

Multi-resolution methods for modeling and control of dynamical systems.
Singla, Puneet and John L. Junkins. (Chapman & Hall/CRC applied mathematics and nonlinear science; 16)
Chapman & Hall/CRC, ©2009  299 p. $119.95

This book examines existing approximation methods and explores methods for developing new methods for the approximate solution of large-scale dynamical system problems. It offers a framework for understanding the advantages, drawbacks, and application areas of algorithms for input-output approximation. It also presents novel adaptive learning algorithms that can be adjusted in real time to the various parameters of unknown mathematical models. The book brings together ideas from classical orthogonal function approximation, neural network input-output approximation, finite element methods for distributed parameter systems, and various approximation methods employed in adaptive control and learning theory. Computational implications are illustrated with benchmark problems. An appendix of color charts is included.

TA342  978-1-60021-977-1

Leading-edge applied mathematical modeling research.
Title main entry. Ed. by Matías P. Alvarez.
Nova Science Publishers, ©2008  384 p. $69.00

This collection of data and research on mathematical modeling concentrates on applications in the fields of environmental processes, manufacturing and industrial systems. Nova staff editor Alvarez (whose credentials are not listed) has assembled these highly technical papers to focus on the latest innovations in the field such as using stochastic flows to study ocean turbulence, and intelligent manufacturing systems based on Petri net modeling. These articles will be of interest to mathematics and engineering practitioners in associated research fields.

TA403  978-0-87170-867-0

Elements of metallurgy and engineering alloys.
Title main entry. Ed. by F.C. Campbell.
ASM International, ©2008  656 p. $134.00

Covering fundamentals of metallurgy and the specifics of major engineering alloys, this reference is for anyone who deals with metals, including designers, structural engineers, materials and process engineers, manufacturing engineers, and production personnel. It does not aim to replace handbooks on engineering alloys; rather, it allows readers to compare the metallurgy, properties, and applications of the most important engineering alloy systems. Part I covers fundamentals of physical and mechanical metallurgy. Part II deals with specific ferrous and nonferrous metals and their alloys. The last chapter deals with metal-matrix composites. Appendices list conversions, crystalline system calculations, and crystallographic planes and directions. A first course in materials science is helpful but not necessary to understand the book. Information on the author is not given.
Materials characterization; introduction to microscopic and spectroscopic methods.
Leng, Yang.

John Wiley & Sons, ©2008 337 p. $110.00

Materials science and its techniques have stretched across a wide range of disciplines, a condition that has also stretched the knowledge and skills of professionals and students alike. Leng (materials science, Hong Kong U. of Science and Technology) provides a range of content and level of accessibility suitable for both groups of readers, keeping the theoretical down to a minimal level in terms of mathematics and physics. He relies on examples of characterization techniques that focus on the interpretation and analysis of outputs as well as excellent exercises that lend themselves well to self-study as well as classroom use, covering light microscopy, x-ray diffraction, transmission electron microscopy, scanning electron microscopy, scanning probe microscopy. His instructions for analysis include x-ray spectroscopy for elemental analysis, electron spectroscopy and secondary ion mass spectrometry for surface analysis, vibration spectroscopy for molecular analysis and thermal analysis. The illustrations are exceptionally well-chosen.

Carbon nanotube devices; properties, modeling, integration and applications.

Title main entry. Ed. by Christofer Hierold. (Advanced micro & nanosystems; 8)

Wiley-VCH, ©2008 363 p. $230.00

Academic and industrial scientists in Europe and Canada survey some possible applications of the wee tubes in mainstream technology. Among them are microelectronics, transducers, sensor-based devices, and field emission devices. They also consider research methods, such as characterizing nanotubes by optical spectroscopy, and multiscale modeling and simulation for fluid mechanics at the nanoscale.

Electrochemical impedance spectroscopy.

Orazem, Mark E. and Bernard Tribollet. (Electrochemical Society series)

John Wiley & Sons, ©2008 523 p. $100.00

Orazem (chemical engineering, U. of Florida) and Tribollet’s (Centre National de la Recherche Scientifique, France) text provides the background and training suitable for application of impedance spectroscopy to a broad range of applications, such as corrosion, biomedical devices, semiconductors and solid-state devices, sensors, batteries, fuel cells, electrochemical capacitors, dielectric measurements, coatings, electrochromic materials, analytical chemistry, and imaging. Presenting generally applicable fundamentals rather than detailed treatment of applications, the book is suitable as a textbook for graduate students in electrochemistry, materials science, and chemical engineering, and as a self-study guide and reference for scientists and engineers. An opening section on essential background—complex variables, differential equations, statistics, electrical circuits, electrochemistry, and instrumentation—is followed by sections on experimental techniques; process models; interpretation strategies; statistical analysis; an integrated approach to impedance spectroscopy combining experimental observation, model development, and error analysis; and reference materials.

Nanomaterials; an introduction to synthesis, properties and application.

Vollath, Dieter.

Wiley-VCH, ©2008 352 p. $115.00 (pa)

Vollath draws material he uses in lectures as a consultant to industry and at Graz (Austria) University of Technology to provide engineers an elementary introduction to nanomaterials. The selection of topics is necessarily shaped by his personal interests and experience, he explains, but hopes they are ones of use to most readers. They include surfaces in nanomaterials, optical properties, nanofluids, and characterization.

Plasma nanoscience; basic concepts and applications of deterministic nanofabrication.

Ostrikov, Kostya (Ken).

Wiley-VCH, ©2008 538 p. $145.00

Clearly written and of interest to advanced undergraduates and graduate students, as well as to specialists, this volume presents an overview of the science and uses of plasma nanoscience, its history, current trends, and future prospects. Ostrikov (CSIRO Materials science and engineering, Australia and the U. of Sydney) discusses the approach of plasma-generated building units to create nanoassemblies in a variety of contexts and with consideration of related issues, especially those that concern the surface science of plasma-exposed surfaces, the use of nanodot arrays, and various nanoscale objects which focus ion fluxes. The applications, benefits, and advantages of the processes described.
are stressed; a lengthy conclusion summarizes the various situations suitable for using low-temperature plasmas for nanoscale materials synthesis and processing. The volume is well illustrated with diagrams and other visual aids.

**Science and technology of polymer nanofibers.**
Andrady, A.L.

*John Wiley & Sons*, ©2008 403 p. $100.00

With a broad range of practical applications such as filters, fabrics, sensors, catalysts, scaffolding, drug delivery, and wound dressings, these materials seem to have endless possibilities. Practitioner and academic Andrady shares other researchers’ enthusiasm for polymer nanofibers and shares his expertise in the underlying science and technology, along with an expert assessment of polymer nanofibers’ potential for commercialization. He begins by describing electrostatic spinning and nanofibers’ application areas, then introduces polymer solutions including macromolecular models and concentrated polymer solutions. He goes into detail about electrospinning basics, and factors affecting nanofibers’ quality, then describes a characterization of nanofibers and mats, composite nanofibers’, biomedical applications, applications of Nana fiber mats as sensors and filters, and describes recent developments in electrospinning. The possibilities are fascinating, and Andrady includes plenty of tantalizing ideas on tissue engineering and biomedical applications.

**Principles of nanophotonics.**
Title main entry. Ed. by Motoichi Ohtsu et al. (Series in optics and optoelectronics)
*Chapman & Hall/CRC*, ©2008 228 p. $79.95

Instructors affiliated with the University of Tokyo and other Japanese schools outline physically intuitive concepts of nanophotonics using a novel theoretical framework that differs from conventional wave optics. Led by a major innovator in the field of nanophotonics, the authors describe the operational principles of nanophotonic devices based on the control of excitation transfer between nanomaterials via optical near fields, nanophotonic fabrication methods based on the localized photon model, and nanophotonic information and communication systems than can overcome the integration-density limit imposed by the diffraction of light with ultra-low-power operation.

**High-level data fusion.**
Das, Subrata.

*Artech House*, ©2008 373 p. $129.00

Master practitioner Das explains cutting-edge diffusion techniques that help professionals develop powerful situation assessment skills, providing them the tools they need to design high-level fusion services, select algorithms and software, simulate performance, and evaluate systems. He assesses object and situation fusion processes that handle uncertainties as well as emerging technologies such as particle filtering, spatiotemporal clustering, net-centricity, agent formalism, and distributed fusion. He also explains models, architecture, and data through target tracking, target classification and aggregation, model base situation assessment, modeling time for situation assessment, nonlinear and hybrid models, decision support, linear effusion models, cognitive agents for data fusion, and distributed fusion. Das provides all the necessary algorithms and mathematical preliminaries. This is also suitable as a classroom text or supplemental.

**Solid-state lasers; properties and applications.**
Title main entry. Ed. by Thomas O. Hardwell.
*Nova Science Publishers*, ©2008 227 p. $79.00

This work gathers new research on solid state lasers, by academic researchers in Turkey, the US, Singapore, China, Japan, Germany, Russia, Poland, and Malaysia. There are seven chapters in all, covering topics such as thermal effects and power scaling of diode-pumped solid-state lasers, novel bismuth-activated glasses with infrared luminescence, and fabrication and characterization of InP-biased diode lasers. Other subjects examined are lead chalcogenide solid solution semiconductors, long-wavelength quantum-dot lasers, and transverse modes in nitride vertical-cavity surface-emitting diode lasers. B&w and color images are included. Information on the editor is not given.

**Silicon photonics; the state of the art.**
Title main entry. Ed. by Graham T. Reed.
*John Wiley & Sons*, ©2008 330 p. $150.00

Reed (optoelectronics, U. of Surrey, UK) compiles nine chapters that form an overview of silicon photonics, in this volume directed at photonics engineers and professionals working with optical networks, optical communications, and semiconductor electronics, as well as graduate students. An international group of computer scientists and engineers share their expertise with chapters on silicon photonics, waveguides, material properties, and fundamental characterization. Sandberg, for example, introduces silicon photonics, focusing on waveguides, material properties, and fundamental characterization. Sandberg, for example, introduces silicon photonics, focusing on waveguides, material properties, and fundamental characterization.
and electrical engineers discuss the integrated photonic circuit, silicon photonic and photonic bandgap waveguides, mechanisms for optical modulation in silicon, silicon-based light sources, optical detection technologies, passive devices, photonic and electronic integration approaches, and applications in communications and sensors.

ENVIRONMENTAL TECHNOLOGY

TD193 2007-050817 978-1-60456-249-1
Laser applications in environmental monitoring.
In the opening chapter of this collection, Mitev (CSEM Switzerland) explains the science and math behind atmospheric laser radars (lidars) and describes the three main atmospheric lidar techniques. The remaining four chapters discuss airborne lidar bathimetry for coastal zone monitoring, laser-induced fluorescence for hydrographic measurements, soil analysis by laser-induced breakdown spectroscopy, and three-dimensional laser rangefinding scans of underground cavities. Black and white images and color charts are provided.

BUILDING CONSTRUCTION

TH880 2008-030633 978-0-07-154601-0
Green building through integrated design.
Yudelson, Jerry. (Greensource) McGraw-Hill, ©2009 261 p. $65.00
A licensed engineer and head of a Tucson, Arizona-based green building consultancy, Yudelson has spent his professional career engaged with energy and environmental issues; he has extensive experience with the design, construction, and operation of numerous residential and commercial green buildings. Written for commercial and institutional building designers, owners, and builders, Yudelson’s text explains the process of building a certified green building, including project costs; the business case for green buildings; green technologies; rating and certification systems, and the certification process; integrated project management; design considerations and development; construction; and operations. It includes case studies of 30 LEED Platinum projects in the U.S. and Canada, and interviews with designers and builders, which highlight the relevant issues, difficult challenges, and problem-solving techniques involved in the integrated design process. Illustrated throughout with b&w photographs, diagrams, charts, and tables.

MECHANICAL ENGINEERING & MACHINERY

TJ211 2007-041223 978-1-60021-997-9
Robotics research trends.
Nova Science staff editor Guo has compiled research papers from 27 contributors from around the world on the subject of research trends in robotics, and how this once futuristic concept has evolved into practical applications in everyday life. Topics from these researchers include 3-D reconstruction from digital imaging, vision surveillance techniques in robotics, adaptive swarms and the architecture for unmanned marine vehicles. Written for engineers in the field, these highly technical papers also concentrate on exciting new applications of robotics, such as “smart” prosthetic limbs.

TJ211 978-1-84816-006-4
Robotics; state of the art and future challenges.
Bekey, George et al. World Scientific, ©2008 144 p. $58.00
The authors (from the U. of Southern California, U. of Pennsylvania, Rensselaer Polytechnic Institute, Ohio State U., and the National Aeronautics and Space Administration in the United States and the Korea Aerospace U. in South Korea) describe the state-of-the-art in six key areas of robotics research and development around the world: robotic vehicles; space robotics; humanoid robots; industrial, service, and personal robots; robotics in biology and medicine; and networked robots. Each chapter defines the area; discusses its importance; describes major applications with examples; outlines present and future challenges; summarizes major activities in the United States, Korea, Japan, and Europe; and provides a qualitative comparison of those research and development activities.

TJ808 2007-040768 978-1-59726-103-6
Energy for sustainability; technology, planning, policy.
Randolph, John and Gilbert M. Masters. Island Press, ©2008 790 p. $85.00
Once a startling new concept, sustainability has moved to the core of discourse about global development, economies at all scales, and equity. Randolph (environmental planning, Virginia Polytechnic Institute and State U.) and
Masters (environmental engineering emeritus, Stanford U.) offer an interdisciplinary and encyclopedic approach seeking to inform policy makers and technologists in equal shares. They describe energy patterns and trends, including the energy imperative and patterns of use, resources and sustainability, and energy futures; energy fundamentals, including energy science, and life-cycle assessment; buildings and energy, including energy efficiency, solar energy, and moving toward whole-community energy; sustainable electricity, including centralized electric power systems, distributed energy resources, photovoltaic systems, and large scale renewables (i.e., wind and solar); sustainable transportation and land use, including biofuels, biomass, and whole community energy; and energy policy and planning, including market transformation and changes in US state and local policies.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK5102 2008-025443 978-1-4200-4601-4 Adaptive signal processing in wireless communications. Title main entry. Ed. by Mohamed Ibnkahla. (The electrical engineering and applied signal processing series) CRC / Taylor & Francis, ©2009 504 p. $99.95

Contributors from a fair sampling of the industrial world offer electronic engineers and related professionals a tutorial survey of adaptation in the physical layer of wireless and mobile communications systems. Their topics include modeling and identifying adaptive channels adaptive receiver design and equalization, modulation and coding, multiple-input/multiple-output systems, adaptive and opportunistic beam forming, and cooperative diversity.

TK5102 2008-009173 978-1-4200-6702-6 Applied signal processing; concepts, circuits, and systems. Hamdy, Nadder. CRC / Taylor & Francis, ©2009 517 p. $99.95

Improvements in digital circuitry and processors have prompted a significant switch to digital signal processing techniques rather than the traditional analog. However, the two share important concepts and ideas useful in design and applications. Hamby (electronics and signal processing, Arab Academy of Science and Technology, Egypt) presents a unified treatment of both analog and digital signal processing, giving a solid background of both, before describing analog a signal processing and filter design in detail, moving to data converters, digital signal processing, digital filter design, multi rate signal processing, discrete time transforms, digital signal processors, and digital signal processing systems. He includes an array of circuits and related material, as well as a wealth of real-life examples and applications. The result serves as a classroom text and also as a professional reference for engineers entering into the digital world.

TK5102 2008-004941 978-0-470-18092-1 Digital signal processing techniques and applications in radar image processing. Wang, Bu-Chin. (Information and communications technologies) John Wiley & Sons, ©2008 338 p. $100.00

Wang, a research engineer specializing in DSP processor design, has written this textbook for radar imaging for both engineering students and colleagues. The author covers the fundamentals of DSP techniques and applications, including signal characteristics in analog and digital domains, advance signal sampling, interpolation techniques, antenna theory and the algorithms used for radar image processing. Satellite image files processed by Range-Doppler and Stolt interpolation algorithms are also presented, and MATLAB is used to display these signals during the various processing stages.


While at Kiev University and Bilkent University in Turkey, statistician Anisimov developed switching processes for describing the operation of stochastic systems with the property that their development in time varies spontaneously at some random points of time that may depend on the previous system trajectory. He looks at the limit theorems of averaging principle and diffusion approximation type in the case of fast switching, limit theorems for switching processes with slow switching, and the asymptotic aggregation of switching processes in different time scales.


Zhang et al. bring together 15 chapters in this guide to security issues in wireless mesh networks, by computer science and electrical engineering researchers from around the world. They address issues such as intrusion detection,

TK5103  2008-023925  978-0-07-148256-1

Wireless mesh networking.
Aggèlou, George.
McGraw Hill, ©2009  525 p. $99.95
This volume explains the theory and applications of in-demand wireless mesh networks that provide wireless broadband access over wide areas. It covers basic principles, standards, and aspects of network operation such as antenna technologies and energy management. Aggèlou (Ministry of Transport and Communications, Athens, Greece) also describes how and why the technology works, capacity principles, security issues, access control, and autonomic software.

TK5105  2008-008472  978-1-59904-855-0

Handbook of research on information security and assurance.
IGI Publishing, ©2009  557 p. $265.00
The contributors of these 47 articles assure us that threats to information security and assurance are very real, and that only constant and quick attention will save valuable data and information. They focus on enterprise security, addressing such issues as reasonware, the benefits of vigilance, holistic approaches, a research framework, and an audit-and-control approach to risk management. Other articles address security approaches, frameworks, tools (including their use, design and protocols), techniques, policies and procedures, and a full complement of ways to mitigate safety risks, including terrorism and bioterrorism. Each article includes full references, making this a good source of research topics as well as a handbook.

TK5105  2008-026336  978-0-470-05537-3

Policy-driven mobile ad hoc network management.
Chadha, Ritu and Latha Kant.
John Wiley & Sons, ©2008  391 p. $115.00
With widespread applications in consumer markets and the military, the basic concepts seem to have settled down and standards are beginning to emerge. The authors, both expert consultants, focus on increasing automation in the management of mobile ad hoc networks (MANETs), starting with a brief technical and terminology interview. The describe policy language and frameworks, policy conflict detection and resolution, and management of networks, configuration, fault, performance, and security. They offer comprehensive materials on devices, software, and appropriate design, along with technical foundations when needed, lessons learned, classical and state-of-the-art approaches, and directions for upcoming research. Although written primarily as a professional reference, this also works well as a self-study guide and is also applicable to classroom use.

TK5105  2008-036070  978-1-58705-469-3

Voice over IP security.
Park, Patrick.
Cisco Press, ©2009  361 p. $55.00 (pa)
This book analyzes current and future threats to voice-over-IP (VoIP) security, evaluates security products, describes methods for protection, and outlines the best practices for architecture design and service deployment. The book not only covers technology concepts and issues, but also provides detailed design solutions featuring current products and protocols, so that readers can deploy a secure VoIP service in real world situations. Chapter summaries are included. The book is for managers and engineers planning to deploy VoIP systems, systems engineers and architects, network administrators, security consultants, and developers who implement VoIP products or solutions. Park is a VoIP test engineer.

TK6575  978-1-59693-347-7

Radar system analysis, design, and simulation. (CD-ROM included)
Kang, Euyung W. (The Artech House radar library)
Artech House, ©2008  367 p. $139.00
Kang offers an authoritative and highly-technical guidebook for radar system engineers who want to optimize system performance and for graduate students who wish to learn radar system design. The author is a former instructor with several years of experience with Goodyear Aerospace Corp., Samsung, ITT Federal Laboratories, and others. The book discusses the need to master system analysis, verification, and design skills, as well as the ability to verify correct analyses through computer simulation. The examples used in this introductory book are extremely detailed and supported by numerous illustrations. A CD-ROM with more than 200 simulation and implementation tools, written in C++, is included.

TK7867  2007-048859  978-0-8493-7617-7

Electronic circuit design; from concept to implementation.
Kularatna, Nihal et al.
CRC Press, ©2008  483 p. $99.95
Drawing on 30-plus years of experience in professional and research environments, electronics engineer Kularatna (U. of Waikato, New Zealand) presents a text to aid electrical engineering students and professionals in understanding the total design process and the development of prototypes which require little to no debugging prior to release. The work addresses several areas of analog and mixed signal design, including power supply design, signal conditioning, essentials of data conversion, and signal processing, while also summarizing a large amount of information from theory texts, application notes, design bulletins, research papers, and technology magazine articles. While Kularatna serves as the primary author, four subject area experts from New Zealand, Australia, and Korea also contribute material on the design process; configurable logic blocks for digital systems design; oscillators, phase lock loops, and direct digital synthesis; and system-on-a-chip design and verification.

TK7871 2008-008473 978-1-59904-988-5

Title main entry. Ed. by Chen Sun et al.
Information Science Reference, ©2009 561 p. $195.00

Featuring chapter contributions from leading experts in academia and industry, this reference explains terms, concepts, methods, and applications related to smart antennas in various wireless systems. Chapters are in sections on smart antenna combining algorithms, performance issues, applications of smart antennas, and experiments and implementations. Some applications described include smart antennas for code division multiple access systems, cross-layer performance of scheduling and power control schemes, mobile ad hoc networks exploiting multi-beam antennas, and smart antennas for automatic radio frequency identification readers. Detailed chapter overviews are included. Sun is affiliated with the Ubiquitous Mobile Communications Group at the National Institute of Information and Communications Technology in Japan. The book will be useful to those involved in computer networking, wireless data transfer, internet connectivity, and dataflow.

TK7871 2008-022523 978-1-891121-73-9
Microstrip and printed antenna design, 2d ed.

Bancroft, Randy.

SciTech News
data aggregation systems within wireless sensor networks; the requirements and challenges of privacy preserving deployments; intrusion detection systems; sensor network node identity properties and identity verification mechanisms; and the functionality of the less resource-demanding cryptographic algorithms.

TK7875  978-1-86094-862-6

Advances in multiphysics simulation and experimental testing of MEMS.
Title main entry. Ed. by Attilio Frangi et al. (Computational and experimental methods in structures; v.2)
Imperial College Press, ©2008 489 p. $142.00

Microelectromechanical systems (MEMS) and nanoelectromechanical systems (NEMS) may be ubiquitous already, but there is still plenty of room for more, and for better simulation and experimental testing procedures. These 13 extended chapters cover the newest topics in multiphysics simulation and testing, including the challenges in modeling liquid and gas flows in micro/nano devices, using kinetic equations for MEMS and NEMS, applying the direct simulation Monte Carlo method to gas-filled MEMS devices, simulation of micro-fluidics, gas damping in MEMS using fast integral equations solvers, experimental techniques for damping characterization, nonlinear dynamics of the electrostatically actuated MEMS, couple deformation analysis of thin MEMS plates, assessment of Coulomb and Casimir forces, numerical simulation of bioMEMS, continuous modeling of multiphysics problems of Microsystems for topology optimization, mechanical characterization of polysilicon, and testing of nano wires and tubes. Distributed by World Scientific.

TK7875  2008-017717  978-0-8155-1577-7

Fabrication and design of resonant microdevices.
Bahreyni, Behraad. (Micro & nano technologies; 3)
William Andrew Publishing, ©2008 181 p. $165.00

Bahreyni (engineering science, Simon Fraser U., Canada) walks fellow engineers through the various considerations when designing resonant devices destined to be mass produced and used as part of the mechanical dimension of micro-electro-mechanical systems (MEMS). These include micro-fabrication, modeling dynamics, damping mechanism, interfacing, and packaging. His examples of applications are resonant microsensors, signal processing, and time and frequency references.

TK7875  2008-459617  978-3-527-31494-2

Reliability of MEMS.
Title main entry. Ed. by Osamu Tabata and Toshiyuki Tsuchiya. (Advanced micro & nanosystems; v.6)
Wiley-VCH, ©2008 303 p. $230.00
Tabata and Tsuchiya (micro engineering, Kyoto U., Japan) have edited this textbook for students and researchers in the field of micro and nanosystems (AMN) to reveal new technologies and devices that control and shape our world at an atomic level. Concentrating on the reliability of MEMS materials and devices, contributors from all over the world address such relevant topics as inertial sensors, the Eco Scan MEMS resonant mirror and the uniaxial tensile test for MEMS materials. The performance, reliability and safety of these micromechanical parts and the methods used to test these parameters are also discussed at length.

TK7876  2008-038352  978-1-891121-77-7

Multifunctional adaptive microwave circuits and systems.
Steer, Michael B. and W. Devereux Palmer.
SciTech Publishing, ©2009 460 p. $139.00

This collection of nine articles addresses adaptive, tunable, and reconfigurable radio frequency circuits for multi band and broadband radar, radio and sensor systems. These systems can receive and modulate electromagnetic signals from any direction, and can be configured to implement a variety of radio and sensor functions while adapting to the local ambient environment to improve signal reception, reject interference, and compensate for multi path affects. Contributors cover radio frequency system design, radio frequency MEMS components (including switches), devices for reconfigurable circuits and antennas, tunable dielectrics for RF circuits, adaptive server approaches for microwave transmitters, broadband network design, tunable filters, retrodirective array technology, multifunctional radar, communication and radiometry systems. The editors include a glossary. This summarizes the findings of five-year project on multifunctional adaptive radial radar and sensors that ran from funded by the U.S. Army Research Office.

TK9203  2008-271965  978-1-58603-803-8

Experimental and numerical stability investigations on natural circulation boiling water reactors.
Marcel, Christian Pablo.
IOS Press, ©2007 141 p. $68.00 (pa)
Marcel (nuclear engineering, U. Nacional de Cuyo) notes that for safety reasons the next generation of nuclear reactors will likely be
active rather passive, requiring further research in natural circulation as a primary cooling mechanisms. Here he investigates a number of open issues about the stability characteristics of natural circulation boiling water reactors (BWRs), including the effects of downscaling the thermal hydraulics of natural circulation BWRs, experiments about the stability of natural circulation BWRs, the results of an experimental parametric study of natural circulation BWRs, experimental and analytical investigations on flashing-induce instabilities in a single channel, and flashing-induced oscillations in parallel channels. His appendices on the technical details of his case study as well as related models and concepts are particularly interesting.

**AERONAUTICS, ASTRONAUTICS**

TL783 978-1-56347-951-9

**Nuclear space power and propulsion systems.**

Title main entry. Ed. by Claudio Bruno. (Progress in aeronautics and astronautics; v.225)

*Amer. Inst. of Aeronautics & Astronautics,* ©2008 282 p. $89.95

Coming from a study prepared for the Space Technology and System Development Commission of the International Academy of Astronautics, this report reviews studies on the possibilities of developing nuclear power and propulsion systems for space applications. The study group describes the possible advantages of using nuclear energy for this type of application despite concerns about safety and the performance limits of nuclear propulsion. The group introduces the technical side of nuclear propulsion and addresses nuclear thermal rocket propulsion systems, applications of ion thrusters to nuclear electric missions, high power and high-thrust-density electric propulsion for space transportation, metric configurations, and the legal issues and policies that need to be developed about the safety of nuclear propulsion systems and applications. Appendices include information on radiation doses and risks in nuclear propulsion and on the events at Chernobyl. Includes well-chosen photographs and line drawings.

TL1489 2008-009538 978-1-56347-926-7

**The space environment and its effects on space systems.**

Pisacane, Vincent L. (Education series)

*Amer. Inst. of Aeronautics & Astronautics,* ©2008 421 p. $94.95

Pisacane (aerospace engineering, US Naval Academy and biomedical engineering, Johns Hopkins U.) gives students and professionals a better understanding of the environment of space and its effects on spacecraft design. Realistically, he begins by describing the failures caused by the space environment and the associated risks, overviews the solar system (including asteroids and comets, the sun and its activity), then proceeds to magnetic and electric fields, gravitational fields, the magnetosphere, the neutral environment, plasma interactions, radiation interactions, and spacecraft contamination. He closes with very interesting chapters on meteoroids and space debris and their effects on the design of spacecraft, and the ever present problem of thermal control. He focuses primarily on the earth’s environment but includes significant material on the extraterrestrial and the effects of radiation on humans in space.

**CHEMICAL TECHNOLOGY**

TP358 2007-049887 978-1-4200-5124-7

**Biofuels; biotechnology, chemistry, and sustainable development.**

Mousdale, David M.

*CRC Press,* ©2008 404 p. $119.95

A British biochemist working for a genetics engineering company, Mousdale contributes...
some technical perspectives to the volatile debate about the science, economics, and ethics of turning biological material into fuel for vehicles and other uses. He places current proposals and practices into historical context, surveying data, ideas, and bioproducts that have been visited at various times over the past half century. Many of the scientific results, he points out, contradict each other; he blames lack of communication rather than conflicting interests.

TP1120 2008-011624 978-1-4200-8062-9
Plastics fabrication and recycling.
Chanda, Manas and Salil K. Roy.
CRC / Taylor & Francis, ©2009 -- p. $89.95
Chanda (chemical engineering emeritus, Indian Institute of Science) and Roy (civil engineering, Petra Christian U., Indonesia) present molding and fabrication processes of plastics but also describe several important features of plastics recycling to build into design. They describe a full array of processes, including molding, die forming and tooling, compression molding, transfer molding, injection molding, and extrusion. They introduce thermoforming, casting processes, reinforcing processes, reaction injection molding, foaming processes, and rubber compounding and processing technologies, along with miscellaneous processing techniques such as coating, powder molding, adhesive bonding, and welding. A full range of information is included on the recycling of polymers, including the recycling of polyethylenes, polyurethanes, and polyvinyl chloride, and even ground rubber tires and car batteries. This is a valuable reference for all practitioners in the plastics industry.

UG590  978-1-59693-391-0
Foundations of communications electronic warfare.
Poisel, Richard. (Artech House electronic warfare library)
Artech House, ©2008 444 p. $129.00
Researcher and specialist Poisel addresses the theoretical as well as the practical side of electronic warfare (EW) as it applies to communication systems. With examples, illustrations, and algorithms he introduces professionals and students to the art of jamming, including its association with information theory and game theory, the mathematical underpinnings, including the algebras sets, the mathematical theory of probability, and random variables, the properties of signals and systems, including Fourier series, transmissions of signals through linear systems, and detection and estimation theory, digital communication systems, the association of information theory and EW, source coding, channel coating, jam performance in difficult channels, jamming performance evaluation using dynamic and non-cooperative games, noise jamming, pulsed noise jamming, and tone jamming. He includes appendices on relevant functions and equations.

LIBRARY SCIENCE, BIBLIOGRAPHY

Z675 2008-026988 978-1-55570-622-7
The Medical Library Association essential guide to becoming an expert searcher; proven techniques, strategies, and tips for finding health information.
Jankowski, Terry Ann.
Neal-Schuman, ©2008 137 p. $65.00 (pa)
This text is geared toward librarians, information specialists, and library school students with less than five years of bibliographic database searching experience. It can be used as a text for a course or for self-study. Material is organized to follow the database search process from start to finish, with examples and descriptions of databases from health and biological sciences. The book guides readers through basics of search construction, offers practical guidelines for deciding what resources to start with, and reviews the usefulness of some of the most popular health science databases, such as MEDLINE, PubMed, PsychoInfo, CAB Abstracts, ABI/Inform, and ERIC. Learning features include checklists, exercises, and a glossary. Jankowski is a librarian at the University of Washington.

Z6675 2008-028793 978-1-55570-616-6
Drug information; guide to current resources, 3d ed.
Snow, Bonnie. (Medical Library Association guides)
Neal-Schuman, ©2008 546 p. $195.00 (pa)
The third edition of this guide to drug information and resources has been updated to reflect current databases, websites, news services and other online references. Snow (Thomson Reuters) has more than 30 years of experience in this field, and she organizes these resources to facilitate quick and accurate research for pharmacists, medical librarians and scientists in the health sciences. Each entry contains subject area, source content and practical information, with a detailed index that can narrow down searches when quick diagnoses are required. Unlike similar reference volumes in the past that focus primarily on medical resources within the United States, this guide includes plenty of information from global sources as well.
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hramacha@csulb.edu

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Phone: 781-292-2389
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AOL IM: dmlibrarian
dianna.magnoni@olin.edu

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AOL IM: dmlibrarian
dianna.magnoni@olin.edu

Kathy Nordhaus
Raytheon Company
North Bldg Library
13510 N Central Expressway
MS 211
Dallas, TX 75243
Phone: 972-344-5036
Email: k-nordhaus@raytheon.com

Kathryn Breininger
Boeing Co
PO Box 3707
MC 62-LC
Seattle, WA 98124-2207
Phone: 425-965-0242
kathryn.r.breininger@boeing.com

Vendor Partnering Committee

Sara Davis
Jacobs Engineering Group Inc
Library
5995 Rogerdale Rd
Houston, TX 77072
Phone: 832-351-7025
Email: sara.davis@jacobs.com

Kathy Nordhaus
(through June 2009)
Raytheon Company
13510 N Central Expressway
MS 211
Dallas, TX 75243
Phone: 972-344-5036
Email: k-nordhaus@raytheon.com
2009 SLA Chemistry Division Executive Officers

Chair
Luray Minkiewicz
E I DuPont De Nemours Co
Experimental Station
302-695-1257
luray.m.minkiewicz@usa.dupont.com

Chair-Elect
Teri Vogel
University of CA, San Diego
858-534-1216
tmvogel@ucsd.edu

Past-Chair/Nominating Committee Chair
Sue Cardinal
University of Rochester
scardinal@library.rochester.edu

Secretary
Margarette Bower
University of Pittsburgh
412-624-8294
bower@pitt.edu

Treasurer
Bob Buchanan
Auburn University
334-844-1292
buchara@auburn.edu

MRM Section Chair, 2008 Program Planner
Cathy DiPalma
Saint-Gobain NorPro
330-677-3566
cathy.dipalma@saint-gobain.com

MRM Section Chair-Elect, 2009 Program Planner
Jack Bashian
Smithers Rapra Press
330-221-2777
jbashian@smithersmail.com

MRM Section Past-Chair
Nora Stoecker
NKS Info Services
505-299-0501
nstoecker@nksinfo.com

ACS Liaison
Bing Wang
Georgia Institute of Technology
404-894-0816
bing.wang@library.gatech.edu

ASIST Liaison
Christina K. Pikas
Johns Hopkins University
443-778-4812
christina.pikas@jhuapl.edu

Membership
Judith Currano
University of Pennsylvania
215-898-2177
currano@pobox.upenn.edu

Mentoring
Denise Callihan
PPG Industries Inc
724-325-5221
callihan@ppg.com

Strategic Planning
Linda Shackle
Arizona State Univ
480-965-7609
linda.shackle@asu.edu

Archivist
Luray Minkiewicz
E I DuPont De Nemours Co
Experimental Station
302-695-1257
luray.m.minkiewicz@usa.dupont.com

Awards
Cory Craig
University of CA, Davis
530-752-0347
cj craig@ucdavis.edu

Professional Development
Ted Baldwin
University of Cincinnati
513-556-4211
baldwitw@ucmail.uc.edu

Sponsorship
Loren Mendelsohn
City College of NY
212-650-8244
Lmend@sci.ccny.cuny.edu

ACS Liaison
Bing Wang
Georgia Institute of Technology
404-894-0816
bing.wang@library.gatech.edu

ASIST Liaison
Christina K. Pikas
Johns Hopkins University
443-778-4812
christina.pikas@jhuapl.edu

Membership
Judith Currano
University of Pennsylvania
215-898-2177
currano@pobox.upenn.edu

Mentoring
Denise Callihan
PPG Industries Inc
724-325-5221
callihan@ppg.com

Strategic Planning
Linda Shackle
Arizona State Univ
480-965-7609
linda.shackle@asu.edu

Archivist
Luray Minkiewicz
E I DuPont De Nemours Co
Experimental Station
302-695-1257
luray.m.minkiewicz@usa.dupont.com

Awards
Cory Craig
University of CA, Davis
530-752-0347
cj craig@ucdavis.edu

Professional Development
Ted Baldwin
University of Cincinnati
513-556-4211
baldwitw@ucmail.uc.edu

Sponsorship
Loren Mendelsohn
City College of NY
212-650-8244
Lmend@sci.ccny.cuny.edu

BULLETIN EDITOR
Kiem Ta
Oklahoma State University
405-744-9743
kiem.ta@okstate.edu

ASSISTANT BULLETIN EDITOR
Kevin Lindstrom
University of British Columbia
604-822-0695
lindstro@interchange.ubc.ca

PROGRAM PLANNER - 2009
Susan Makar
National Institute of Standards and Technology
301-975-3054
susan.makar@nist.gov

PROGRAM PLANNER - 2010
Arda Agulian
BASF Catalysts LLC
732-205-5271
arda.agulian@basf.com

WEBMASTER
Linda Maddux
Reed College
lbm@reed.edu
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#### Executive Board

**Chair**
Pam Enrici  
Univ Of Minnesota  
416 Library Dr, L278  
Duluth, MN 55812  
Phone: 218-726-8586  
penrici@d.umn.edu

**Chair-Elect**
Hilary Davis  
Box 7111, 2 Broughton Dr.  
North Carolina State  
University  
Raleigh, NC 27695  
United States of America  
Phone: 919-513-0654  
Fax: 919-513-1108  
hilary_davis@ncsu.edu

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Christine Whitaker  
School of Medicine Library  
University of South Carolina  
Columbia, SC 29208  
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Fax: 803-733-1509  
cwhitaker@med.sc.edu

**Secretary**
Christy Caldwell  
UC Santa Cruz  
S &E Library  
1156 High Street  
Santa Cruz, CA 95064  
Phone: 831-459-1287  
Caldwell@ucsc.edu

**Treasurer**
Cheryl Hansen  
Engineering Systems, Inc.  
Library  
3851 Exchange Avenue  
Aurora, IL 60504-7900  
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Fax: 630-851-4870  
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