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Sci-Tech News

Volume 65 | Issue 2

Article 13

April 2011

Full Issue: vol. 65, no. 2

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Recommended Citation

(2011) "Full Issue: vol. 65, no. 2," *Sci-Tech News*: Vol. 65: Iss. 2, Article 13.

Available at: <http://jdc.jefferson.edu/scitechnews/vol65/iss2/13>

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SciTech News

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



Volume 65, Number 2 (2011)
ISSN 0036-8059

SciTech News

Ellis Mount, Editor Emeritus



On the Cover



John Thornton was an English artist and entrepreneur who began issuing a series of botanical plates in 1799. He employed the very best artists and spared no expense in combining the techniques of mezzotint, stipple engraving, and aquatint to produce his large and beautiful images. He published thirty-three engravings in all, and they were gathered into a volume, *The Temple of Flora*, in 1807. Unfortunately, the project ruined Thornton financially, and he died in poverty. The cover illustration shows the Egyptian Sacred Lotus in pink, and the American Water-lily in yellow (photo and caption courtesy of the Linda Hall Library of Science, Engineering & Technology).

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Copy Deadline

Issue Number 1	Feb 1
Issue Number 2	April 1
Issue Number 3	Aug 1
Issue Number 4	Nov 1

SciTech News

Volume 65, Number 2 (2011)
ISSN 0036-8059

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SCITECH NEWS (ISSN 0036-8059) is published quarterly (March, May, September, December) by the Chemistry, Engineering, and the Science-Technology Divisions, the Aerospace Section of the Engineering Division, and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association, 132 Hemingway Place, Georgetown, KY, 40324, (859) 539-5810.

Publication Policy: *SciTech News* is the official bulletin of the Chemistry, Engineering, Science-Technology Divisions, the Aerospace Section of the Engineering Division, and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association. The contents of articles and editorials are not to be construed as being or representing the official position of the sponsoring divisions.

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

Subscriptions: Special Libraries Association members in the Chemistry, Engineering, Science-Technology Divisions, the Aerospace Section of the Engineering Division and the Materials Research and Manufacturing Section of the Chemistry Division automatically receive subscriptions to *SciTech News*. Their annual subscription fee of \$1.00 is paid from their annual dues to the Special Libraries Association.

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From the Editor

Abby Thorne



Welcome to your second issue of *SciTech News* for 2011!

In just over a month, SLA will be invading Philadelphia. Inside this issue, you'll find lots of information about the 2011 SLA Annual Conference and the sessions being presented by our contributing divisions and sections. From the "Science of Ice Cream" to "Tweets from Space," there are educational sessions for EVERY interest at SLA Annual Conference. I encourage you to peruse the Division News pages for previews of upcoming conference sessions then check out the online conference planner at <https://www.slaconference.org/scheduler/newCatalog.do>.

In addition to the educational offerings at Annual Conference, there will be many opportunities to network with your colleagues, meet new people, and get involved with your divisions and sections. I encourage you to take full advantage of the SLA conference schedule:

- Attend the business meetings of the divisions and sections to which you belong. This allows you to get to know the leadership of your divisions and sections, learn about the issues affecting the units to which you belong, and find out about opportunities to serve SLA and give back to the profession.
- When sessions are over in the evening, take advantage of the various social

opportunities on the SLA schedule. Unit open houses and socials provide you a chance to refuel after a long day of conference activities, meet new people, and discuss professional issues with your colleagues.

- Don't forget about the opening and closing general sessions. This year, Thomas Friedman, foreign affairs columnist for the *New York Times* and author of *Hot, Flat, and Crowded: Why We Need a Green Revolution — and How It Can Renew America*, is the speaker at the Opening General Session. James Kane, an expert on building loyalty and connections, will close the conference. If you didn't have a chance to see James speak at the 2010 SLA Leadership Summit in St. Louis, you do not want to miss his session!

If you are unable to physically attend the conference, there's also a virtual conference option being offered again this year. For information about the virtual component of the conference, please see <http://sla2011.tornado1.com/general-information/virtual-component/>.

I look forward to seeing you in Philadelphia! ❖

Abby Thorne
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859-539-5810

***SciTech News* Call for Articles!**

SciTech News is looking for a few good authors!

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

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

News from the Science-Technology Division

Science-Technology Division

Joe Kraus, Chair



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

Hello from Denver, Colorado.

I am really looking forward to the SLA Annual Conference this year. Philadelphia is a fantastic city, and I hope that the conference will be just as good. The Sci-Tech Division has a good slate of sessions, and we are collaborating with a number of other SLA Divisions to provide many of our sessions.

Over the next month, we will provide more details concerning these sessions on the new Sci-Tech Division website (<http://scitech.sla.org>) and on the discussion list. The blog posts will automatically go out on our Twitter feed, so please follow the postings at http://twitter.com/sla_dst.

If you are a new member of the Division, or if this is your first trip to the SLA Annual Conference, we would like to have you attend the Newcomer's Lunch on Sunday, June 12th from 11:30 a.m. till 1:00 p.m. The location will be announced on the discussion list and the website. If you are a Division leader, we would like to have you attend the business meeting from 1:30 to 3:00 p.m. that Sunday.

On Monday, June 13th, the Business Meeting and Breakfast will be that morning. We will also have our first topical session on forensic investigation. Some officers from the Philadelphia Office of the Federal Bureau of Investigation (FBI) will explain how they conduct investigations at the "Crime Scene Investigation: Philadelphia" session.

That afternoon, we co-sponsor a session on "Collaborations Across Disciplines." Learn about efforts to help researchers collaborate across disciplines. Speakers include representatives from FriendFeed, Mendeleev, Collexis, VIVO and BibApp. We are also sponsoring a session on "Visualizing Science." See what's happening in the world of data visualization, including new and easy to use applications.

Monday evening, the Sci-Tech Division will host an Open House at the Field House. <http://>

scitech.sla.org/2011/03/open-house-on-monday-evening-june-13th/.

On Tuesday, June 14th, we co-sponsor the "Developments in Informatics" session. Come hear the latest developments in informatics in the fields of chemistry, biological sciences, and physics and astronomy. The "Science of Ice Cream" session will feature a researcher from the Pennsylvania State University Creamery (<http://www.creamery.psu.edu>). Later that evening, we co-sponsor the "All Sciences Poster Session and Reception." I know that there are going to be some really interesting poster presentations.

On Wednesday, June 15th, the Division will sponsor or co-sponsor four more great sessions. For a light breakfast, please stop by the "Science 2.1" session for a discussion on how scientific communication methods are iteratively changing. The ever popular James Manasco and Mary Frances Lembo will present at another "Sci-Tech 101" session. This year, they will discuss materials science and marine science resources.

Also on Wednesday the 15th, we co-sponsor the "Computer Science Roundtable," and we have a great slate of papers that will be presented at the "Data: The Next Generation" session. Peer-reviewed contributed papers will be presented on the topic of data curation. The four papers are: "ChemSpider: Hosting, Linking and Curating Chemistry Data for the Community" by Valery Tkachenko, CTO ChemSpider; "Starting from Scratch: Assessing the Library's Role in Data Management on Campus" by Christie Peters, Robin Dasler, and Anita Riley from the University of Houston; "Planning for Data Curation in the Small Liberal Arts College Environment" by Sarah Goldstein and Sarah Oelker, Mount Holyoke College; and "Data Management Plan Advising? A New Business Venture for Libraries" by Andrew Sallans, University of Virginia. Please go to <http://scitech.sla.org/2011/03/data-the-next-generation-session-information/> for more information. Please note that some snacks and

beverages will be provided to help keep you attentive at the session.

By all means, stay in Philadelphia on Thursday, June 16th as well! We are co-sponsoring a Tastykake Factory Tour at the Old Naval Shipyard, and we have two unofficial tours. Several Sci-Tech members are able to visit the Franklin Institute, and we may have space for people to tour the EPA Library. Please see <http://epatour2011.pbworks.com> for more information. Please email me (joseph.kraus@du.edu) if you would like to sign up.

It has been a delight to work on planning the programs for this year's Sci-Tech Division sessions. I hope you will enjoy the trip out to Philadelphia; I know I will. ❖

Joe Kraus
joseph.kraus@du.edu

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Sci-Tech Division Vendor Sponsors for 2011

Carol Lucke, Vendor Relations Chair, Sci-Tech Division

The Sci-Tech Division would like to recognize our generous sponsor vendors for their financial assistance and support for the 2011 SLA Conference. Without them the Sci-Tech Division would not be able to offer the relevant, educational and interesting programs and networking opportunities our members count on and expect. This year our vendor supporters include, in alphabetical order:

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Please be sure to visit our sponsors at the Exhibitors Center and thank them for their support!

Science-Technology Division New Members

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

The Science-Technology Division welcomes its new members:

Teresa Wilkins
Secaucus, NJ
USA

Leslie Bitman
Waltham, MA
USA

Jason Youngstrom
Golden, CO
USA

Sushma Gupta
Roorkee, Uttarakhand
India

Pamela Cheek
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Poojapura, Kerala
India

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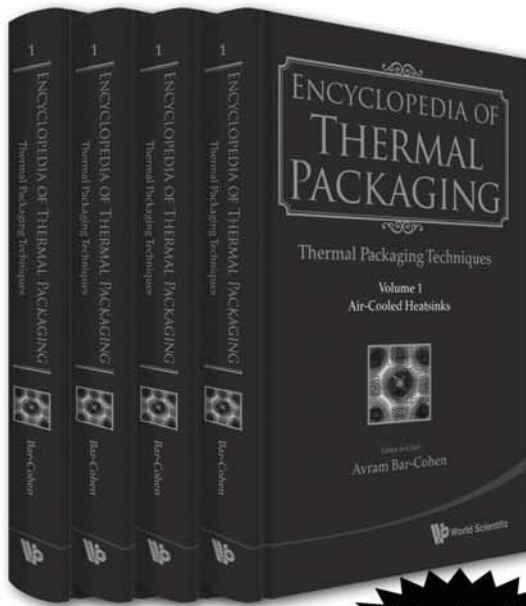
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San Francisco, CA
USA

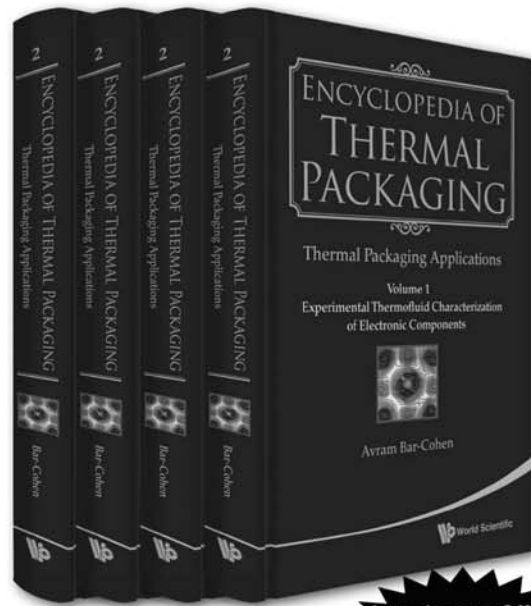
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Set 2: Thermal Packaging Applications (A 4-Volume Set)



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Successful thermal packaging is the key differentiator in electronic products, as diverse as supercomputers and cell phones, and continues to be of pivotal importance in the refinement of traditional products and in the development of products for new applications. The Encyclopedia of Thermal Packaging, compiled into four multi-volume sets (*Set 1: Thermal Packaging Techniques*, *Set 2: Thermal Packaging Applications*, *Set 3: Thermal Packaging Tools*, *Set 4: Thermal Packaging Configurations*), will provide a comprehensive, one-stop treatment of the techniques, applications, tools, and configurations of electronic thermal packaging.

Each volume in this set is comprised of 250–350 pages and is written by world experts in the specific aspect of thermal management of electronics.

Readership: Undergraduate and graduate students studying mechanical, electrical and electronic engineering; packaging engineers, electronic product development engineers, and product managers, as well as to researchers in thermal management of electronic and photonic components and systems.

The books included in "Set 1: Thermal Packaging Techniques" focus on the technology "building blocks" used to assemble a complete thermal management system and provide detailed descriptions of the underlying phenomena, modeling equations, and correlations, as well as guidance for achieving the optimal designs of individual "building blocks" and their insertion in the overall thermal solution. Specific volumes deal with coldplates, microchannel coolers, heat sinks, thermal interface materials (TIMs), thermoelectric microcoolers, and immersion cooling modules.

The books included in "Set 2: Thermal Packaging Applications" focus on the unique considerations which guide the design and operation of electronic systems in various distinct applications and address the thermal management requirements, operating environments, and best available thermal solutions for these applications. Volumes offered in Set 2 of the Thermal Packaging Encyclopedia will deal with solid state lighting, data centers, power electronics, photovoltaic arrays, and experimental measurement techniques.

AD-JO-03-11-02-W

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Science-Technology Division Call for Candidates

Submitted by Pam Enrici, Nominating Committee Chair, Science-Technology Division

It's that time of year and the Sci-Tech Division is looking for a few good people – well, we're always on the lookout for lots of good people. But these volunteers will be filling two major jobs within the Division – Chair-Elect and Secretary.

The Chair-Elect is really a three year commitment – the first year, the Chair-Elect will work on planning the next year's Divisions activities at the Annual Conference and start really learning the ropes. The next year, he/she will serve as Chair, and the final year, they will work with the governing documents of the Division as Past Chair. Anyone who has served as Chair knows the amount of work and dedication that it takes to keep things moving forward throughout your term, but at the same time it is an extremely rewarding activity. You'll meet new people both in the Division and throughout the wider SLA, you'll learn how to do lots of new things, and I feel, have a good time and equally important, feel good about helping. There is some financial help from the Division for travel, as well.

The Secretary position is a two year term. You will need to take minutes at the Business Meeting and the Board Meeting at the Annual Conference as well as take minutes for board meetings that take place at other times.

I realize that not everyone is in a position where they can dedicate this much time and energy to the Sci-Tech Division, but if you are, please volunteer (or we'll come looking!). Remember, the Sci-Tech Division is only as good as the people who help.

For more details and/or to volunteer for either position, please contact Pam Enrici (Past-Past Chair of Sci-Tech Division and Chair of the Nominating Committee). I can be reached at 218-726-8586 or you can e-mail me at penrici@d.umn.edu. Feel free to contact others on the committee: Christine Whitaker (Christine.Whitaker@uscmed.sc.edu), Anna Ren (anawu@northwestern.edu), Debal Kar (dckar@teri.res.in), and Nancy Wilmes (n.wilmes@wayne.edu) or talk to our current Chair, Joe Kraus (joseph.kraus@du.edu). ❖

News from the Chemistry Division

Chemistry Division

William Armstrong, Chair

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



The conference is rapidly approaching, and I hope all of you are preparing to come to Philadelphia. To aid in your planning, I have provided a schedule of Chemistry Division events on page 13. We have a lot to offer our members, so we hope you will be able to take full advantage of these sessions.

Please don't forget the three scheduled breakfast meetings: the DCHE Academic Roundtable, DCHE Business Meeting, and the DCHE Corporate Roundtable, on Monday, Tuesday, and Wednesday mornings, respectively. In addition to enjoying a full breakfast buffet at a reasonable cost (always a nice way to start the day), you'll have a wonderful opportunity to discuss with your colleagues issues of particular importance and relevance to you in a very informal format.

And whether you are new to the Division or a long-time participant, the Business Meeting is an excellent chance to see what the Division is doing, meet others who are active in its affairs, and begin to get involved as a DCHE member. We would love to see you all involved so that you can help keep our activities relevant to

you! Please avail yourselves of any or all of these three opportunities to network and to become involved in the Division. Everyone is welcome. Tickets can still be purchased from the SLA online registration site, even if you've already registered.

One final item I would like to mention is the Tour of the Chemical Heritage Foundation. For all who are able to stay through Thursday morning, please consider this event. It is free, so the price is right, but the exhibits at the Foundation are also quite exceptional, I am told, and I am excited about seeing them myself. To sign up, just send me an email indicating interest. Details of where we will meet before proceeding to the Museum will be sent to participants prior to the conference.

Further details of these events can be found in the previous issue of *SciTech News* at <http://jdc.jefferson.edu/cgi/viewcontent.cgi?article=1150&context=scitechnews>.

We look forward to seeing you all in Philadelphia!
❖

Bill Armstrong, Chair
notwwa@lsu.edu



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Chemistry Division Conference Events

Submitted by William Armstrong, Chair, Chemistry Division

Saturday, June 11th

- 8:00 a.m. – 5:00 p.m.
CE Course: Chemistry for the Non-Chemist Librarian (ticketed event)
- 5:15 p.m. – 7:15 p.m.
DCHE Board Meeting (everyone welcome)
- 7:30 p.m. – 9:30 p.m.
DCHE No-Host Dinner (everyone welcome)

Sunday, June 12th

- 8:00 a.m. – 12:00 p.m.
CE Course: Chemical Information Sources, Requests, and Reference (ticketed event)
- 1:00 p.m. – 5:00 p.m.
CE Course: Extreme Structure Searching (ticketed event)
- 12:30 p.m. – 2:00 p.m.
Chemistry Division Newcomer Luncheon (invitation only)

Monday, June 13th

- 7:30 a.m. – 9:30 a.m.
DCHE Academic Roundtable & Breakfast (ticketed event)
- 10:00 a.m. – 11:30 a.m.
Update on Materials Science Research & Resources
- 2:00 p.m. – 3:30 p.m.
Collaborations Across Disciplines: BibApp and VIVO
- 4:00 p.m. – 5:30 p.m.
Visualizing Science

Tuesday, June 14th

- 7:30 a.m. – 9:30 a.m.
DCHE Business Meeting & Breakfast (ticketed event)
- 10:00 a.m. – 11:30 a.m.
Developments in Informatics
- 12:00 p.m. – 1:30 p.m.
International Year of Chemistry: Perils and Promises of Modern Communication in the Sciences
- 2:00 p.m. – 3:30 p.m.
Science of Ice Cream
- 5:30 p.m. – 7:30 p.m.
All Sciences Poster Session & Reception

Wednesday, June 15th

- 7:30 a.m. – 9:30 a.m.
DCHE Corporate Roundtable and Breakfast (ticketed event)
- 10:00 a.m. – 11:30 a.m.
Energy Issues in Libraries: Biofuels and other alternative energies

Thursday, June 16th

- 10:00 a.m. – 11:30 a.m.
Tour of Chemical Heritage Foundation (no fee) ❖

Chemistry Division Membership Column

Submitted by Dana Roth, Membership Committee Chair, Chemistry Division

The Chemistry Division has added a number of new and interesting members, including:

Arin Cole is the head librarian at Everest College [<http://www.everest.edu/campus/Tacoma>] in Tacoma, Washington. "I have and continue to work toward building the library collection, having grown it from a small book depository into a working library with an online catalogue and a high circulation rate. Working with faculty and students, the collection grows with interest and key program topics."

Elsa Alvaro is a MLS candidate at the Indiana University Bloomington School of Library and Information Science [<http://www.slis.indiana.edu/>], where she is the 2010 Charles A. and Charles H. Davis Fellow and a Merit Scholar. She is also a graduate assistant at the Chemistry and Life Sciences Libraries. She holds a Ph.D. in Chemistry and has three years of post-doctoral research experience.

Erin Goken majored in biochemistry at Northern Illinois University and received a Ph.D. in Chemistry from The Pennsylvania State University. She anticipates receiving a M.S. in Information Sciences [<http://anywhere.tennessee.edu/de/programs/index.html#is>] through the University of Tennessee's Distance Education program this summer. Erin is looking forward to utilizing her knowledge in the field of chemical information.

Karen Salazar is currently earning a MLIS at Louisiana State University and is planning to graduate in the Summer of 2012. She has a Ph.D. in Organic Chemistry from The University of Oklahoma and has worked in industry as both a Senior R&D Chemist and a Senior Customer Technical Service Chemist. In addition to her studies, she is also working part-time for The Princeton Review as a teacher, tutor, and content developer. Her future professional interests are in digital libraries and cheminformatics. ❖

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News from the Materials Research & Manufacturing Section

Materials Research & Manufacturing Section

Bing Wang, Chair

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

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

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Research & Info Svcs Director
Squire, Sanders & Dempsey LLP
Research & Info Svcs
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Erin Goken
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Apt 5r
New York, NY 10009

News from the Engineering Division

Engineering Division

Kathryn Breining, Chair



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

Spring is finally in the air! When I talk to colleagues in other regions of the country, I hear that this has been an unusually wet or cold or just plain long winter, and everyone is looking forward to the Spring season coming around with bright flowers, bird song, and warmer or milder weather.

As librarians and information professions, we are also planning for and looking forward to our annual conference in June, this year located in Philadelphia, the City of Brotherly Love. Preparations are being finalized for conference programming and across the globe information professionals are looking through the program, determining "must attend" choices in the schedule, and how best to be in multiple places at one time in order to cover all the sessions they want to attend! If you have not already registered for SLA 2011 or are undecided on whether you will attend, I encourage you to take a look at the schedule, read the descriptions, and think about the great opportunities available to you at the conference. The sessions are informative, energizing, and inspiring, and at no other time or place do you have the opportunities for networking that you will have at the conference. You may meet people with whom you have exchanged e-mail but never met, folks you have helped by providing resources, authors of articles you have read, or members of your Division or Chapter! If you have attended in the past you will have an opportunity to meet with friends you have not seen for awhile. What a great gathering place to learn, exchange ideas, renew friendships, and share what you have discovered, where you have struggled, and your successes!

The Engineering Division has partnered with several other divisions and vendor sponsors to provide excellent programming again this year. All three days are packed with great sessions and speakers!

Monday is the Aerospace Section's Breakfast and Business Meeting; please join the section in celebrating with award recipients during the breakfast (see Adrienne Jones Washburn's ar-

ticle in this issue for additional details). Also on Monday is the Data Mining & Visualization session with speakers Richard Klavans and William Pickering. This session covers what's next once you have developed your thesaurus or taxonomy and tagged your data. The speakers will cover options for visualizing and mining the data you have so carefully tagged using text analytics instead of term analytics. Adrienne Jones Washburn will be presenting a great virtual session on collaboration during the afternoon. She will present collaboration tools used in her organization, "how-tos," and some great information on methods for reducing e-mail!

Tuesday will include a fantastic session on Tweets from Space, covering how NASA is using social media tools for really long distance communication! Jaime Scibelli from NASA Glenn Research Center will discuss how NASA is using social media tools to connect with the public and improve communication as well as broader support for space programs. Then be sure to register and join us for the Engineering Division Luncheon and Business Meeting. We are planning to hold a raffle during the luncheon with all proceeds going to a local Philadelphia charity. We started this new tradition in New Orleans last year, raising several hundred dollars that went to the local food bank (can something we have done once be called a tradition? – I think so when the intention is to continue!). The afternoon continues with a session on building a physical library in the digital age, where our speakers, Susan Nutter and Helen Josephine, will talk about how two new libraries are using technology, space design, and student input to better align with smaller physical collections, the need for group areas for work or study, and to better prepare students for the more advanced and interactive software they are likely to encounter in many workplaces. The day is capped off with the All Sciences Poster Session and Reception. Be sure to plan time to come by and talk to the presenters about their posters and learn first hand about some of the innovative ideas being developed.

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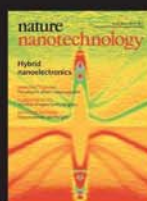
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During the SLA conferences, typically Wednesday rolls around with a feeling of physical exhaustion accompanied by heightened mental excitement among conference attendees as new ideas continue to be explored – and SLA 2011 will be no different! The Technical Standards Update session starts off the morning providing a review of new products and services from our engineering and technical standards providers. What a great opportunity to learn about new features all in one place! The Science and Engineering Resources 101 session will include a discussion on materials science and marine science with our speakers Mary Frances Lembo and James Manasco. Be sure to arrive at the closing session early to get a good seat for our closing general session featuring key note speaker James Kane, considered an expert on loyalty and what it takes to inspire loyalty to a person, a cause, or an organization.

All of these great sessions would not be possible without the support and resources provided by our vendor sponsors at SLA. Be sure to say thank you to the sponsors as you wander through the Expo Hall, attend sessions, or run into them in the hallways. They enable us to learn, share, and grow in our profession. If you find you are not able to attend SLA 2011, please be sure to thank your vendor representatives next time you meet with them in your own organizations.

Another topic related to conferences, learning, and sharing is mentoring. With the conference coming up in June we have a great opportu-

nity for mentors and mentees to meet. We are looking for Engineering Division volunteers to be conference mentors. This is a great learning opportunity for mentors as well as mentees – both gain and share knowledge and experiences. It is hard to say who gains the most from the relationship! An Engineering Division Conference Mentor is someone who has attended several SLA annual conferences and has been a member of the Engineering Division for several years. This experience enables the mentor to help the new conference attendee to get the most out of the conference. The mentor helps the mentee determine which meetings and programs would best meet their learning goals and interests, introduce them to colleagues, and help them get involved in the division. The goal is to help the mentee find the conference experience beneficial, informative, and less stressful. How many of you remember your first SLA conference? If you didn't have someone who helped you through the maze of programs and meetings, you likely felt a bit lost and overwhelmed at times! Please consider being a conference mentor, and contact Bonnie Osif (bao2@psu.edu), our Mentor Chairperson, for additional information. If we get enough volunteers we can put out a call for mentees to match. Please consider how your experience can help someone, and will likely result in a new colleague relationship for you as well!

I am looking forward to the conference, learning, sharing, networking, meeting new colleagues, and seeing old friends. I hope to see you in Philly! ❖

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

News from the Aerospace Section

Aerospace Section

Adrienne Jones Washburn, Chair



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

It's May and Spring is here! This year's conference in Philadelphia promises to be an excellent opportunity for learning, networking, and discovery! With speakers James Kane and Thomas Friedman, this conference is sure to be a hit. If you haven't registered for the conference, do so now!

While you're registering for the conference, be sure and register for the Aerospace Section Annual Meeting and Breakfast on Monday, June 13th from 8:00 a.m. to 9:30 a.m. Tickets to the breakfast are \$35, but are well worth the price. A full breakfast will be served, and thanks for our excellent Vendor Relations Chair, Sara Davis, you'll be able to network our vendor partners from AIAA, IHS, and SPIE Digital Library! If you had trouble buying your ticket to the Aerospace Annual Meeting and Breakfast when you registered for the conference, you can go back into the registration portal and add events you would like to attend after the fact. Just use the username and password you created during your original registration to re-enter the registration portal and purchase additional event tickets. Keep in mind that events are organized by the date of the event.

In addition to networking and enjoying breakfast, you will also have the opportunity to meet this year's George Mandel Memorial Award (GMMA) Winner, Gale Harris! Gale Harris has been a Librarian for over 34 years and a member of SLA for over 10 years. She began her career as a librarian for a private school before moving into the university environment where she worked as Head of Acquisitions. After 5 years in the academic world, Gale joined the corporate world as a special librarian for General Dynamics, now Lockheed Martin.

Gale is the Chief Librarian of Aeronautics at

Lockheed Martin, and she is an active member of the Lockheed Martin Business Capture Association, the Lockheed Martin Competitive Intelligence Working Group, and the Lockheed Martin Librarians Task Force. Gale is also a member of the Tarrant County College Advisory Council that developed a Library Technician Certificate and an Associate of Arts degree in Library Technology, both of which will be offered in Fall 2011. Gale has held the offices of Government Relations Chair for the Engineering Division and Chair of the Aerospace Section.

Gale received a B.A. and a B.S. in French and English, as well as her MLS from Texas Woman's University. On a personal note, Gale enjoys spending time at her cabin in Ruidoso, New Mexico, stitching, reading a good book, and sipping a tall drink. She has two cats, two dogs, two kids and one husband. Please join me in presenting the prestigious George Mandel Memorial Award to Gale at the Aerospace Breakfast.

As an added bonus, don't forget to attend the session, "Tweets from Space," on Tuesday, June 14th, from 10:00 a.m. to 11:30 a.m., which is sponsored by the Aerospace Section and AIAA! Jaime Scibelli from the NASA Glenn Research Center will present and discuss how NASA is using social media tools to connect with the public and broaden support for its programs. This session is a must see event!

Whether you plan to attend the conference in person or virtually, make the most of your visit by attending the excellent sessions available. You won't be disappointed! ❖

Adrienne Jones Washburn
adrienne.j.washburn@lmco.com

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Science Today in Verse

Hope Leman, Samaritan Health Services

Isaac Newton

Much admired by his peers,
He earned their praise throughout his years .
His work in optics made his name
And won him laurels and much fame.
He lectured roughly once a week
And took an hour or so to speak
On topics of most every kind
So capacious was his mind.
He clearly took a great delight
In studying the facts of light.
He managed to define the source
Of motion relative to force.
If a question was propounded
Leaving all his peers confounded,
Newton, with elan and skill
And stunning brilliance matchless still,
Would answer it and move along
And almost never was he wrong.
He didn't care for publishing.
He always feared a rubbishing
By lesser minds who lacked what he
Possessed in superfluity--
Insights that for smaller men
Were always far beyond their ken.

Albert Einstein

Time's not constant nor is weight,
So, whenever I am running late
Or out of shape and getting fat,
I'm grateful Einstein showed us that
There's no good reason why I ought
To give them e'en a passing thought!

Louis Pasteur

In Public Health he had no peer!
His safer ways of brewing beer
Assured the lasting admiration
Of every fan of fermentation.

Pasteur, Wizard of virology,
Biochemistry, biology,
Master of experimentation,
Debunked spontaneous generation,
Savior of non-nursing babies,
Storied conqueror of Rabies!

Please step up and thank the man
For better beer and a long life span!!! ❖



Beyond the Chemistry Web...

Bob Buchanan, Chemistry Librarian, Auburn University



Janet D. Stemwedel, whose nom de blog is Dr. Free-Ride, is an Associate Professor of Philosophy at San Jose State University "with a misspelt scientific youth in physical chemistry." She writes as a trained scientist (Ph.D. in Physical Chemistry) and as a philosopher of science (Ph.D. in Philosophy). Her blog **Adventures in Ethics and Science** covers responsible conduct of scientific research, communication between scientists and non-scientists, and teaching science and ethics.

<http://scientopia.org/blogs/ethicsandscience>

Chemical Blogspace provides a window into what bloggers and scientists think about articles, molecules, and topics in chemistry. Chemical Blogspace collects information from over 200 chemistry blogs and "does useful and interesting things with it." It can be thought of as a blog of chemistry blogs with analysis. Information from chemistry blogs is organized by blog, journal, topic, and molecule. Along with links to the top rated chemistry blogs, Chemical Blogspace provides analysis on each blog over the last 90 days – number of posts, words per post, percent of complex words, and ease of readability. Blogs are rated based on the number of postings and on use data. To see the top chemistry blogs, "blogged" journals, and "blogged" topics, click on the tab called **Zeitgeist** and scroll down the page.

<http://cb.openmolecules.net>

<http://cb.openmolecules.net/stats.php>

CENtral Science Blogs is a group of blogs, or blog-like columns, run by C&E News. Collecting postings from several blogs into one place to increase content quality and quantity is a sound idea. Although most of the blogs at CENtral Science Blogs lean more toward news about chemistry and the chemical industry from an ACS perspective, a couple of the blogs, Just Another Electron Pusher and Transition States, offer the intelligent musings expected in a good blog. You will need to bookmark this site since, unlike the other blogs in this column, an RSS feed is not available.

<http://cenblog.org>

In the Pipeline – Derek Lowe is a Ph.D. organic chemist who has worked (and still does) for several pharmaceutical companies and has blogged about the industry since 2002. The blog averages an entry per day with some days having multiple entries. Recent topics include Things I Won't Work With, Patents and IP, Me-Too Drugs, and The Scientific Literature.

<http://pipeline.corante.com>

Patricia Meindl, Chemistry Librarian at the University of Toronto, started the blog **Cooking, Cakes and Chemistry** this past December. Aimed at first year undergraduates, this blog may appeal to anyone interested in the chemistry behind cooking.

<http://cookingcakesandchemistry.blogspot.com> ❖

Sci-Tech Book News Reviews Susan Fingerman, Selector



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

PRODUCTION, INDUSTRY, LABOR

HD69 2010-028306 978-1-4398-3001-7

Green project management.

Maltzman, Richard and David Shirley.

CRC Press, ©2011 272 p. \$69.95

Maltzmann (engineering, project management supervision) and Shirley (management, project management) offer guidance for project managers in how to implement green techniques and methods and maintain a healthy project bottom line. The authors address green terminology, green project fundamentals, types of projects, project development, execution, monitoring and controlling, life cycle assessment, lean thinking, and funding opportunities such as grants, rebates, and tax credits.

HD9999 2010-020307 978-1-934899-15-1

Building the case for biotechnology; management case studies in science, laws, regulations, politics, and business.

Title main entry. Ed. by Mark J. Ahn et al.

Logos Press, ©2010 412 p. \$79.95 (pa)

This collection of twenty-two case studies provides real-world examples and problem solving practice for students and entrepreneurs in the field of biotechnology. Divided into three sections covering the science, law, regulation and politics and business aspects of biomedical companies, the work details real firm's experiences as they dealt with key problems in their growth and development. Each chapter provides an introductory overview of the problem explored, and the technologies, geographic location and companies involved. Relevant data, documents, appendices and references are provided to allow students to analyze real data and compare their proposed solutions to the actual events as they transpired. The case studies and summaries have been prepared by graduate students in the fields of management and business administration from a variety of universities.

SCIENCE (GENERAL)

Q325 2008-013806 978-1-60456-646-8

Machine learning research progress.

Title main entry. Ed. by Hannah Peters and Mia Vogel.

Nova Science Publishers, ©2010 488 p. \$195.00

Research reports and literature reviews offer a snapshot of the current status in designing and developing algorithms and techniques that allow computers to learn. Some contributors work in computer science, artificial intelligence, and related fields, but others do not, and discuss applying machine learning to problems in their own areas. The topics include a review of bankruptcy prediction models from the machine learning perspective, using ensembles of classifiers in bioinformatics, machine learning for knowledge derived from the paucity of data, reservoir computing for sensory prediction and classification in adaptive agents, a location modeling approach to an expert network with mixed continuous and categorical feature variables, and learning support vector regression models for fast radiation dose rate calculation.

Q387 2010-930895 978-1-60750-580-8

Ontologies and semantic technologies for intelligence.

Title main entry. Ed. by Leo Obrst et al. (*Frontiers in artificial intelligence and applications*; v.213)

IOS Press, ©2010 227 p. \$160.00

Edited by Obrst (The MITRE Corporation), Janssen (Lockheed Martin Corporation), and Ceusters (State U. of New York at Buffalo), this volume contains 11 papers exploring the application of information science ontologies and semantic technologies to support the needs of US (and other) intelligence communities. Examples of specific topics include the use of ontologies in open source blog mining; ontologies for rapid integration of heterogeneous data for command, control, and intelligence; ontology-driven imagery analysis; provability-based semantic interoperability for information sharing and joint reasoning; design principles for ontological support of Bayesian evidence management; and the future of ontologies, semantic technologies, and intelligence.

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Nanophotonics



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MATH, COMPUTERS

QA9 2010-038448 978-0-12-384958-8

Computability theory; an introduction to recursion theory.

Enderton, Herbert B.

Academic Press, ©2011 174 p. \$79.95

Enderton (U. of California, Los Angeles) has written a clear, focused, and surprisingly literate textbook—it is a rare mathematician who is this adept with words—describing the history and theory of recursion theory that will be ideal for one-semester advanced courses in mathematics and computer science. After the concepts and theories are introduced, the equivalence of computable partial function and recursive partial function are demonstrated, in part through proofs of the unsolvability of the halting problem and of the enumeration theorem. Other chapters describe the properties of recursively enumerable sets, the link between computability theory and Gödel's incompleteness theorem, relative computability and degrees of unsolvability, and polynomial time computability. Appendices are included on Mathspeak, countability, and decadic notation.

QA40 2010-021872 978-1-4398-0639-5

A concise handbook of mathematics, physics, and engineering sciences.

Title main entry. Ed. by Andrei D. Polyaniin et al.

CRC Press, ©2011 1097 p. \$99.95

Concise presentation (without proofs), mindfulness of differing mathematical backgrounds (avoidance of special terminology when possible), and emphasis on practical aspects (formulas, problems, methods, and laws that occur frequently in engineering applications)—contribute to the usefulness of this single-volume reference. Many sections are self contained; subsections are arranged in increasing order of complexity; and a bibliography is included for each chapter. Part I covers mathematics beginning with a chapter on arithmetic and elementary algebra and ending with probability theory. Following is coverage of physics, including physical foundations of mechanics, molecular physics and thermodynamics, electrodynamics, oscillations and waves, optics, quantum mechanics, quantum theory of crystals, and nuclear physics. The third part is devoted to elements of applied and engineering sciences including dimensions and similarity, point particles and rigid bodies, strength of materials, hydrodynamics, mass and heat transfer, and electrical engineering. The final part contains supplementary tables and formulas. The two editors are based in Moscow, Russia: Polyaniin, with the Institute for Problems in Mechanics, and Chernoutsan, with Gubkin Russian State U. of Oil and Gas.

QA76.63 2010-045091 978-1-4398-2961-5

Mathematical aspects of logic programming semantics.

Hitzler, Pascal and Anthony Seda. (Chapman & Hall/CRC studies in informatics series)

CRC Press, ©2011 274 p. \$89.95

Rigorous, comprehensive, modern, and detailed is how Hitzler (Wright State U., Ohio, US) and Seda (mathematics, U. College Cork, Ireland) describe their account of the mathematical methods and tools required for the semantic analysis of logic programs. Much of the material has been generated by their own collaboration over the past decade, but they also integrate research results by others. A major feature is that they significantly transcend the tools and methods from the order theory traditionally used in this context, to include non-traditional methods from mathematical analysis depending on topology, generalized distance functions, and their associated fixed-point theory. The fatter tool box should help correct some problems, and should also be more widely applicable, they say.

QA76.64 978-0-7656-2353-9

Systems analysis and design; people, processes, and projects. (online access included)

Title main entry. Ed. by Keng Siau et al. (Advances in management information systems)

M.E. Sharpe, Inc., ©2011 228 p. \$199.95

The same editorial team produced an earlier volume in the series on the development methodology aspects of systems analysis and design, and together the two volumes provide a broad picture of the fundamental processes and methods that deliver the engines for the information society. Elaborating the terms of the subtitle in sections on social, sociotechnical, and technical systems, scholars of business and information discuss such topics as facilitators and inhibitors for adopting agile methods, focusing on work systems to understand and analyze information systems, and meta-modeling to design the structured database schema.

QA76.76 2010-022186 978-0-321-60191-9

Continuous delivery.

Humble, Jez and David Farley. (Addison-Wesley signature series)

Addison-Wesley, ©2011 463 p. \$49.99

Designed to bring together the major stake holders in software development under a rubric of best practices, this volume speaks to coders, project managers, testers and systems administrators on the acceleration of development cycles and the concept of continuous delivery of reliable software updates. Divided into three parts, the work begins with an exploration of the basics of the development cycle including the development infrastructure, configuration management, continuous integration and testing.

The second section develops the authors' concept of a "development pipeline" detailing build scripting, the commit stage, automated testing and deployment and application release. A final set of chapters discuss the delivery of the updated product including such topics as components and dependencies, migrating data and version control systems. Illustrations and sidebars explaining key concepts appear throughout the work and access to additional online resources is provided. Humble and Farley are experienced software development consultants and advocates of the agile software development methodology.

QA76.9 2010-021877 978-1-4398-1037-8

Conceptual modeling for discrete-event simulation,

Title main entry. Ed. by Stewart Robinson et al.
CRC Press, ©2011 511 p. \$99.95

This volume collects different perspectives on modeling the dynamics of a system as a series of discrete events at which the state of the system changes. Written by academics from Europe and North America, the 18 chapters describe a framework for modeling operations systems, an object-oriented approach for manufacturing systems, the ABCmod conceptual modeling framework, KAMA notation, the federation development and execution process, conceptual models of mission space, and the base object model. The contributors investigate the relationship between complexity and model performance, show how software engineering principles can be applied to conceptual modeling for discrete-event simulation, and address the importance of structuring the problem effectively.

QA76.9 2010-016494 978-1-61692-245-0

Information assurance and security ethics in complex systems; interdisciplinary perspectives.

Title main entry. Ed. by Melissa Jane Dark.

Information Science Reference, ©2011 282 p. \$180.00
 For students and practitioners in the new field of information assurance and security, computer scientists, philosophers, and other scholars deliberate a selection of ethical and social issues in the field such as privacy, access, safety, liability, and reliability. They ask readers to think about how the social context is shaping technology and vice versa, and to rethink conceptual boundaries. Among the topics are the importance of framing, responsibility for the harm and risk of software security flaws, behavioral advertising ethics, and a policy analysis of data breach disclosure.

QA76.9 2010-027734 978-1-60960-067-9

Knowledge discovery practices and emerging applications of data mining; trends and new domains.

Title main entry. Ed. by A. V. Senthil Kumar.

Information Science Reference, ©2011 390 p. \$180.00

This collection of fifteen articles on advanced data mining technologies provides an overview of current scholarship in this increasingly important field of information management. Divided into sections covering concepts, tools and techniques, research and learning and case studies, essays discuss such topics as detecting disguised data, temporal association in large databases, persistent strong rules, marketing and data mining and data mining and business intelligence integration. Five case studies explore real-world applications of cutting edge data mining and knowledge discovery technologies and techniques. Contributors include professors and graduate students in the fields of computer science and informatics from a variety of universities around the world.

QA246 2009-288694 978-0-521-51926-7

Aggregation functions.

Title main entry. Ed. by Michel Grabisch et al.
 (Encyclopedia of mathematics and its applications; 127)
Cambridge U. Press, ©2009 460 p. \$120.00

This volume is a comprehensive, rigorous, and self-contained exposition of aggregation functions, which are used when combining several numerical values into a single representative value. Classes of aggregation functions covered include triangular norms and conorms, copulas, means and averages, and those based on nonadditive integrals. The authors provide in-depth descriptions of the properties of each method (including interpretation, analysis, construction methods, and practical identification methods) and pay special attention to the nature of scales on which values to be aggregated are defined. This book is an excellent introduction to the subject for graduate students and an essential reference for researchers.

QA274 2010-294130 978-981-4277-25-9

Recent development in stochastic dynamics and stochastic analysis.

Title main entry. Ed. by Jinqiao Duan et al.
 (Interdisciplinary mathematical sciences; v.8)
World Scientific, ©2010 291 p. \$99.00

Invited contributions survey the literature on such aspects of stochastic dynamics and analysis as the decoherent information of quantum operations, the stochastic quantification of missing mechanisms in dynamical systems, modeling colored noise by fractional Brownian motion, the influence of transaction costs on optimal control for an insurance company with a new value function, stopping Weyl processes, stochastic integrals with respect to an infinite number of Poisson point processes and its applications, and the Choquet integral. The anthology is not indexed.

ASTRONOMY

QB460 2009-279489 978-981-4261-20-3

From quantum to cosmos; fundamental physics research in space.

Title main entry. Ed. by Slava G. Turyshev.

World Scientific, ©2009 751 p. \$160.00

The environment of space offers unique conditions for laboratory research, especially for investigations at the limits of contemporary physics. The articles in this volume discuss the advances in fundamental physics that are anticipated in the near future, and evaluate the potential of several recently proposed space-based gravitation experiments. Topics covered include tests of general relativity and alternative theories; investigation of the standard model; investigations of possible violations of the equivalence principle; and experiments aimed at the discovery of novel phenomena, such as dark matter candidates.

PHYSICS

QC173 2009-281874 978-981-283-895-7

Advanced classical field theory.

Giachetta, Giovanni et al.

World Scientific, ©2009 382 p. \$111.00

Written for theoreticians and mathematical physicists, this guide to advanced differential geometric and algebraic topological methods in field theory assumes familiarity with the basics of differential geometry of fiber bundles. Understanding of classical field theory underlies understanding of quantum field theory, and this text covers the subject beginning with a chapter on differential calculus on fiber bundles and proceeding with chapters on Lagrangian field theory, Grassmann-graded Lagrangian field theory, Lagrangian BRST theory, gauge theory on principal bundles, gravitation theory on natural bundles, spinor fields, topological field theories, and covariant Hamiltonian field theory. For readers' convenience, some math topics are compiled in the appendixes, including commutative algebra, differential operators on modules, homology and cohomology of complexes, cohomology of groups and of Lie algebras, among others. Unusual is the inclusion of both a bibliography and an index. The three authors are affiliated as follows: Giovanni Giachetta and Luigi Mangiarotti (both: U. of Camerino, Italy), and Gennadi Sardanashvily (Moscow State U., Russia).

QC173 2009-047134 978-1-4200-7540-3

Handbook of nanophysics; principles and methods.

Title main entry. Ed. by Klaus D. Sattler.

CRC Press, ©2011 --- p. \$139.95

This is the first volume of a seven-volume handbook that employs a tutorial style in which "state-of-the-art scientific content is enriched with fundamental

equations and illustrations" in order to provide a broad, scientifically literate readership with an introduction to fundamental and applied aspects of nanophysics. Edited by Sattler (physics, U. of Hawaii), the first volume's 40 peer-reviewed chapters cover general principles of theory and measurements of nanoscale systems. It has been organized into sections on design and theory, nanoscale systems, thermodynamics, nanomechanics, nanomagnetisms and spins, and nanoscale methods. Although the introductions should be comprehensible to general readers, deeper understanding may require familiarity with basic classical, atomic, and quantum physics, as well as such mathematical topics as calculus, ordinary and partial differential equations, matrices/linear algebra, complex variables, and vectors.

QC174 2009-016568 978-1-60692-596-6

Handbook of solitons; research, technology, and applications.

Title main entry. Ed. by S.P. Lang and Salim H. Bedore.

Nova Science Publishers, ©2009 854 p. \$295.00

This collection of papers includes recent research monographs, reviews of current developments, and short communications on the topic of solitons, self-reinforcing solitary waves that maintain their shape while traveling at constant speed. Topics include: ball lightning as an optical incoherent space spherical soliton, soliton fiber lasers, the soliton theory of bio-energy transport in protein molecules, solitons in systems with a cylindrical symmetry, and the Riccati equation in the study of solitons. A total of 40 authors contributed to the collection. Credentials for editors Lang and Bedore are not given.

QC174 2009-279492 978-981-283-690-8

Mathematical Feynman path integrals and their applications.

Mazzucchi, Sonia.

World Scientific, ©2009 216 p. \$42.00

The path integrals give a suggestive description of quantum evolution, says Mazzucchi (U. of Trento, Italy), reintroducing the classical concept of trajectory back into quantum mechanics. She offers a detailed and self-contained description of the rigorous mathematical realization of Feynman path integrals in terms of infinite dimensional oscillatory integrals, which can be taken as a generalization of classical oscillatory integrals to apply it on an infinite dimensional space, in particular on a space of paths. Her topics are infinite dimensional oscillatory integrals, Feynman path integrals and the Schrödinger equation, the stationary phase method and the semiclassical limits of quantum mechanics, open quantum systems, and alternative approaches to Feynman path integrals.

QC446 2010-014005 978-0-691-14056-8

Principles of laser spectroscopy and quantum optics.

Berman, Paul R. and Vladimir S. Malinovsky.

Princeton U. Press, ©2011 519 p. \$80.00

This text (based on a course taught by one of the authors) is intended in part to support an introductory graduate-level quantum mechanics course and in part to serve as an advanced level reference for those working in atomic, molecular, and optical physics. Coverage overlaps with the many texts that cover laser spectroscopy and quantum optics, but this text is distinguished by discussion of topics from a variety of viewpoints and by inclusion of topics not readily available in other introductory texts such as atom optics and interferometry, optical pumping, light scattering, and sub-Doppler laser cooling. To keep the volume a manageable size the authors have selected a limited number of fundamental applications and have not reproduced experimental data. Material is arranged in 20 chapters, each containing references and a bibliography and well-considered problems (many requiring computational techniques; Mathematica notebooks will be posted on a website). Berman (physics, U. of Michigan) and Malinovsky (visiting at Stevens Institute of Technology) have combined their efforts to produce a thorough and versatile text and reference.

QC611 978-3-908451-87-7

Defects and diffusion in semiconductors; an annual retrospective; v.12.

Title main entry. Ed. by D.J. Fisher. (Defect diffusion forum; v.303-304)

Trans Tech Publications, ©2010 393 p. \$246.00 (pa)

Developments in semiconductors, metals, ceramics, and miscellaneous material over the past year are reviewed in 15 original papers. Among their topics are the non-Gaussian diffusion of phosphorus and arsenic in silicon with local density diffusivity model, the artificial aging behavior of 6063 alloy studied using Vickers hardness and positron annihilation lifetime techniques, the liquid-phase sintering of tungsten heavy alloys, new experimental proof of phase and structure formation in metallic materials electrodeposited through a liquid state stage, the variable range hopping model in manganese oxides, and dynamics of trilliloxane wetting of hydrophobic surfaces. The final 200 pages are devoted to abstracts of articles on specific materials.

QC611 2009-041767 978-0-470-98677-6

Molecular materials.

Title main entry. Ed. by Duncan W. Bruce et al. (Inorganic materials)

John Wiley & Sons, ©2010 360 p. \$130.00

This reference work, part of the *Inorganic Materials Series*, pertains specifically to molecular materials,

typically those with applications in optoelectronics and photonics, quantum information processing, nanotechnology, and data storage. Topics covered include: metal-based quadratic nonlinear optical materials, physical properties of metallomesogens, molecular magnetic materials, molecular inorganic conductors and superconductors, and molecular nanomagnets. While the topics are very technical, the text is clear and to the point and well-supported with detailed illustrations. Editors are Bruce (chemistry, U. of York, UK), O'Hare (Chemistry Research Laboratory, U. of Oxford, UK), and Walton (chemistry, U. of Warwick, UK).

QC631 2009-052108 978-0-470-68862-5

Foundations of applied electrodynamics.

Wen, Geyi.

John Wiley & Sons, ©2010 504 p. \$125.00

Geyi (Fudan University) brings together the mathematical techniques needed to understand cutting-edge applications of electrodynamics, providing thorough introductions to microwave theory, antenna theory, wave propagation, relativity, and quantum dynamics. Topics include transmission line theory, power transmission between antennas, spectral analysis, time-domain theory of electromagnetic fields, tensor algebra on linear spaces, and the interaction of fields with charged particles. The opening chapters of the graduate engineering textbook review the solution of Maxwell equations and Eigenvalue problems.

CHEMISTRY

QD79 2010-933422 978-1-906799-03-8

Monolithic chromatography and its modern applications.

Title main entry. Ed. by Perry G. Wang. (ChromSoc separation science series)

ILM Publications, ©2010 620 p. \$270.00

Analytical chemists explain the theory, procedures, and uses of a new type of high-performance liquid chromatography that packs the column with a one-piece porous solid, or monolith, rather than particles. Among their topics are characterizing pore structure and its impact on the chromatographic properties of organic polymer monolithic capillary columns, monolithic cryogel beds prepared under varying freezing temperatures and their application in isolating nucleotides, monolithic ion exchange phases for separating small inorganic and organic ions, fast separations of phytochemicals, the pharmaceutical development of drug substance and formulations, analyzing methylated arginines and amino acids using a monolithic silica column, and applying monolithic phases in fundamental studies of vegetable proteins and food analysis and technology.

QD139 978-1-84735-483-9

Chromatography mass spectroscopy in polymer analysis.

Crompton, T.R.

Smithers Rapra, ©2010 236 p. \$165.00 (pa)

Crompton, identified only by name, explains how using the imaging technique can provide information about polymers such as the structural detail of the backbone, branching, end groups, isometric detail, and fine detail in the structure of copolymers. He discusses chromatograph techniques, mass spectroscopic techniques, chemical reaction gas chromatography, complementary high performance liquid chromatography-mass spectroscopy, complementary size exclusion chromatography-mass spectroscopy, complementary supercritical fluid chromatography-mass spectroscopy, headspace analysis-mass spectroscopy, and pyrolysis gas chromatography-mass spectroscopy.

QD281 2010-286586 978-3-527-32380-7

Catalytic asymmetric Friedel-Crafts alkylations.

Title main entry. Ed. by Marco Bandini and Achille Umani-Ronchi.

Wiley-VCH, ©2009 301 p. \$195.00

Discovered in 1877, and its versatility exploited widely since then, Friedel-Crafts alkylation is well-covered in numerous comprehensive treatises; but editors Bandini and Umani-Ronchi (both affiliated with the U. of Bologna, Italy) perceived a gap in coverage pertaining to a recent and important application in connection with the synthesis of asymmetric, optically active compounds. They have focused this volume on strategies for performing catalytic enantioselective FC alkylation (up to July 2008), with a collection of more representative diastereoselective approaches reported in one chapter. Eight contributions address general aspects and historical background, Michael Addition, addition to carbonyl compounds, nucleophilic allylic alkylation and hydroarylation of allenes, nucleophilic substitution on Csp³ carbon atoms, unactivated alkenes, catalytic asymmetric Friedel-Crafts alkylations in total synthesis, and industrial Friedel-Crafts chemistry.

QD281 2010-008429 978-0-470-08506-6

Name reactions for carbocyclic ring formations.

Title main entry. Ed. by Jie Jack Li. (Comprehensive name reactions)

John Wiley & Sons, ©2010 756 p. \$149.95

This comprehensive reference guide offers information on the most current developments in name reactions on carbocyclic ring formations, and is intended as a resource for both students and professionals working in organic chemistry and polymer synthesis. Features

include a description of a ring-forming reaction in each section that describes historical perspective, a mechanism for the reaction, variations and improvements on the reaction, synthetic utilities of the reaction, experimental details, and current references. The book also includes discussion of fundamental topics and examples of common name reactions. While extremely technical, the text is very clear and concise. Editor Li (chemist, Bristol-Myers Squibb Company) and 19 co-authors contributed to this volume.

QD322 2009-041938 978-1-60876-367-2

Handbook of carbohydrate polymers; development, properties and applications.

Title main entry. Ed. by Ryouichi Ito and Youta Matsuo. (Polymer science and technology series)

Nova Science Publishers, ©2010 864 p. \$295.00

Several of the 33 papers in this collection review the literature on fibers spun from polysaccharides, starch-clay nanocomposites, intelligent anti-tumor drug delivery, carbohydrate binding modules, chitosan-based microspheres, waxy wheat starch, and edible polysaccharide films. Other chapters present specific developments in the chemical modification of cellulose fibers to inhibit biodegradation, hydrogel materials derived from seaweed, the effect of visible light on physical and enzymatic transformation, and recovering feruloylated arabinoxylans from corn tortilla wastewater. No peer review process is noted.

QD502 2010-029280 978-1-4200-4755-4

Handbook of chemical mass transport in the environment.

Title main entry. Ed. by Louis J. Thibodeaux and Donald Mackay.

CRC Press, ©2011 611 p. \$149.95

This handbook on environmental mass transfer and mass transport coefficient estimation methods is intended to be accessible to a broad range of scientists, engineers, researchers, and students. The book begins by introducing the concept of chemical mobility in the environment and discussing mass transport fundamentals from an environmental perspective. It then deals with the fugacity approach and the conventional approach to mass transfer, and describes individual mass transfer processes and the flux equations required for a quantitative expression. The rest of the book sets out specific mass transport processes in a consistent format. After a detailed qualitative description, each chapter presents key theoretical mathematical formulations, describes field and lab measurements of transport parameters, gives data tables and algorithms for numerical estimates, and presents worked example problems, case studies, and/or exercises with worked solutions and answers. Thibodeaux teaches chemical engineering at Louisiana State University. Mackay

is professor emeritus of the University of Toronto.

QD549 978-0-87849-158-2

Wave oscillations in colloid oxyhydrates.

Sucharev, Yur I. (Materials science foundations; vs.70-71)

Trans Tech Publications, ©2010 497 p. \$166.00 (pa)

Coherent chemistry, the chemistry of periodical oscillatory processes, is well established in physical chemistry, chemical physics, and biological chemistry, says Sucharev (Chelyabinsk State U., Russia), but not in traditional non-organic chemistry and related branches, such as colloid chemistry. He suspects that much important phenomena is being overlooked during catalysis or adsorption for that reason. He reports on research his laboratory has carried out on oxyhydrate gel systems of rare-earth elements and some related material. They discovered quite early that the properties of oxyhydrates are barely reproducible, or even irreproducible, a problem they are still working on. Meanwhile, he presents some results in process that other scientists can use as starting point. The topics include zirconium oxyhydrate gels with specifically repeated pulsation macromolecules' organizations, Liesegang operator as a consequence of the ionic molecular motion inside the Lenard-Jones potential, organizational mechanism in colloid chemistry stochastic systems, and the lag in how an external magnetic activation affects oxyhydrate gels.

BIOLOGY

QH324 2010-025741 978-1-4398-1678-3

Clustering in bioinformatics and drug discovery. (DVD included)

MacCuish, John D. and Norah E. MacCuish. (Chapman & Hall/CRC mathematical and computational biology series)

CRC Press, ©2011 214 p. \$79.95

John trained in computer science and has been involved with data mining and statistical analysis; Norah trained as a theoretical physical chemist and has mostly worked for pharmaceutical companies on drug discovery. They run a company that merges their fields, and it is that overlap that they describe here. They explain how cluster analysis, an exploratory data analysis tool, is used in bioinformatics and cheminformatics as they relate to drug discovery. The goal is for practitioners to be aware of the relative merits of clustering methods with the data they have at hand.

QH324 2010-028353 978-0-470-58159-9

Computational intelligence and pattern analysis in biology informatics.

Title main entry. Ed. by Ujjwal Maulik et al. (Bioinformatics; computational techniques and engineering)

John Wiley & Sons, ©2010 372 p. \$110.00

This collection of 16 papers, edited by Maulik (computer science and engineering, Jadavpur

U., India), Bandyopadhyay (Indian Statistical Institute, India), and Wang (data and knowledge engineering, New Jersey Institute of Technology, US), brings together contributions from practitioners integrating computational intelligence and pattern analysis techniques for analyzing biological data, including sequence, structure, and microarray data. The material is organized into five sections that explore basic principles and methodologies of computational techniques, applications of computational intelligence and pattern analysis for biological sequence analysis, structural analysis; microarray data analysis, and systems biology.

QH324 2010-010927 978-0-470-74831-2

Knowledge-based bioinformatics; from analysis to interpretation.

Title main entry. Ed. by Gil Alterovitz and Marco Ramoni.

John Wiley & Sons, ©2010 375 p. \$75.00

Inspired by the growth of large scale biometric databases such as genome projects and protein data sets, this collection of thirteen essays examines the state of the art in bioinformatics. Divided into two sections, essays dealing with the theoretical fundamentals of large biomedical data sets cover such topics as knowledge-driven approaches to genome-scale analysis, building bio-ontologies and bayesian methods in genomic and proteomic studies, while articles on applied practices discuss genome annotation methodolgies, challenges in identifying bimolecular relationships and networks and gene ontology functional annotation. Contributors include medical academics and researchers from the US, Europe and Asia.

QH324 978-0-85404-189-3

Molecular simulations and biomembranes; from biophysics to function.

Title main entry. Ed. by Mark S.P. Sansom and Philip C. Biggin.

Royal Soc. of Chemistry, ©2010 314 p. \$219.00

In their preface editors Sansom and Biggin (biochemistry, U. of Oxford, UK) discuss the increasingly important role that simulations are playing in the study of the biophysics and function of membranes and their proteins, and the increasing importance of a diversity of multi-scale simulation approaches to accommodate such investigations. They see simulation studies in the future having a major impact on fundamental biomedical science and on areas such as pharmacology and bionanotechnology of membranes. Ten chapters (each with references; contributors are based in the UK, France, and the US) discuss methods and parameters for membrane simulations, lateral pressure profiles in lipid membranes, coarse-grained molecular dynamics simulations, models for peptide folding and insertion, membrane sculpting by N-BAR domains, computational approaches to ionotropic

glutamate receptors, and active transport across the cellular membrane, among other topics. The book is attractively produced, with color illustrations. It is distributed in the US by Springer-Verlag.

QH585 2010-022296 978-0-8194-8247-1

Bioluminescence and fluorescence for in vivo imaging.

Brovko, Lubov. (Tutorial texts in optical engineering; v.TT91)

SPIE, ©2010 148 p. \$61.00 (pa)

A senior researcher with the Canadian Research Institute for Food Safety, Brovko has been investigating properties and applications of bioluminescence for more than 30 years. Here she explains the basics of bioluminescence and fluorescence systems to scientists and students in basic cell physiology, and engineers and managers in drug discovery and preclinical development. She discusses practical aspects of using the non-invasive *in vivo* imaging technology to monitor intracellular processes. Some basic knowledge of biochemistry and biophysics would be nice, but she reviews the fundamental principles just in case.

TECHNOLOGY (GENERAL)

T55 2010-029858 978-1-4398-0331-8

Design and safety assessment of critical systems.

Bozzano, Marco and Adolfo Villafiorita.

CRC Press, ©2011 279 p. \$89.95

Researchers with an Italian company, Bozzano and Villafiorita introduce researchers and practitioners in safety engineering and safety assessment to the design and verification of safety-critical systems, focusing on safety assessment using formal methods. They discuss fundamental concepts; issues related to the design, development, and safety assessment of critical systems; some of the best known notations, techniques, and procedures and how formal methods can be used to realize them; traditional verification and validation techniques; and new trends in formal methods for assessing safety. A final chapter looks at how formal methods can be used in the certification process as well.

T57 2010-028413 978-1-4200-7627-1

Handbook of industrial engineering equations, formulas and calculations.

Badiru, Adedeji B. and Olufemi A. Omिताomu.

CRC Press, ©2011 -- p. \$129.95

For industrial engineers, instructors, undergraduate and graduate students, researchers, and consultants, Badiru (systems and engineering management, Air Force Institute of Technology) and Omिताomu, a research scientist in computational sciences and engineering at Oak Ridge National Laboratory, present a handbook of industrial engineering

calculations, including basic math, engineering math, production engineering, engineering economics, ergonomics, facility layout, production sequencing and scheduling, systems engineering, data engineering, project engineering, and simulation and statistical calculations. The first chapter describes the computational foundations of industrial engineering.

ENGINEERING (GENERAL, CIVIL)

TA15 2010-278117 978-0-415-32525-7

Engineers; a history of engineering and structural design.

Wells, Matthew.

Routledge, ©2010 243 p. \$165.00

British architect and engineer Wells suggests that the clean mathematical elegance of modern structural engineering, may be more contingent and less inevitable than many in the profession assume. Looking at engineering and structural design in Western culture from prehistory and ancient times to the present, he provides a collection of methods, biographical details, and case studies that can serve as an enabling device in the design process. He asks contemporary practicing and student engineers to consider the conceptual spaces in which their predecessors have been obliged to work. He pays special attention to dead ends, abandoned ideas, and marginalia. Among his chapters are Byzantium and the European Dark Ages 476-1000, Galileo 1564-1642, the American Reconstruction 1860-90, and flight and the World Wars 1900-50.

TA169 2010-028409 978-0-470-60465-6

Design for reliability; information and computer-based systems.

Bauer, Eric.

John Wiley & Sons, ©2010 325 p. \$99.95

Intended for systems architects, designers, engineers and testers this volume presents an overview and collection of best practices for designing reliable and available computer information and network systems. The work is divided into three sections covering the basics of system architecture and reliability, design concepts such as redundancy, robust design and error detection and specific reliability design criteria such as service availability plans, downtime budgeting and stability testing. A case study in reliable design is included detailing the design, testing and deployment of a model instant messaging system. Bauer is a software developer and a reliability engineer for Alcatel-Lucent.

TA170 2010-035676 978-0-7844-1119-3

Sustainability guidelines for the structural engineer.

Title main entry. Ed. by Dirk M. Kestner et al.

Am. Society of Civil Engineers, ©2010 315 p. \$76.00 (pa)

Intended to provide practical instruction for engineers

tasked with adopting sustainable practices in structural design, this volume provides a selection of articles in five major areas of structural engineering. Essays are grouped into broad sections covering sustainable construction concepts and standards, strategies for sustainable building, properties of specific building materials, and green infrastructure projects. The work concludes with an examination of ten case studies highlighting key sustainability, green building and design concepts. Articles are authored by a variety of professional engineers and the work is published under the auspices of the Sustainability Committee of the American Society of Civil Engineers.

TA347 2010-017668 978-1-4398-2027-8
Smoothed finite element methods.

Liu, G. R. and Nguyen Thoi Trung.

CRC Press, ©2010 671 p. \$139.95

Liu (National University of Singapore) and Nguyen (Vietnam National University) introduce newly developed S-FEM models that combine FEM and mesh-free techniques, and explain their application to fracture mechanics, plates, piezoelectrics, heat transfer, and acoustics problems. Intended for mechanical and structural engineers, the graduate textbook describes each step in the S-FEM method and analyzes the properties of S-FEM models using smoothing domains based on cells, nodes, edges, and faces. Numerical examples are provided for an interfacial crack, elastic strain on a hollow sphere, plate buckling, an engine pedestal, and acoustic pressure distribution in a car passenger compartment.

TA418 978-1-60750-552-5
Approaches in material sampling. (CD-ROM included)

Title main entry. Ed. by Bastiaan Geelhoed.

IOS Press, ©2010 152 p. \$80.00 (pa)

This volume describes a range of possible approaches in material sampling with consideration given to a range of topics including quality control and environmental monitoring. Modeling and more empirical methods are covered, along with resampling and cases where spatial dependence plays a role. The attached CD contains sample mass and uncertainty calculators to work with the underlying data, along with a demo-version of the program SISSI. No index has been provided.

TA418 2010-286331 978-3-527-40892-4
Carbon nanotube reinforced composites; metal and ceramic matrices.

Tjong, Sie Chin.

Wiley-VCH, ©2009 228 p. \$200.00

Because carbon nanotubes have large aspect ratios, extremely high Young modulus and mechanical strength, and superior electrical and thermal conductivity, says Tjong (physics and materials science, City U. of Hong Kong), incorporating them

into metal and ceramics produces high performance and functional nanocomposites with enhanced mechanical and physical properties. He examines the current status of synthesis, microstructural characterization, physical and mechanical properties, and applications of such composites, first with metal and then with ceramics. The manufacture of these nanocomposites for commercial applications is still embryonic, he explains, and its growth requires better understanding of the fundamental aspects.

TA418 978-1-84569-672-6
Physical properties and applications of polymer nanocomposites.

Title main entry. Ed. by S. C. Tjong and Yiu-Wing Mai. (Woodhead publishing in materials)

Woodhead Publishing, ©2010 912 p. \$330.00

Polymer composites reinforced with nanotubes, nanoplalets, or nanoparticles have attracted interest for application in a number of areas because of peculiar properties they can display. Materials scientists and chemists from laboratories around the world set out fundamental issues, physical properties, and applications of the materials. Their topics include the conductivity and dielectric characterization of polymer nanocomposites, crystallization behavior in semi-crystalline polymer-clay nanocomposites, polymer/carbon nanotube composites to reduce electromagnetic interference, and gas sensing conductive polymer nanocomposites filled with carbon black nanoparticles.

TA418 978-1-84735-472-3
Thermo-oxidative degradation of polymers.

Crompton, T.R.

Smithers Rapra, ©2010 136 p. \$165.00 (pa)

Crompton (consultant, analytical chemistry) provides a detailed focus on available information on the thermo-oxidative resistance of polymers to change during processing and in their end-use lives. The author's intent is to also review current understanding of the chemical changes in polymers as they degrade, and address the analytical methods that can be used to ascertain those changes. Topics include: methodology of thermo-oxidative polymers, carbon-hydrogen-type polymers, polypropylene, oxygen-containing polymers, halogen-containing polymers, and silicon-containing polymers. The book will interest anyone involved in polymer stability and degradation, manufacturing, mechanical engineers, and students studying in these or related fields.

TA481 2010-036248 978-1-4398-1149-8
Carbon nanotubes; reinforced metal matrix composites.

Agarwal, Arvind et al. (Nanomaterials and their applications)

CRC Press, ©2011 305 p. \$159.95

While the majority of carbon nano-tube (CNT)-reinforced composite research has been focused on the polymer matrix composites, comparatively little has been conducted with regard to CNT-reinforced metal matrices, which the authors (all of Florida International U.) find surprising because of the promises of such materials to possess such qualities as light weight; high strength; low coefficient of thermal expansion; and high thermal conductivity for use in automobile, aerospace, and electronic packaging applications. They therefore review the current research on different metal matrix (MM)-CNT composites, preferring to highlight critical issues in developing the composites rather than merely summarizing the current research. Ten chapters address advantages, limitations, and evolution of the processing techniques for MM-CNT composites; the characterization techniques unique to the study of the MM-CNT composites; tables providing information on composition, processing method, quality of CNT dispersion, and properties; strengthening due to CNT addition; the significance of chemical stability of CNTs in the metal matrix and its impact on the CNT/metal interface and mechanical properties; the issues of CNT dispersion in the metal matrix; prospective computational methods for research; and potential applications.

TA645 2010-020065 978-0-923907-88-4

Modeling for structural analysis; behavior and basics.

Powell, Graham H.

Computers & Structures Inc., ©2010 365 p. \$150.00

Powell (emeritus civil engineering, U. of California-Berkeley) aspires to change how students, practicing engineers, and instructors perceive and teach structural analysis. He says that the reason young civil engineers use computer programs blindly, without understanding what they are doing, is because they were taught that structural analysis can reveal everything they need to know about the behavior of a structure with a high degree of accuracy. In fact it is highly approximate at best, he says, and a useful tool for structural design but is not magic. He focuses on the direct stiffness method of analysis, using physical explanations rather than formal theory or mathematics, and covers both material and geometric non-linearity in considerable detail.

TA664 2010-019474 978-0-470-97263-2

Design and analysis of composite structures; with applications to aerospace structures.

Kasapoglou, Christos. (Aerospace)

John Wiley & Sons, ©2010 300 p. \$105.00

The focus of this text is preliminary design, that is, methods and approaches for coming up with a collection of rough ideas to be considered before

applying the more complex methods involving finite elements. Kasapoglou (aerospace engineering, Delft U. of Technology, The Netherlands) emphasizes in his preface that people who design need "experience, intuition, inspiration and thorough knowledge of the basics." This text provides a background of best practices, details representative types of composites, and demonstrates a variety of approaches. More specifically, coverage includes cost of composites, a review of classical laminated plate theory, composite structural components and mathematical formulation, buckling, post-buckling, beams, skin-stiffened structure, and sandwich structure. Exercises, references, and access to a companion website are included. Readers—fourth-year undergraduates, graduate-level students, and beginning engineering professionals—should be familiar with classical laminated-plate theory and first ply failure criteria; some understanding of energy methods and Rayleigh-Ritz approaches will make the going easier; and basic applied math—such as Fourier series, simple solutions of partial differential equations, and calculus of variations—is assumed.

TA1634 2010-021446 978-1-60960-024-2

Computer vision for multimedia applications; methods and solutions.

Title main entry. Ed. by Jinjun Wang et al.

Information Science Reference, ©2011 333 p. \$180.00

In the preface this book notes how computer vision is still at an "immature" stage of development and how much research, until recently, has only been devoted to specific tasks. This volume is intended to give a broader picture of the situation in sixteen general areas, such as landmark-based vehicle navigation, human recognition, and multimedia content summary and analysis.

TA1637 2010-000343 978-0-470-68983-7

Fourier methods in imaging.

Easton, Roger L. (Wiley-IS&T series in imaging science and technology)

John Wiley & Sons, ©2010 930 p. \$165.00

Scientists, engineers, and advanced students working in modern imaging systems will use this reference for a review of operations on both 'live optical' images and captured digital images in the spatial frequency domain and how these operations relate to methods in the spatial domain. The book begins by introducing basic mathematical concepts of linear algebra for vectors and functions. The next section defines a set of special functions and presents the mathematical operations and transformations of continuous functions used for describing imaging systems. The Fourier transforms of 1-D and 2-D functions are considered in detail, and two chapters are devoted to the Fourier transform of discrete functions. The next section considers the description of imaging systems as linear filters and applies the mathematical tools

to solve specific imaging tasks. The final section of the book describes applications of linear systems for modeling optical imaging systems, including holography. Chapter problems and b&w images are included, and two software programs used to create the book's examples are available free online. Easton is affiliated with Rochester Institute of Technology.

TA1637 2010-031499 978-1-4398-1930-2

Super-resolution imaging.

Title main entry. Ed. by Peyman Milanfar. (Electrical engineering)

CRC Press, ©2011 472 p. \$139.95

For engineers, scientists, and graduate students in image processing courses, Milanfar compiles 14 chapters that introduce the field of super-resolution imaging, including its history, locally adaptive processing methods, methods for explicit motion estimation, deblurring, building robustness in the reconstruction process, and Bayesian statistical approaches to addressing the motion between frames, the blur kernel, and the high-resolution image. The contributors, academics and industry scientists in Europe, Asia, and the US, then cover learning-based methods and applications in medical imaging and remote sensing, as well as a successful commercial application of super-resolution.

ENVIRONMENTAL TECHNOLOGY

TD887 2010-028255 978-0-8493-9717-2

Radioactive air sampling methods.

Title main entry. Ed. by Mark L. Maiello and Mark D. Hoover.

CRC Press, ©2011 581 p. \$129.95

For the fourth edition of the large *Methods of Air Sampling and Analysis*, Maiello updated the radioactive air sampling section; unfortunately the tome's editor died in 2001 and the new edition never saw the light of day. That material has been expanded and updated from other sources to provide a current reference specifically on methods for sampling radioactivity in air. It covers objective, safety issues, standards, and a life-cycle approach for sampling airborne radioactivity; fundamentals of radioactivity and radioactive aerosols; fundamentals of sampling system design and operation for airborne radioactivity; and non-routine radioactive air sampling. A final section provides examples of methods, among them determining the gross beta-radioactivity content of the atmosphere, carbon-14 in air, sampling air for various gamma-emitting radioactive gases using gamma-spectroscopy, and the real-time monitoring of breathing zones for personal respiratory protection.

BUILDING CONSTRUCTION

TH880 2010-039833 978-0-07-174445-4

LEED—new construction project management.

Yellamraju, Vijaya. (Greensource book)

McGraw-Hill, ©2011 474 p. \$75.00

This guide to LEED project management provides a comprehensive, start-to-finish manual for the design and construction of environmentally sustainable new construction projects. Chapters cover the design process in detail, including the early introduction of LEED principles into architectural decision making, defining the sustainability goals of the project, and specific calculations and standards necessary for earning the LEED rating. Several case studies of successful LEED certified projects are included as well as a collection of credit implementation worksheets and example documentation. Numerous tables, charts and illustrations are included throughout the work and online access to construction tables and blank forms is provided. Yellamraju is the owner of Green Potential, a green building and LEED certification consulting company in Austin, Texas.

TH1611 2010-025888 978-1-4398-1599-1

Construction management and design of industrial concrete and steel structures.

El-Reedy, Mohamed A.

CRC Press, ©2011 553 p. \$139.95

El-reedy, a structural engineer and a consultant for major industrial building firms, presents this overview of best practices for the design, management, construction and maintenance of large scale concrete and steel industrial construction projects. Designed as a reference for practicing engineers but also useful for introducing students and project managers to the unique characteristics of large scale industrial projects, this volume covers a variety of building types including factories, storage tanks and offshore structures and details practices from design and accounting to assessment of existing structures, load calculations and maintenance plan development. Numerous illustration and charts are included and practical engineering formula examples are provided throughout the work.

MECHANICAL ENGINEERING & MACHINERY

TJ146 2009-038660 978-1-60876-227-9

Engineering physics and mechanics; analyses, prediction, and applications.

Title main entry. Ed. by Matias Sosa and Julián Franco. (Engineering tools, techniques and tables series)

Nova Science Publishers, ©2010 609 p. \$195.00

The lengthy opening chapter of this volume analyzes the thermodynamic efficiency of alternative refrigerating

and air conditioning systems based on solar absorption technology, and describes the design of a pilot plant in Odessa. The following 12 chapters model interaction kinetics during combustion synthesis of advanced materials, survey new directions in space materials research, and propose a multi-model approach to controlling the nonlinear behavior of large structures equipped with smart devices. Russian contributors describe oil shale transformation under thermal processing, analyze current transport in metal conductors at low temperature, and calculate the free-flowing axisymmetric movement of granular substances. No credentials are cited for the editors and no peer review process is noted.

TJ211 2009-042051 978-1-61520-849-4

Intelligent industrial systems; modeling, automation, and adaptive behavior.

Title main entry. Ed. by Gerasimos G. Rigatos.

Information Science Reference, ©2010 569 p. \$180.00

The 17 chapters collected in this volume present new research on industrial and mobile robots, the fault diagnosis of industrial systems, and intelligent algorithms for improving the operation and safety of power generation and distribution systems. Three chapters on stochastic modeling review the main stochastic methods for solving continuous non-convex constrained optimization problems, identify linear time-varying systems using Kalman filters, and introduce an IDE for designing fuzzy rules. Other topics include intelligent automatic guided vehicles, visual feedback for non-holonomic mobile robots, monitoring non-stationary systems using dynamic pattern recognition, predicting the hot spot temperature of power components, and state observers for networked control systems.

TJ211 2010-930894 978-1-60750-596-9

Visual affect recognition.

Stathopoulou, Ioanna-Ourania and George A. Tsihrintzis.

(*Frontiers in artificial intelligence and applications*; v.214)

IOS Press, ©2010 247 p. \$174.00

Stathopoulou (computer science) and Tsihrintzis (electrical engineering, both U. of Piraeus, Greece) explore the expression of emotion primarily by people's faces, but secondarily by their motion and gestures. Their goal is to develop a fully automated visual affect recognition system that could be useful in novel and future modes of human-computer interaction. Drawing on both the published literature and their own empirical research, they conclude that a number of brain parts play significant roles in perceiving and expression emotion; that there are six basic emotions: anger, disgust, fear, happiness, sadness, and surprise; and that there is cultural specificity in emotion perception and expression. They construct a face image database from low-resolution and high-resolution images. There is no index.

TJ213 2010-035470 978-1-4398-2047-6

Synchronization and control of multiagent systems.

Sun, Dong. (Automation and control engineering18)

CRC Press, ©2011 184 p. \$119.95

Sun (manufacturing engineering and engineering management, City U. of Hong Kong) introduces in detail a cross coupling-based synchronization control approach to multi-agent systems. He shows how to pose the multi-agent control problem as a synchronization control problem, permitting each agent to be part of the coordination system while recognizing its individual task performance capability. The theoretical framework and methodology for cooperation among multiple agents that he develops can address problems of uncertain dynamic models and unknown environmental disturbances. The applications of synchronization control are primarily in manufacturing, civil applications, and system biology and human health.

TJ255 2010-018381 978-0-470-49662-6

Thermal design; heat sinks, thermoelectrics, heat pipes, compact heat exchangers, and solar cells.

Lee, HoSung.

John Wiley & Sons, ©2010 630 p. \$150.00

Thermal systems are necessary at every scale, from electronic devices to large manufacturing plants. This text/reference systematically and thoroughly treats each of the topics announced in the subtitle (heat sinks, thermoelectrics, heat pipes, compact heat exchangers, and solar cells)—combining presentation of the fundamentals, theory, and techniques with plenty of instruction tools and step-by-step instruction on creating virtual thermal systems. Lee (mechanical and aeronautical engineering, Western Michigan U.) has prepared this text for college-level students as well as practitioners. Nine appendices present material pertaining to thermophysical properties, thermoelectrics, pipe dimensions, and curve fitting of working fluids, among other topics.

TJ808 2010-014734 978-0-415-56686-5

Sustainable energy.

Title main entry. Ed. by Klaus D. John and Dirk T.G.

Rübbelke. (*Routledge explorations in environmental economics*; v. 30)

Routledge, ©2011 162 p. \$130.00

In this volume based on the 7th Chemnitz Symposium: "Europe and Environment," John (economic policy Chemnitz U. of Technology, Germany) and Rübbelke (Basque Centre for Climate Change, Basque Foundation for Science, Bilbao, Spain) introduce the challenges that renewable sources of energy and energy efficiency can address: climate change, highly volatile energy prices on the global market, dependency on non-renewable fuels from political unstable countries, and the transfer of wealth to these countries. International,

multidisciplinary contributors to seven illustrated chapters treat aspects and examples of a low-cost, large-scale renewable electricity supply; policy issues; a model for predicting consumption based on insights from economics and social psychology; and Germany's pioneering efforts. Discussions following the papers presented conclude the volume.

**ELECTRICAL ENGINEERING,
ELECTRONICS, NUCLEAR ENGINEERING**

TK1010 2010-039152 978-0-470-48440-1

Direct methods for stability analysis of electric power systems; theoretical foundation, BCU methodologies, and applications.

Chiang, Hsiao-Dong.

John Wiley & Sons, ©2011 494 p. \$145.00

As an alternative to the transient stability analysis of power grids, Chiang (electrical and computer engineering, Cornell U.) contends that an approach called the direct method, or energy function-based direct is faster and provides more information. It has been considered impractical by many researchers and users, and he admits that several challenges and limitations must be overcome, but it these that he addresses here. His topics include system modeling and stability problems, constructing numerical energy functions for lossy transient stability models, foundations of the potential energy boundary surface method, and group properties of contingencies in power systems.

TK5102 2010-015993 978-1-61520-737-4

Chaos synchronization and cryptography for secure communications; applications for encryption.

Title main entry. Ed. by Santo Banerjee.

Information Science Reference, ©2011 570 p. \$180.00

Providing a detailed overview of each topic, this volume offers 21 chapters on chaos theory, the synchronization of chaotic systems, and cryptographic applications. Among the applications are secure transmission of analog information using chaos, control-theoretical concepts in the design of symmetric cryptosystems, and chaos synchronization with genetic engineering algorithm for secure communication. The volume will be of interest to specialists and students in engineering and communication. Banerjee is a researcher in the department of mathematics of the Politecnico di Torino, Italy.

TK5102 2010-004481 978-0-470-66520-6

Near-capacity variable-length coding; regular and exit-chart-aided irregular designs.

Title main entry. Ed. by Lajos Hanzo et al.

John Wiley & Sons, ©2011 494 p. \$140.00

Intended for wireless communications engineers or advanced graduate students, this volume presents current research on variable-length coding in signal compression technology. Beginning with a discussion of the history of coding and decoding and an overview of information theory concepts, the work is presented in three broad sections covering regular concatenated codes, the design of irregular concatenated variable-length codes (VLCs) and practical application of VLCs. Chapters are meticulously notated and include numerous illustrations, diagrams and equations. Hanzo, Maunder, Wang and Yang are engineers with the Communications Research Group at the School of Electronics and Computer Science, University of Southampton, UK.

TK5103 2010-025218 978-1-4398-0649-4

Evolved cellular network planning and optimization for UMTS and LTE.

Title main entry. Ed. by Lingyang Song and Jia Shen.

CRC Press, ©2011 619 p. \$99.95

This edited volume provides an introduction to planning and optimization techniques and practices using system level simulation models for advanced cellular networks, covering UMTS (Universal Mobile Telecommunication System), HSPA (high-speed packet access), and LTE (long-term evolution) networks. It also addresses inter-operation issues with existing networks, issues of LTE deployment, troubleshooting, and radio performance analysis.

TK5103 2010-028749 978-1-4200-9170-0

Fixed mobile convergence handbook.

Title main entry. Ed. by Syed A. Ahson and Mohammad Ilyas.

CRC Press, ©2011 474 p. \$139.95

For mobile technology designers and planners, researchers, and graduate students, Ahson, a software design engineer, and Ilyas (research and industry relations, College of Engineering and Computer Science, Florida Atlantic U.) bring together 16 chapters on the design, implementation, and management of converged cellular/WiFi wireless networks. The contributors, a group of researchers in engineering and computer science from Europe, Asia, and the US, discuss topics from basic concepts to research subjects and future directions, including femtocell network technology and applications, deployment modes and interference avoidance, architecture of power efficiency, conversational quality and network planning, and the design of session initiation protocol-based mobility management protocols.

TK5103 978-1-60807-098-5

Quantitative analysis of cognitive radio and network performance. (DVD included)

Marshall, Preston. (Mobile communications series)

Artech House, ©2010 458 p. \$129.00

Marshall (electrical engineering, USC) provides measurements and analysis techniques for determining the quantitative contribution of cognitive radio in analogous terms to current evaluations of conventional radio and network architectures. After reviewing the basic principles of radio design and spectrum management, the textbook characterizes spectrum environments, explains how cognitive radio can increase the density of wireless devices, and suggests several approaches for implementing cognitive radio functionality. The accompanying DVD contains a link margin spreadsheet, processed frequency domain samples, and MATLAB routines.

TK5104 2010-003320 978-0-470-71428-7

Satellite systems for personal applications; concepts and technology.

Richharia, Madhavendra and Leslie David Westbrook. (Wireless communications and mobile computing)

John Wiley & Sons, ©2010 461 p. \$115.00

Thorough, thoughtfully presented, and well illustrated, this textbook presents the world of satellite technology now prevalent in everyday life, using the individual, end-user application as its organizing principle. The initial chapters detail the basic concepts and principles of the technology, with descriptions of practical system techniques and architectures in the remaining chapters. Case studies are used throughout and each chapter concludes with study questions and a list of references. As part of the focus on the user, the discussion encompasses future trends in technology.

TK5105 2010-016920 978-0-470-54356-6

Convergence of mobile and stationary next-generation networks.

Title main entry. Ed. by Krzysztof Iniewski.

John Wiley & Sons, ©2010 790 p. \$115.00

Intended as a preview of cutting edge technologies designed to deal with the ever increasing demand for network bandwidth, this collection of twenty-four essays presents scholarship on several types of emerging high-speed network technologies. Divided into sections covering access and backhaul networks, wireline technologies, wireless and spectrum management, metropolitan core, storage and area networks and photonic component technology, specific topics discussed include fiber-wireless network, packet backhaul systems, passive optical networks, mobile wimax, ROADM and radio-frequency transmitters. Appropriate for electronics and communications engineers and high level graduate students, contributors to this work include academics from a variety of universities around the world as well as industry experts in computer networking, fiber optics and telephony.

TK5105 978-1-60750-654-6

Description logic rules.

Krötzsch, Markus. (Studies on the semantic web; v.8)

IOS Press, ©2010 263 p. \$73.00 (pa)

Krötzsch (computing, U. of Oxford) advances the development of hybrid description logic rule languages based on first-order Horn rules. After an introduction and basic definitions, he covers description logics, combining them with datalog, extending them with role constructors, Horn logic fragments of them, their datalog fragment, description logic fragments of semantic web rule language, and extending description language rules with safe variables.

TK5105 2010-016634 978-0-470-58588-7

Introduction to IP address management.

Rooney, Tim.

Wiley-IEEE Press, ©2010 263 p. \$59.95 (pa)

This small volume presents an overview and collection of basic best practices for managing Internet Protocol (IP) addresses. Intended for network managers and server administrators, the guide begins with an explanation of IP addresses and their role as the primary navigation tool of the internet and discusses the importance of Dynamic Host Configuration Protocol (DHCP) and Domain Name System (DNS) for allowing connection to, and navigation within, networks. The author argues that IP address management (IPAM) should be given a similar value within a network administrator's tool set as other tasks such as server security, firewalls and router management. Chapters discuss management and work-flow for IPAM, integrated Ipv4 and Ipv6 environments and DNS and DHCP server maintenance and security. Rooney is a networking and telephony expert currently working for BT Diamond IP.

TK5105 2010-020583 978-1-58705-352-8

Network security auditing.

Jackson, Chris.

Cisco Press, ©2010 488 p. \$70.00 (pa)

Intended for beginner to intermediate network administrators, this volume examines the fundamentals of network security auditing and presents Cisco product solutions to common security tasks and infrastructure needs. The work begins by outlining the basic principles of network auditing and proceeds through discussions of such topics as security governance and standards, auditing tools and techniques, infrastructure security, access control and secure remote access. Networking diagrams, illustrations and code samples are provided throughout and while examples in this volume are Cisco hardware and software specific, the general principles of network auditing and security are universally applicable. Jackson is a Cisco security expert and holds a CCIE certification.

TK5105 2010-043139 978-0-07-170109-9

Security information and event management (SIEM) implementation.

Title main entry. Ed. by David R. Miller et al.

McGraw-Hill, ©2011 430 p. \$65.00 (pa)

This guide to using Security Information and Event Management (SIEM) software for intrusion detection, traffic monitoring and general infrastructure management of remote computer systems, provides an overview of the concepts, applications and techniques required to implement this increasingly popular set of network security tools. Intended for security offices and network administrators, the text is divided into three sections beginning with a discussion of threat intelligence and IT business models, followed by an overview of SIEM concepts and methods, and concluding with an examination of several specific SIEM applications including Alien Vault, Cisco MARS, Q1 QRadar and ArcSight ESM. Chapters include numerous illustration, screen shots and code examples. Miller, Harris, Harper, VanDyke and Blask are information systems and security consultants.

TK5105 2010-023573 978-1-58705-528-7

VoIP performance management and optimization.

Ahmed, Adeel et al.

Cisco Press, ©2011 422 p. \$65.00

Intended as a reference guide for network engineers, architects and managers, this volume provides practical information for optimizing, managing and troubleshooting Voice over IP (VoIP) networks on an enterprise level. The volume begins with an overview of VoIP concepts and basic network management tasks and progresses through a discussion of a variety of VoIP implementation strategies and problems that can arise with each method. The work concludes with an examination of proactive best practices for monitoring networks, preventing VoIP network problems from occurring and resolving them quickly when they do. Ahmed and Siddiqui are senior managers in the Cisco Advanced Services group and Madani is a Cisco network consulting engineer.

TK7867 978-1-59693-981-3

Understanding signal integrity.

Thierauf, Stephen C.

Artech House, ©2010 239 p. \$139.00

A signal integrity and design engineer in private practice, Thierauf presents an introductory text for engineers, project leaders, and managers setting out the fundamentals of signal integrity. He details the electrical characteristics of the various types of transmission lines present on circuit boards, with particular attention to the differences between them. Other topics include reflection, termination strategies, cross-talk, circuit board technology, signal loss, and differential signaling. Readers are presumed to have

a basic background in electrical engineering, including an elementary understanding of voltage, current, resistance, capacitance, and inductance; but not signal integrity, electromagnetics, or transmission line theory. Exercise problems with detailed solutions are provided for self-assessment and as templates for real problems.

TK7871 2010-018784 978-0-470-69445-9

Broadband communications via high altitude platforms.

Grace, David and Mihael Mohorcic.

John Wiley & Sons, ©2011 372 p. \$125.00

This scholarly volume on the state of the art of High Altitude Platforms (HAP) presents the latest research in this emerging field of broadband communications technology. The work is divided into sections covering existing HAP technologies, current research advancing the use and integration of the platforms with existing communications networks and directions for future study with chapters addressing specific topics such as aeronautics and energetics, business modeling and operating scenarios, physical environmental concerns in HAP operations, advanced communications techniques as enablers for HAP-based systems, and multiple integrated HAP networks. The work is well referenced and includes over one hundred and fifty figures and more than seventy-five tables. Contributors include professionals and academics in the field of communications engineering from Slovenia, Israel, Thailand and the UK.

TK7871 2010-030233 978-1-4398-0688-3

Iontronics; ionic carriers in organic electronic materials and devices.

Title main entry. Ed. by Janelle Leger et al.

CRC Press, ©2011 225 p. \$119.95

Iontronics is a new field that studies how electricity can modify such properties of organic compounds and polymers as electronic conductivity, color, fluorescence intensity, and volume. Contributors from universities and companies in Europe, North America, and China discuss such aspects of the field as the development and application of ion-functionalized conjugated polymers, the light-emitting electrochemical cell, electrochromic displays, organic electrochemical transistors for sensor applications, and polyelectrolyte-gated organic field-effect transistors.

TK7871 978-1-60807-063-3

Practical applications of asymptotic techniques in electromagnetics. (CD-ROM included)

de Adana, Francisco Saez et al.

Artech House, ©2011 215 p. \$129.00

Five computer scientists at the University of Alcalá, Spain explain applications of asymptotic numerical techniques to analyzing real-world engineering problems. They draw on their own experience as

users and especially as developers of computer tools for analyzing problems of radiation, propagation, and scattering in the high-frequency range, or in the range where the size of the object under analysis is larger than the wavelength. Their target readers are engineers and researchers working on antenna analysis and design, and graduate students in electromagnetism, antennas, propagation, or radio communications systems. A basic knowledge of electromagnetic theory, antennas, and propagation is assumed. The accompanying video disk contains some of the programs they have developed.

TK7871 2010-038273 978-1-84821-232-9

Ultra wide band antennas.

Title main entry. Ed. by Xavier Begaud.

ISTE/Wiley, ©2011 278 p. \$125.00

The transmission of radio spread out across a wide frequency—typically 500 MHz to several GHz—has spread from military and radar to telecommunications, but because of regulatory restrictions on power, it is suitable only for short-range communication. French communications scientists discuss the analysis and design of antennas to receive such signals. They cover applications of ultra wide band (UWB) systems; radiation characteristics of antennas; representation, characterization, and modeling of UWB antennas; experimental characterization of UWB antennas; and overview of UWB antennas; and antenna-channel joint effects in UWB.

TK7872 978-1-59693-230-2

Frequency synthesizers; concept to product.

Chenakin, Alexander.

Artech House, ©2011 214 p. \$129.00

Chenakin has led the development of advanced products for a number of microwave companies. Here he offers engineers in their early years of practice a manual of well-established and recently developed techniques for designing frequency synthesizers. The idea is to bridge the gap between theory and experience, he says, and to supplement technical articles, application notes, and design recipes in the field of frequency synthesis. He covers parameters and architectures, building blocks, synthesizer construction, the design process, improving performance, and advanced functions.

TK7872 2010-008113 978-0-470-03601-3

Wireless sensor networks.

Akyildiz, Ian Fuat and Mehmet Can Vuran.
(Communications and networking)

John Wiley & Sons, ©2010 493 p.

\$110.00

Akyildiz (Georgia Institute of Technology) and Vuran (U. of Nebraska-Lincoln) offer a textbook that focuses on the most recent advances in wireless sensor networks (WSNs). The authors discuss current WSN

applications and areas that are developing, such as sensor actor networks, multimedia sensor networks, and underwater and underground applications. A sampling of topics includes: design factors, medium access control and error control, transport and application layers, time synchronization, localization, and challenges. The textbook is clearly written in a straightforward, easily understood style. It is intended for advanced students but also would be useful for researchers, system and chip designers, and other professionals in related fields.

TK7874 2010-024560 978-0-470-82594-5

Introduction to organic semiconductor heterojunctions.

Yan, Donghang et al.

John Wiley & Sons, ©2010 246 p. \$145.00

Among the organic thin film electronic devices that began to emerge in the late 20th-century were photovoltaic cells (OPV cells), organic light-emitting diodes (OLEDs), and organic field-effect transistors (OTFTs). The problem has been that “the stability and functionality of these devices need improvement”—(from the preface). Donghang Yan and Haibo Wang (both: Changchun Institute of Applied Chemistry, Chinese Academy of Sciences) were encouraged in their work with organic heterostructures by Bauxum Du (Institute of Semiconductors, Chinese Academy of Sciences), and the three collaborated to compile this reference. Filling a gap in the literature, this volume covers the fabrication of organic heterojunction films and their characterization, details of the charge injection and transport model, and the authors’ perspectives on key problems and areas that need further research.

TK7876 978-1-60807-129-6

Microwave network design using the scattering matrix.

Dobrowolski, Janusz A.

Artech House, ©2010 269 p. \$129.00

In many cases, explains Dobrowolski (microwave circuits and instrumentation, Warsaw U. of Technology), such matters as voltage, current, impedance, and admittance of a microwave or radio frequency network cannot be measured directly, but can be calculated from the reflections, or scatter, of the waves at various junctures in the system. He sets out in detail the theoretical foundations for characterizing, analyzing, and designing microwave networks using such scattering parameters. He discusses the theory of uniform waveguides, the theory of transmission lines, wave variables and the scattering matrix, signal analysis of multiport networks, mode wave variables and mixed mode scattering matrix of differential networks, noise wave variables and the scattering matrix, analyzing the noise of multiport networks, and scattering functions in the non-linear modeling of microwave devices.

TK7881 2010-010161 978-1-61520-919-4

Machine audition; principles, algorithms and systems.

Title main entry. Ed. by Wenwu Wang.

Information Science Reference, ©2011 532 p. \$180.00
Wang (U. of Surrey, the UK) has edited 19 chapters on all aspects of machine audition, written by engineers at universities throughout Europe, Canada, and the US. The chapters are written as practical overviews, reporting in detail on the author's research while also addressing background, method, and goals for the study, making the book eminently useful both to students and other researchers in the field. The material is grouped into sections on scene analysis, recognition, and modeling; signal separation, extraction and localization; transcription, mining, and information retrieval; and cognition, modeling and affective computing. Individual chapter topics include multimodal emotion recognition, automatic tagging of audio, audio source separation using sparse representations, and source separation issues and computational methods.

TK7882 978-1-4493-7986-5

Beautiful visualization.

Title main entry. Ed. by Julie Steele and Noah Iliinsky.

O'Reilly Media, Inc., ©2010 397 p. \$59.99 (pa)
This collection of twenty articles on data presentation and visualization presents a diverse discussion of the nexus of information and art in the digital medium. Beginning with an opening essay on beauty the work showcases several interesting projects and practices such as interactive visualization, Wordle, color and data graphics, New York City subway maps, flight patterns, visualizing Wikipedia, matrices and unfolding complex systems. The volume includes numerous color illustrations and code examples for parsing data and creating visualizations and access to additional online content is provided. Contributors include academics and professionals in the fields of computer science, media arts and technology.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL509 2010-031089 978-0-470-75440-5

Encyclopedia of aerospace engineering; 9v.

Title main entry. Ed. by Richard Blockley and Wei Shyy.

John Wiley & Sons, ©2010 5648 p. \$3,195.00

The president of the American Institute of Aeronautics and Astronautics and the president of the Royal Aeronautical Society (UK) offer a one-page foreword to this nine-volume reference, praising the high ambitions of the undertaking and emphasizing the value of a systematic distillation of "this globally-shared body of knowledge." The reference is designed for use as a learning tool and "possibly as a benchmark

for coursework and technical module design and accreditation" internationally; readership will include students and professionals in academia, industry, research, and government. Editors Blockley (Cranfield U., UK) and Wei Shyy (U. of Michigan), assisted by an advisory board and a long roster of subject editors, have brought together 442 articles encompassing scientific fundamentals as well as current industry practice. The contents are divided broadly as follows: fluid dynamics and aerothermodynamics (volume 1); propulsion and power (volume 2); structural technology (volume 3); materials technology (volume 4); dynamics and control (v.5); environmental impact manufacturing and operations (v.6); vehicle design (v.7); system engineering (v.8); and index and units (v.9). Within these broad themes are chapters devoted to 43 sub themes, such as heat transfer and thermophysics, airbreathing engines, rocket propulsion, aeroelasticity and aeroservoelasticity, structural health monitoring, materials for space applications, flight mechanics, radar systems, acoustics and noise, disposal and waste mitigation, vehicle configurations and performance, avionics system integration, and safety engineering and mission assurance, among others. Annual online updates to this reference are planned.

CHEMICAL TECHNOLOGY

TP156 978-2-7108-0956-2

Microemulsions and related systems; formulation, solvency, and physical properties.

Bourrel, Maurice and Robert S. Schechter.

Editions Technip, ©2010 393 p. \$224.00 (pa)

French physicist Bourrel and Schechter (chemical and petroleum engineering, U. of Texas-Austin) explain to scientists and engineers the relationship between the molecular structure of amphiphilic compounds and their ability to cause water and apolar liquids (oils) to mix and form a single-phase isotropic solution. The process shows potential for increasing the recovery of petroleum. They cover the R-ratio; aqueous and non-polar solutions containing amphiphiles; the phase behavior and properties of solutions containing amphiphiles, organic liquids, and water: micellar solutions; methods for promoting phase change; compensating changes between formulation variables; solubilization; and the thermodynamics of solubilized systems. Only authors are indexed. Originally published over 20 years ago.

TP157 2009-012816 978-1-4200-9268-4

Chemical reaction engineering and reactor technology.

Salmi, Tapio et al. (Chemical industries; v.125)

CRC Press, ©2011 615 p. \$119.95

Chemical reactors are key components in the conversion of raw materials into products. Authors

Salmi and Wärna (Abo Akademi, Finland) and Mikkola (Umea U. Sweden) discuss that role and the many factors that need to be taken into account when selecting an efficient and appropriate reactor in this reference work. They provide an overview of the concept of chemical reaction engineering. Topics include: stoichiometry and kinetics, homogeneous reactors, non-ideal reactors, catalytic two- and three-phase reactors, gas-liquid reactors, new reactor and reaction engineering, and more. The book is intended for undergraduate and more advanced students and industrial engineers. A listing of notations and abbreviations is included.

TP248 2010-036824 978-0-470-25149-2

Guidelines for process safety in bioprocess manufacturing facilities.

Title main entry. Ed. by Center for Chemical Process Safety of the American Institute of Chemical Engineers.

John Wiley & Sons, ©2011 225 p. \$99.95

The Institute created the Center in 1985, in response to chemical disasters in Mexico City and Bhopal, to develop and disseminate technical information that could be used to prevent major chemical accidents. Its major activity has been producing a series of guidelines for chemical processing in different areas, of which this is the latest. Some general process safety techniques apply to bioprocesses, but others must be adapted, and still others are unique to it. The topics here are an overview of the bioprocessing industry, bioprocessing safety management practices, identifying hazards, design considerations and unit operations, and the effects of emerging technology on bioprocessing risk management.

TP248 2010-286575 978-3-527-40789-7

Surface design; applications in bioscience and nanotechnology.

Title main entry. Ed. by Renate Forch et al.

Wiley-VCH, ©2009 511 p. \$155.00

Materials scientists and engineers, chemists, and related researchers sample some of the topics that are discussed at a generally annual seminar rotating through Mainz, Twente, and Bath since 1998. The 22 papers cover functional thin film architectures and platforms based on polymers; biointerfaces, biosensing, and molecular interactions; nanoparticles and nanocontainers; and surface and interface analysis. Tutorial reviews are also presented on coupling chemistries for modifying and functionalizing surfaces to create advanced biointerfaces, surface plasmon resonance-based biosensors, surface modification and adhesion, and modern biological sensors. Other topics include controlled block-copolymer thin-film architectures, modifying surfaces by photosensitive silanes, nanoporous thin films as highly versatile and sensitive waveguide biosensors, and quantitative lateral force microscopy.

TP363 2009-052731 978-1-60876-977-3

Combustion synthesis of advanced materials.

Khina, B. B. (Chemistry research and applications series)

Nova Science Publishers, ©2010 110 p. \$43.00 (pa)

Khina (National Academy of Sciences, Minsk, Belarus) describes basic approaches to modeling non-isothermal interaction kinetics during the combustion synthesis of advanced materials, sets out the existing controversies and apparent contradictions between different theories and between theory and experimental data, and develops criteria for a transition from traditional solid-state diffusion-controlled phase formation kinetics to a non-equilibrium fast dissolution-precipitation route. The materials are aimed at graduate students, researchers, and engineers in physics, chemistry, and materials.

TP1125 978-1-84735-556-0

Plastics and the environment.

Title main entry. Ed. by Frances Gardiner and Eleanor Garmson.

Smithers Rapra, ©2010 130 p. \$130.00 (pa)

Contributors from plastic companies, industry associations, and some academic laboratories survey best practices for environmental sustainability at every stage of developing plastic products, including conception, design, and materials selection. They cover how developments in polymer technology are driven by the need for sustainability, a medium-voltage switchgear mechanism that is insensitive to its environment, interfacial agents for polymer blends and composites based on chemically modified atactic polypropylenes, an energy efficiency index for plastic processing machines, a comparative analysis of the carbon footprint of wood and plastic-lumber railway sleepers in Brazil and Germany, perfect sorting solutions for packaging recycling, a British household plastic packaging recycling survey, and experience and perspectives in polyvinyl chloride (PVC) sustainable development.

MANUFACTURES

TS155 2010939128 978-0-7695-4286-7

Digital manufacturing & automation; proceedings; 2v.

International Conference on Digital Manufacturing & Automation (2010: ChanSha, China)

Computer Society Press, ©2010 1925 p. \$465.00 (pa)

In anticipation of a gathering in December 2010 in ChanSha, China, two big volumes contain papers accepted for the international conference on the topic announced in the title; the acronym is ICDMA 2010. It's the first of a planned annual conference sponsored by several universities and research organizations in China. From some 1700 submissions (from 10 countries and regions), 600 papers passed successfully through the review process and are

presented here. Broad themes include mechatronics, digital manufacturing, deep-sea mining, control technology and equipment automation, and intelligent control and detection technology. A sampling of topics: dynamic energy absorption of circular honeycomb under in-plane impact loading, the effect of thermal properties of building glass on cooling energy consumption of buildings, integrated manufacturing of free-form surfaces, and a network model approach for investigation of regenerator on characteristic impedance in thermoacoustic engine, to name just a few. Organization is alphabetical by title, and inexplicably there is no subject index. Each paper begins with an abstract and at least three or four keywords are identified, so assembling a keyword index would have been easy and useful. As it stands, readers will need to know the author of a paper that might interest them, or they'll need to scan the table of contents.

TS156 2010-028236 978-0-87389-792-1

ISO 9001:2008 for small and medium-sized businesses, 2d ed.

Robitaille, Denise E.

ASQ Quality Press, ©2011 132 p. \$50.00 (pa)

Robitaille (consultant, quality management systems) wrote this handbook to help small and medium-sized organizations better understand and work with the ISO 9001:2008 quality management system (QMS) standards. In her review of the standards in this second edition, the author addresses topics such as quality management principles, process approach, relationship to ISO 9004, compatibility with other management systems, terms and definitions, requirements, management commitment, customer focus, quality policy, and competence, training, and awareness.

TS160 2010-032487 978-1-4200-7945-6

The supply chain in manufacturing, distribution, and transportation; modeling, optimization, and applications.

Title main entry. Ed. by Kenneth D. Lawrence et al.

CRC Press, ©2011 306 p. \$89.95

Lawrence (management, New Jersey Institute of Technology), Klimberg (decision and system sciences, Saint Joseph's U.), and Miori (decision and system sciences, Saint Joseph's U.) present research conducted in order to provide insight on the integration of transportation, distribution, and production in the management of the supply chain. Fourteen chapters are organized into sections examining industrial and service applications of the supply chain, analytic probabilistic models of supply chain problems, and optimization models of supply chain problems.

TS171 2010-000039 978-1-61520-617-9

Handbook of research on trends in product design and development; technological and organizational perspectives.

Title main entry. Ed. by Arlindo Silva and Ricardo Simoes.

Business Science Reference, ©2011 576 p. \$265.00

Researchers and practitioners from around the world provide a snapshot of current issues, trends, and challenges on designing and developing products, considering the business and social dimensions as well as the technology. They cover design methodologies, supporting technologies, organization and process management, enhancing creativity and innovation, social sciences and environment, systems integration, and case studies. Among the topics are interdisciplinary interaction for the early stages of product and service development, tool and information-centered design process modeling, implementing rapid manufacturing systems in the jewelry industry in Brazil, virtual reality systems for industrial design applications, rediscovering design education as a social constructivist foundation for innovative design thinking, research driven by laws of product evolution, the innovation of new products with end users and customers, the influence of aging on user experience, the contribution of ergonomic analysis in product design for recycling, the transformative role of product design in Singapore's transition to a service economy, and deploying and adapting an indoor positioning system in the clinical setting.

MILITARY & NAVAL SCIENCE

U21 2009-046621 978-0-415-57595-9

Modern war and the utility of force; challenges, methods and strategy.

Title main entry. Ed. by Jan Angstrom and Isabelle Duyvesteyn.

Routledge, ©2010 286 p. \$125.00

Is military force useful outside of conventional war? This is the central question underlying this collection of papers presented by Angstrom (Swedish National Defence College, Sweden) and Duyvesteyn (history of international relations, Utrecht U., the Netherlands), which explores the utility of military force in the types of operations that Western forces have recently been involved in, variously considered peace-enforcement, state-building, counter-insurgency, humanitarian aid, and counter-terrorism. The papers included discussion of different approaches in the current conflict in Afghanistan, the US counterinsurgency experience in Iraq, peacekeeping missions in the Democratic Republic of Congo and Sierra Leone, and the role of the international private security company.

VF347 2010-020181 978-1-59114-288-1

Unmanned combat air systems; a new kind of carrier aviation.

Friedman, Norman.

Naval Institute Press, ©2010 266 p. \$52.95

This book is about how unmanned combat air systems (UCAS) currently in development will transform naval aviation, focusing on the prototype X-47B, developed by Northrop Grumman for the US Navy as the first attempt to build an unmanned equivalent to manned attack aircraft capable of intelligence, surveillance, and strike. Author Friedman, a defense analyst and historian, describes how the X-47B will be used, explains the technology behind it, and predicts how it will transform military tactics and strategy in combat. He also examines the economics of UCAS. The bulk of the book consists of an appendix, illustrated with a wealth of b&w photos, describing individual military unmanned air vehicles (UAVs) around the world, covering all large (110 lbs and above) military UAVs currently in service or advertised, and all military UAVs, including small ones, in current or recent service. Some developmental UAVs are included, as well as UAVs of historic interest, target aircraft, and mini-, micro-, and nano-UAVs currently advertised but not in service. Friedman is the author of more than 30 books.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z769 978-1-84334-591-6

Facelifts for special libraries; a practical guide to revitalising diverse physical and digital spaces.

Bassett, Dawn et al. (Chandos information professional series)

Chandos Publishing, ©2010 161 p. \$99.95 (pa)

Written by three librarians who have managed revitalization projects in special libraries, this work guides librarians and managers of small special libraries, resource centers, or information centers through every step of the renovation process. It provides advice, bulleted lists, and helpful hints on everything from building a project team through budgeting, project scope, cost savings, and project completion. The book offers a primer on interior design basics and explains how to develop a layout, and gives advice on revitalizing the digital environment. Bassett is coordinator of library services for the Canadian Grain Commission. The book is distributed in North American by Neal-Schuman.

Z1033 2010-029505 978-3-598-11793-0

Grey literature in library and information studies.

Title main entry. Ed. by Dominic J. Farace and Joachim Schöpfel.

De Gruyter Saur, ©2010 282 p. \$126.00

Though there are a number of definitions, the term grey literature is widely applied to conference proceedings, reports, and doctoral theses that are often printed in small numbers and are typically outside the control of commercial publishers. Practicing and research librarians explore producing, processing, and distributing grey literature and its uses, applications, and trends. Among specific topics are evaluation reports as a case study of how to assure the quality of grey literature, institutional grey literature in the university environment, theses and dissertations, the driving and evolving role of grey literature in high-energy physics, and blog posts and tweets as the next frontier for grey literature.

ZA3075 2009-040556 978-1-61520-797-8

Collaborative information behavior; user engagement and communication sharing.

Title main entry. Ed. by Jonathan Foster.

Information Science Reference, ©2010 281 p. \$180.00

The 13 papers in this collection investigate the behaviors, practices, and systems that enable users and organizations to collaborate during the seeking, searching, retrieval, and use of information. Researchers model the mobile phone behavior among the poor in Bangladesh, categorize collaborative network organizations, survey online community members who do not post messages on boards, and assess the value of podcast assignments at a British business school. Language and communication are examined in chapters studying collaboration between doctors and their patients, midwives and their clients, and learners and their peers.

ZA3075 2009-048639 978-1-61520-841-8

Collaborative search and communities of interest; trends in knowledge sharing and assessment.

Title main entry. Ed. by Pascal Francq.

Information Science Reference, ©2011 299 p. \$180.00

With the migration to Web 2.0 social platforms, this book, edited by Francq (founder of the Paul Otlet Institute) is all about the trends increasingly underway in social network collaboration. It is divided into technical and applications chapters, with the former touching on the development of collaborative search tools using techniques like genetic algorithms, semantic analysis, P2P coordination, and collection information filtering. The applications section covers subjects as broad as the trend toward microblogging and Twitter in journalism, e-collaboration in new product design, as well as social software models. Both technical and social/psychological subjects are treated, making it appropriate for the serious general reader or for use as a textbook.

ZA4065 2010-031944 978-0-8389-9926-4

Web research in academic libraries.

Title main entry. Ed. by Rebecca Sullivan et al. (CLIP note; #41)

Assoc. of College & Research Lib., ©2010 202 p. \$48.00 (pa)

Drawing on a survey of 118 academic libraries and their search sites, this work looks at the ways in which academic libraries have incorporated web search strategies into their information instruction programs, and compiles descriptions, sample documents, and actual instructions from about 40

college websites teaching students how to use search strategies. Formatting searches, using search engines and directories, and various search strategies are some of the tasks covered. Other areas examined are evaluation and selection of websites, and web searching in each college's curriculum. A copy of the original survey is included. The book is illustrated with b&w screen shots of library websites, and will be useful as a reference for libraries and as a text for library and information courses. Sullivan is academic technology librarian at Luther College. ❖

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