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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 69, Number 1 (2015)
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SciTech News



On the Cover

The Boeing Model 307 Stratoliner, was the first commercial airliner to offer a pressurized fuselage for improved customer comfort. Boeing developed the 307 at the same time the first versions of the B-17 were built for the United State Army Air Corps in the late 1930s and the B-17 wing design and initial tail design were used on the 307. After a fatal accident in testing the aircraft, the 307's tail was increased in size to cure the cause of the crash. The 307 in the picture is in the livery of Pan American Airways, one of two major operators of the type (Trans World Airways (TWA) was the other); in the background is iconic Mount Rainier in Washington state. After the war, upgraded designs by both Boeing and their competitors, Douglas and Lockheed in particular, meant the 307 was obsolescent and Boeing built a larger pressurized transport, the 377 Stratocruiser, to compete with the Douglas DC-6s and DC-7s and the Lockheed Constellation family. Only one 307 survives today at the Smithsonian Institution's Museum near Dulles International Airport near Washington D.C.

Credit: The Boeing Company Historical Archives, special thanks to Mary Whittaker

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Editor: Lynn W. Enquist, *Princeton University*

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Complimentary online access to the first volume will be available until September 2015.

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- *The Placenta as a Barrier to Viral Infections*, Elizabeth Delorme-Axford, Yoel Sadovsky, Carolyn B. Coyne
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"IEEE is the umbrella that allows us all to stay current with technology trends."

Dr. Mathukumalli Vidyasagar
Head, Bioengineering Dept.
University of Texas, Dallas



From the Editor

Jeremy Cusker



I really enjoy working with new engineering students. Best of all is the work I do with engineering project teams: These are groups that include Cornell's Formula SAE car team, the Design-Build-Fly UAV team or with the sustainable building team. These tend to be a self-selected group of some of the most motivated, enthusiastic students: They are engineering students who genuinely enjoy engineering, as opposed to those who simply have a head for figures and were told it was a solid career path.

At the same time, I have to say that while we are regularly told that this current generation of students have phenomenal technological awareness--that they were 'born digital'--I have found I am able to astound many of them with what to me seem like some very basic technical tricks.

Try telling a group of new undergraduates that Ctrl+F enables them to search for text within a page. Or that enclosing multiple search terms in quotation marks will yield better hits than just putting in terms by themselves. I guarantee you that perhaps half the room will have their minds blown: That this will be genuinely new, life-changing information to them.

Likewise, when I ask new students a question such as, "When a database--or Google--tells you that its search results are Relevance-ranked, what does that actually mean? How does such a ranking actually get compiled?" I find many of them simply had never thought about it before. Teaching students to ask how something works rather than to assume it 'just does' is always a worthwhile endeavor.

What have you been doing lately?

SciTech News wants to know! Please send us information about your awards, promotions, professional publications and presentations or other recognition. We'll publish your activities in *SciTech News*, bringing your news of our members' accomplishments to the wider SLA and library communities.

Send such information to Jeremy Cusker, jcusker4031@gmail.com by May 1 for publication in the next issue of *Sci-Tech News*.

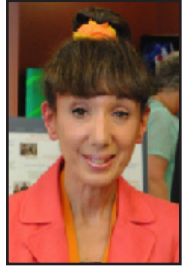
Do you have a research project?

SciTech News is interested in publishing refereed research articles on library science topics. If you would like to submit such an article for consideration for publication in *SciTech News*, please contact the editors for details on formatting and creating an anonymized manuscript for referee review.

News from the Science-Technology Division

Science-Technology Division Sheila Rosenthal, 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.'



Dear SciTech News Subscribers,

As the newly appointed Chair of the Science-Technology Division, I will be travelling to Baltimore to attend the 2015 Leadership Summit. Last year the Summit was in Memphis, TN and as Chair-Elect it was my very first experience attending. It was so fortunate for me that our Division had decided to elect a program planner to work with me on planning the 2015 programs for the Boston Conference. Our conference planner was Beth Thomsett-Scott, who did an amazing job last year and has agreed to be our conference planner again for the 2016 conference in Philadelphia.

The Summit was very exciting for me last year and in addition to the 2015 Annual Conference Planning Meeting (which was the most important one to participate in for our program planning) I wanted to try to attend all of the meetings if possible, which included the SLA Board Meeting, Opening Keynote, all the sessions, and especially the Division Cabinet Meeting and the Joint Cabinet Meeting. The 2015 Annual Conference Planning meeting was the most hectic and exciting. To me it looked comparable to the New York Stock Exchange on Wall Street. We met in a large room with lots of tables set up for each Division to meet and discuss our respective programs. Then the Summit organizers set up what they called "speed dating" and as in the game of "musical chairs" at the sound of the prompt, participants would move to the next chair and talk to the next program planner to share their Divisions ideas and gather suggestions for co-sponsorship from the other program planners. This process continued until everyone had spoken to everyone else participating in the "speed dating." They had note boards up all around the room with tracks and trends and we put our

ideas under the relevant tracks. A week or so after the Summit a spread sheet of proposed sessions was created from which we could add, subtract, and modify our sessions as well as find more co-sponsors. Beth participated in the "speed dating" and did a fantastic job! In addition to being our Conference Planner, Beth is also our newly elected treasurer.

I came to the Summit last year with the following three prospective programs in mind and I am delighted to say that they have come to fruition and will all be presented on Tuesday, June 16th, 2015:

Revolutionize Library Management: Best Practices, Tuesday, June 16th 7:30 am - 9:30 am

The most vital requirement for special librarians is to support their organizations' overall missions and goals. Speaking from their own personal experiences, these information professionals will cover best practices for measuring and documenting the tangible value of the information services they provide for their respective corporate, medical, scientific and/or technical institutions. This panel discussion includes: best practices in libraries; an ISO Standard for assessing the impact of libraries; research data analysis; outsourcing; field testing; systems thinking; information technology; partnerships and teaming. Audience participation is welcomed and encouraged.

Speakers: Sue Henczel, Sara Thompson, Valerie Ryder, Vicki Valleroy, Joyce Fedeczko, Deborah Schwarz, Dr. Nalini Mahajan, and Betty Edwards

This panel discussion topic originated from the book, "Best Practices for Corporate Libraries". Edited by Sigrid Kelsey and Marjorie Porter, copyright March 2011 and pub-

lished by Libraries Unlimited.

I wrote a chapter within this book and got to know several of the other authors of this book's chapters when we did a panel discussion about this book at the 2012 SLA Annual Conference in Chicago for the Petroleum and Energy Resources Division (DPER). The panel discussion in Chicago had a different emphasis, talking more about the writing aspect of the chapters rather than the focus we



have for Boston which is on the actual "Best Practices". Many of the current panel members have expressed an interest in creating a second edition of the "Best Practices" book and hope that the Boston panel might be instrumental in making this suggestion a reality. I spoke to one of the book's editors, Sigrid Kelsey about this and she thinks it is a "very tempting" idea. I have asked Carolyn Sosnowski who is responsible for the virtual conference webinar series to consider reviewing this program as well as some of the other SciTech Boston programs for webinar format. She told me that all 3 of my initiated programs would likely be good candidates.

Demystifying the information audit: from knowledge management (KM) to enterprise information management (EIM), Tuesday, June 16th 9:45 am - 10:45 am

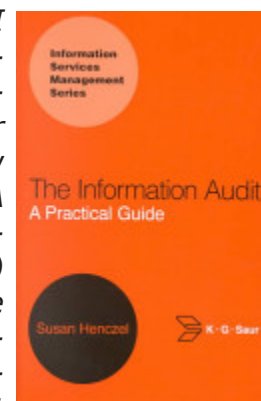
In recent years, the information audit (IA) has evolved from a library-focused activity to one that provides enterprise-wide information management solutions to meet business challenges and management responsibilities. As a tool used to address operational and strategic information management challenges it has begun to engage managers, business analysts and policy makers. An information audit reveals the current information environment by establishing information processes and policies; identifying gaps that impede effective enterprise information management; and more. Sue Henczel and Graham Robertson

In 2012, I became interested in conducting an "Information Audit" for the Software Engineering Institute Library that I have managed at Carnegie Mellon University, since 2004. While researching this topic, I discovered the following book:

The Information Audit: A Practical Guide
Susan Henczel
K.G. Saur, Jan 1, 2001 - Computers - 272 pages

The Information Audit is a process by which an organization investigates its information requirements and matches them against the information resources and services that are currently provided. Using a seven stage model this book will take the information professional through the process of an audit.

After reading this book I became interested in Susan Henczel's work and realized she was a member of SLA. She and I are now both members of the SLA KIIE (International Information Exchange Caucus) and when I attended one of their meetings during the SLA 2014 conference in Vancouver we met



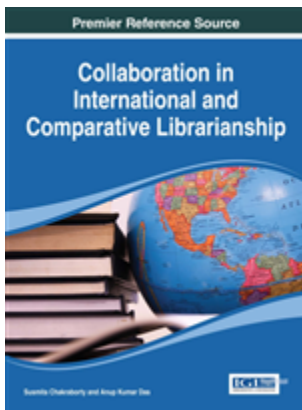
and I asked her if she would be interested in developing a program on the "Information Audit" for one of the 2015 SLA SciTech programs. Much to my delight she agreed and told me that she had a colleague, Graham Robertson, who would be interested in presenting with her. When I later found out that this session rated the distinction of an SLA Master's Class, I was even more delighted! This was all a very lucky set of circumstances that brought this program together.

Transforming International Science and Technology Librarianship, Tuesday, June 16th 2:00 pm - 3:30 pm

Emerging technologies have a universal impact on libraries and information centers and this panel of international information professionals will be addressing this impact by sharing experiences relating to their respec-

tive institutions. The following countries will be represented: Australia, India, Italy, Saudi Arabia, The Netherlands, United Kingdom, and the United States. Subject areas will include: impact of emerging technologies on library collections and services; strategic implementation of knowledge and information management initiatives in Australia and the United Kingdom; information audit as a management process; recommendations on international programs and activities for librarians and information managers; library metrics and the importance of international consistency; publications authored within specific areas of interest. Audience participation is welcomed and encouraged. Co-host: Asian Chapter, DBIO, KIIE
Jay Bhatt, Gimena Campos Cervera, Dr. Susmita Chakraborty, Andrew Clark, Susan Henczel, Dr. Parveen Kumar (P.K.) Jain, Geeta Paliwal, Rindra M. Ramli, Dennie Heye

From my serving as Chair of the SciTech Awards Committee from 2007 through 2013 I became very interested in ways to make attendance at SLA Annual Conferences more feasible for SLA's international members. This program came about as a result of this goal along with my membership in the SLA KIIE and my serving as the SciTech International Relations Committee Chair. International members' participation in SLA



programs and panel discussions provides initial justification for their employers to support their attendance at this international conference. I had authored the following chapter, about SLA, within the book, "Collaboration in International and Comparative Librarianship": Chapter

7: The Role of the Special Libraries Association in Promoting Library Professionals on a Global Scale

I believe that the discussion of the topics listed in the description of this program along with the panel members will provide

important information for all of our audience participants both nationally and internationally

We are delighted to have Mary Frances Lembo and James Manasco creating, organizing and presenting our Science & Engineering Program again this year and this time they are providing a session on Data Visualization. In addition to the new topic there have been two additional changes to their program: It is now the advanced Science & Engineering 201 session with an additional presenter joining their team, Barbara Wetzel.

What is Data Visualization? A Science & Engineering 201 Session, Sunday, June 14th, 1:30-3:00 pm

Mary Frances Lembo, Barbara Wetzel and James Manasco will provide an introductory session on data visualization. This session will provide a definition of the concept of data visualization, note some of the major players in the field, and discuss how data visualization can be used to enhance search results. Co-host: DTRAN, DPER.

Moderated by Sheila Rosenthal with speakers Mary Frances Lembo, Barbara Wetzel and James E. Manasco

The rest of the lineup of programs for the 2015 Boston Conference includes two of our major networking/socializing events New Members Welcome Dinner and Member Meet up and our DST Awards Reception and Presentations. Here are the details for these two programs:

New Members' Welcome Dinner and Member Meet up, Saturday, June 13, 6:00-8:00 pm

All new DST members are invited to join the DST Officers for a welcome dinner at our expense. Please RSVP. Any DST member is also invited at their own cost. Join us for food, fun, and networking. Gain conference tips and discover the ways you can volunteer for the Division. Make new friends and enjoy fantastic foods. Moderator: Anna Ren, Sci-Tech Division Membership Committee Chair. Please RSVP to Anna at annawu@northwestern.edu.

Place: TBA

DST Awards Reception and Presentations, Sunday August 14, 7:00-9:00 pm

Come and celebrate with us as we present the Science and Technology Division's awards. Congratulate the award winners, meet your colleagues, and partake in delicious appetizers and desserts.

Moderators: Sheila Rosenthal and Janet Hughes

There will also be the following "lightning round" talk format for Data Visualization:

Revolutionize Your Data – Tools for Visualization (CSRT), Monday June 15th, 12:00-1:30 pm

In this 90 minute session, attendees will experience a variety of data visualization tools that will maximize the impact of their research and information display. This will be in lightning talk format. Speakers will be corporate/special and academic librarians as well as faculty and researchers.

Co-host: PAM, DGI, DIT

Once again this year we will team with all of the sciences divisions for the ever popular All Sciences Poster Session and Reception as described below:

All Sciences Poster Session and Reception, Monday June 15th, 5:00–7:00 pm

Presented By Biomedical & Life Sciences Division, Chemistry Division, Engineering Division, Pharmaceutical & Health Technology Division, Physics-Astronomy-Mathematics Division, Science & Technology Division.

Cohost: PAM, DCHE, DBIO, DPHT, DFAN DENG

We will close the 2015 Boston Conference by co-hosting the tour described below with the Engineering Division:

Engineering Division Tour (DST Co-host), Wednesday, June 17, 7:30 am-3:00 pm, limit 25. Cost \$25.

FM Global Facility Tour. Fires, explosions, hurricane-force winds, flying debris—it's all in a day's work at the FM Global Research

Campus. Equipped with the most advanced technology and designed with property owners, product manufacturers and continuously evolving industry trends in mind, our distinguished scientists and loss-prevention engineers conduct research in four main laboratories. On this tour, visitors will view the Fire Technology and Natural Hazards Laboratories and view a live dust explosion. Bus transportation to the 1,600-acre FM Global Research Campus in West Glocester, RI, is provided, along with lunch.

If you would like to review all of the 2015 Boston Conference Programs they are listed at the following URL:

<http://scitech.sla.org/conferences-and-events/conference-programming/>

The list of Officers for the Science-Technology Division are as follows:

- **Chair:** Sheila Rosenthal
- **Chair-Elect / 2016 Programming Chair:** Bill Jacobs (newly elected)
- **Past Chair:** Nevenka Zdravkovska
- **Treasurer / 2016 Programming co-Chair:** Beth Thomsett-Scott (newly elected)
- **Secretary:** Anna Ren

One of my goals for 2015 like most of my predecessors is to increase membership for our Division. In support of that goal, our Division is once again providing the following awards for travel to the SLA Conference and to encourage participation in the Division:

- S. Kirk Cabeen Travel Stipend Award
- Bonnie Hilditch International Librarian Award
- Ann Koopman Sci-Tech Division Achievement Award
- Diane K. Foster International Student Travel Award

Our newly elected Strategic Planning Chair, Susan Wainscott is a STEM (Science, Technology, Engineering and Mathematics) Librarian who has already recruited several new Strategic Planning Committee Members which included one new member from India. They have a total of nine members and held their first (virtual) meeting on November 5,

2014, distributed the minutes to this meeting before the end of November and have saved all meeting documentation in a Google Docs file. Sue is already working on setting up a Strategic Planning meeting session for the 2016 Philadelphia conference.

Roger Beckman had been our Division Archivist for many years and has now retired. If you are interested in working with our Division Archives which contain a great deal

of historical information, I encourage you to apply for the position of Science-Technology Division Archivist by sending email to me at slr@sei.cmu.edu

One of the features of my column for the next issue of SciTech News will be to provide an update on the 2015 SLA Leadership Summit in Baltimore.

Science-Technology Division New Members

Submitted by Anna Ren, Membership Committee Chair, Science-Technology Division

The Science-Technology Division welcomes its new members:

Dennis Behreandt
Appleton, WI
USA

Stacy Bruss
Fairfax, VA
USA

Frances Clarke
London
UK

Marie Fraties-Block
Wyandotte, MI
USA

Daniel Dotson
Columbus, OH
USA

Robyn Ertwine
Clarksville, MD
USA

Nabonita Guha
Bangalore
India

Elizabeth Hammes
Arlington, VA
USA

Audrey Hopkins
Boston, MA
USA

Annette Main
Tombal, TX
USA

Stacey Mantooth
Tallahassee, FL
USA

Britt Mueller
La Mesa, CA
USA

Jana Purmalis
Vancouver, BC
CA

Louise Ian de los Reyes
Taguig City, Metro Manila
Philippines

Paul Rubio
Oak Park, IL
USA

Jeannie Tilson
Chalk River, Ontario
CA

UCAR
Boulder, CO
USA

Elizabeth Winiarz
North Dartmouth, MA
USA

News from the Chemistry Division

Chemistry Division

Ye Li, 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.



Greetings from DCHE Chair 2015

Greetings to all Chemistry Division colleagues! I am honored and delighted to serve as the Chair 2015 of the Chemistry Division. My past five years with the division have been a great learning experience and I look forward to giving back more to our division. I would like to focus on developing new strategies to enhance the professional communication and networking among chemical information professionals from academia, corporate, government agencies, and all other sectors across the world. I hope the program we are planning for the SLA 2015 Annual Conference can create innovative collaborations among members from different sectors. Besides the conference, the board plans to conduct a division-wide membership survey and use the results to inform our strategic planning. We will also revise our practice guidelines with the goal of improving daily communication between the board and our members. In addition, to ensure the continuity of our work, we will explore the possibility to start a digital archive of our division documentation. As always, the board welcomes volunteers to help with all the activities. I am confident that this year we will establish a solid foundation to move forward with the board leadership and, more importantly, contributions from you, every DCHE members. Please send your comments and suggestions to me or other board members. The [list of our current board members and their contact information](#) can be accessed on our division website.

Here, I would like to express my heartiest thanks to our exiting board members: **Susan Makar**, our past-chair, **Yan He**, our Treasurer for four years, **Claire Stokes**, our Award Chair, and **Linda Maddux**, our long time Webmaster. We really appreciate your hard work and contributions to the division.

I welcome new volunteers to the board and those board members who are taking new roles this year.

Valerie Tucci, our Chair 2014, will move on to Past Chair and lead the Nominating Committee. **Luti Salisbury** is our Chair-elect and is starting plan for the 2016 conference together with our Secretary, **Linda Galloway**. **Mindy Peters** is our new treasurer from 2015-2016. We also have **Dawn French** as our new Membership Chair and **Tina Qin** as our new Awards Chair. **Amanda Schoen** is our new Webmaster and is co-planning the 2015 conference together with me.

Boston Conference

Thanks to all of you who have been contributing to the Boston conference planning. Our exciting program for SLA 2015 at Boston is coming together nicely and we are working on the final details now. In the next few months, please check our division website at <http://chemistry.sla.org/> or the SLA main conference scheduler, which will open online in early February, for the latest updates of the program. As we reported in the earlier issue of SciTech News, the highlight this year is the one-day bi-society symposium on June 15 themed on laboratory safety information, co-sponsored by DCHE and the Chemical Information Division (CINF) of the American Chemical Society (ACS). Join us to learn a variety of resources and strategies to take actions on the front of lab safety as information professionals and make your organization a safer place for laboratory learning and research. The symposium will also provide a unique opportunity for members of SLA-DCHE and ACS-CINF to mingle and discuss chemical information services and researches in general. Please see below for details of all other sessions, such as our Master Class

session: Science in 3D printing and our patent session highlighting management of patent information. Our unique CE Course, Chemistry for the Non-Chemist Librarian, is coming back too.

Friday, June 12, 2015

Pre-conference workshop: Chemistry for the Non-Chemist Librarian

To be hosted at the Massachusetts Institute of Technology (many thanks to Erja Kajosalu of MIT Libraries for her assistance). Registrations will be handled outside of the conference system. More details to be announced.

Saturday, June 13, 2015

8:00 a.m. – 12:00 p.m.

CE Course: Chemical Information Sources, Requests, and Reference

This hands-on course introduces learners to the types of questions that chemical researchers ask and reference sources that can be used to answer them. It will provide an overview of the structure of the chemical literature, types of reference sources in the chemical sciences, unique access points for chemical information, and strategies for an effective search. Informal lectures, interspersed with hands-on reference questions, will compare and describe the major chemical information resources.

1:00 p.m. – 5:00 p.m.

CE Course: Extreme Structure Searching: Organics, Organometallics, Polymers, and Markush

This course will introduce participants to specialized search techniques for small molecules in the chemical literature: 1) profiling organic, organometallic and catalytic substances by substructure, 2) applying structure and substructure search techniques to polymer searching, and 3) using basic substructure and Markush search strategies for patent information retrieval. Participants will learn advanced organic substructure search techniques and recommendations of where, when, and how to use them. This will be followed by techniques of locating organometallics and polymers using the substructure search techniques taught. Finally, the participants will examine the application

of substructure techniques to patent searching, including learning the basics of Markush searching.

5:30 p.m. – 6:30 p.m.

DCHE Board Meeting

DCHE board members will discuss the progresses of division business and report on their areas of responsibility, and plan for the next steps.

7:00 p.m. – 9:00 p.m.

DCHE Newcomers' Dinner/Members' No-host Dinner

New member to SLA-DCHE? First time attendee at SLA Annual? The Chemistry Division would like to invite our new division members and first time attendees to a hosted dinner Saturday night before the start of SLA Annual. Meet, interact, and network with the current members of the division and get to know more about DCHE. This is a great opportunity to find SLA veterans to help guide first time attendees through the hustle and bustle of the conference. Please RSVP by Thursday, April 30, 2015 at: <http://bit.ly/dchedinner2015>.

Sunday, June 14, 2015

1:30 p.m. – 3:00 p.m.

DCHE Business Meeting and Vendor Roundtable

This program will begin with a brief business meeting of the Chemistry Division. DCHE board members will report division business and future plans. We will also present the Marion E. Sparks Award to the 2015 winner. The rest of the session will focus on the major chemistry vendors and publishers, representatives of which will inform participants of new developments of importance from each of their perspectives.

3:30 p.m. – 5:00 p.m.

The next great invention: how to help your organization make it a reality

Are you overwhelmed with the options available in the patent searching world? There is a sea of products to use, but how do you as an information professional fish out the right one for your organization? What are some of the more helpful tips for using pat-

ent software to help your organization make that invention a reality? What are the more advanced features that will enable your organization to do a thorough search? Come learn a broader perspective of the important role that patents play in chemistry and chemical engineering-related activities such as product development, IP management, and entrepreneurship. Find answers at this crescendo session.

Monday, June 15, 2015

Bi-society Symposium on Laboratory Safety Information

Co-hosted by Division of Chemistry of Special Library Association (SLA-DCHE) and Chemical Information Division of American Chemical Society (ACS- CINF)

7:30 a.m. – 9:30 a.m.

DCHE Breakfast and Academic / Corporate Roundtable on Laboratory Safety Information and Practices

Laboratory safety has been vital to the success of research in both academia and industry. This breakfast / roundtable session will feature updates from vendors, publishers and agencies who provide chemical safety information as a part of their products, followed by roundtable discussions on current challenges and issues in supporting increasing demands on safety information in research laboratories.

10:00 a.m. – 11:30 a.m.

Exploring Safety Information Literacy: Towards a Safer Research Environment

A strong, positive culture of laboratory safety is critical to supporting and advancing research. In academia, the frequent turnover of young students doing bench research makes communication, training, and support essential. Recent laboratory incidents in chemistry labs have catalyzed researchers, educators, safety officers, and librarians to assess what actions are needed to ensure that bench researchers are well-educated and prepared to keep labs safe and productive. A librarian will provide an overview of key resources, search strategies, and best practices for helping users learn how to find lab safety information. We will also hear from

a safety officer and an educator about their needs for safety information in teaching. There will be a panel discussion exploring how stakeholders - faculty and instructors, bench researchers, safety officers, government agencies, librarians, and information providers - can collaborate to create a safer lab research environment and foster a robust and positive safety culture.

12:00 p.m. – 2:00 p.m.

Enriching research management systems with point-of-need information delivery: case studies with laboratory safety information

Research management systems such as electronic lab notebooks are revolutionizing the work of research labs across the industrial, government and academic sectors. To support awareness of safety concerns for particular materials and procedures that researchers use in labs, there is a recognized need to integrate chemical data and safety information. Providing access to available chemical hazard handling and management information as researchers are planning experiments is a goal of several management and information systems.

5:30 p.m. – 7:00 p.m.

All Sciences Poster Session

Co-hosting Unit: Science-Technology Division (Lead unit), Physics Astronomy and Mathematics Division, Chemistry Division, Biomedical & Life Sciences Division, Engineering Division, Food, Agriculture & Nutrition Division, Pharmaceutical & Health Technology Division

Tuesday, June 16, 2015

11:00 a.m. - 12:00 p.m.

How-to select best databases for your community: Proven methods for comparison

Research-intensive communities require more than one database to ensure adequate indexing of literature. Comparison of databases is necessary to select the most comprehensive or the best database for researchers. This presentation will review the criteria used to evaluate databases for subscription decisions. Comparison methods

such as citation analysis, sample searching across multiple databases for recall and/or precision will be covered for determining database coverage in a specific discipline. The speaker will describe steps, findings, and practice implications of using citation analysis methods to compare databases.

Co-hosting Unit: Engineering Division(Lead unit), Chemistry Division

2:00 p.m. – 3:30 p.m.

Science of 3D Printing (Master Class session)

Advances in 3D printing technology and materials have enabled many new applications in 3D modeling, prototyping and manufacturing in fields including engineering, biomedicine, and chemicals/pharmaceuticals. From perspectives of library-based 3D printing services and a visualization software developer, the panel will introduce principles of 3D printing technologies and associated material science; discuss applications and potential of 3D printing for visualization in research, STEM education, and industry; and provide insights on 3D printing service operations, including service models, opportunities, community impacts and partnerships.

Session Co-sponsored by: Chemistry Division - Material Research & Manufacturing Section (Lead unit), Biomedical & Life Sciences Division, Engineering Division, Food,

Agriculture & Nutrition Division, Pharmaceutical & Health Technology Division, Science-Technology Division, Information Technology Division

Please send any questions, comments or suggestions about the conference program to me. We will do our best to make the conference a fun and productive experience for you.

Last, I would like to thank all DCHE board members for your willingness to serve and all DCHE members for participating in the division activities. I look forward to meeting you in person at Boston in June. And I invite you to send your suggestions to me directly or our board members. Let us move our division forward together in 2015.

Ye Li, DCHE Chair
liye@umich.edu

DCHE Membership Updates

Submitted by Dawn French, DCHE Membership Chair 2015

At SLA Leadership Summit in January, there were informative sessions on Membership Recruitment & Retention along with a session on the Member Preferences Task Force Summary Report. The LMD Division had a strategy session where they talked about how

they're profiling their members. All of these sessions will be helpful in conducting our assessment of DCHE's membership. Thank you to Rebecca Hamburgess and Bette Finn who have agreed to help in this endeavor.

DCHE Welcomes New Members

(Joining dates between November 2014 - January 2015)

Joanna Thielen
Ann Arbor, MI

Jerry O'Connor-Fix
Waters Corp

Materials Research & Manufacturing Section New Members

Submitted by Bette Finn, Materials Research & Manufacturing Section

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

David Dunaway
Baton Rouge, LA
USA

Dee Magnoni
Los Alamos, NM
USA

Marie Fraties-Block
Wyandotte, MI
USA

Call for Nominations and Applications

SPARKS AWARD for PROFESSIONAL DEVELOPMENT

Travel stipend to attend the 2015 SLA Annual Conference, Boston MA

Application Deadline: March 13, 2015

The **Chemistry Division** of the Special Libraries Association (SLA) is sponsoring a student/new member travel award to defray the costs of attending the 2015 SLA Annual Conference June 14-16 in Boston, MA. The award is intended to encourage the professional development of student or new members of the Chemistry Division and encourage their participation in Chemistry Division activities.

TRAVEL AWARD:

\$1,500 stipend to attend the 2015 SLA Annual Conference. The winner also receives an award certificate at the Annual Conference during the Chemistry Division Business Meeting.

ELIGIBILITY:

All student members of the Chemistry Division and all new members of the Chemistry Division (individuals who have joined since January 2014) are eligible. **All applicants must have joined the Chemistry Division by March 1, 2015.** See below for information on joining SLA and the Chemistry Division.

Individuals who accept a travel award or stipend for the annual conference from any other SLA entity are not eligible for the Marion E. Sparks Award for Professional Development. Travel funds provided by your employer, your school (for students), or any other non-SLA affiliated group do not affect your eligibility.

APPLICATION PROCEDURE:

Please submit the following:

- A brief essay that: a) articulates your objectives for professional development; and b) indicates what you hope to gain from attending the SLA Annual Conference. Maximum length: 2 pages.
- Resume
- Names of two references
- Brief budget (expected expenses for registration, airfare, lodging, food and/or continuing education course).

DEADLINE:

All applications must be received by midnight on

March 13, 2015. The winner will be notified by March 27, 2015. Essays will be judged and the winner selected by a panel of SLA Chemistry Division members.

SUBMIT APPLICATION VIA EMAIL TO:

Tina Qin (qinna@msu.edu)
Michigan State University Libraries
366 W. Circle Dr. W441,
East Lansing, MI 48824

Want to join the Chemistry Division of SLA?

Not a member of SLA? Use this link to join SLA: <http://www.sla.org/access-membership/join-sla/>

When you join SLA, you can also join one division for free, additional divisions are \$20/year.

Already an SLA member? To join the Chemistry Division either: 1) Login using your membership Username and Password and download the SLA Change/Add Units form: <http://www.sla.org/access-membership/> Fax or mail the form to SLA. Or 2) Call 1-703-647-4936 and pay with a credit card.

HISTORY:

The award is named to honor Marion E. Sparks, a chemistry librarian at the University of Illinois from 1913 until her death in 1929. Ms. Sparks contributed a great deal to the field of chemical information, her achievements include teaching courses on chemical information, and authoring and publishing what is argued to be the first book to formally address chemical literature and library instruction.

The Chemistry Division Web Site <http://chemistry.sla.org/about/awards/sparks-award/> includes a listing of previous winners.



News from the Engineering Division

Engineering Division

Sara Davis, 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.

Happy New Year and welcome to 2015! As I start my year as your Division Chair, I have to pause a moment and say Thank You to all of those who served our Division in any volunteer capacity in 2014. Thank YOU! Without each of you, we could not have had such a successful year. My deepest thanks goes to Andy Shimp, our now, Division Past Chair. He did a lot of the hard work that keeps our Division running smoothly. He definitely has made my year easier right from the start. And he is not done working for the Division yet...smile! He'll be seeking those of you who would like to move into Division leadership as he serves as our Nominating Chair. Interested in helping the Division run smoothly, please contact Andy.

So, have you registered to attend the Annual Conference in Boston yet? Registration and housing are open, so please go and register for both the hotel and a hotel to stay in while in Boston. I look forward to seeing all of you there. And while you are there, here are the program sessions that you can enjoy that our Program Planner, Penny Sympton has put together for us. Mark your calendars now for a GREAT conference!

Engineering Division Board Meeting

Description: Engineering Division elected officers and committee chairs report on their areas of responsibility and discuss business. All division members are welcome to attend.
Time: Saturday, June 13, 2015, 5-6:30 p.m.

Engineering Division No-Host Dinner

Description: Welcome Engineering Division members to our FIRST ever no host dinner at SLA 2015! Join fellow early arrivals for a no-host (Dutch treat) dinner in Boston. Come meet other Division members, catch up on shop talk, enjoy great food at a local Boston restaurant and relax together before

the Boston conference kicks into high gear.
Time: Saturday, June 13, 2015, 7-9 p.m.

NASA Spinoffs: To Space and Back

Description: NASA Spinoffs are technologies, originally developed to meet NASA mission needs, that has been transferred to the public and now provide benefits as commercial products or services. Listen as a panel discuss how NASA Spinoffs enhance many aspects of daily life, including health and medicine, transportation, public safety, consumer goods, energy and environment, information technology, and industrial productivity. Learn how NASA technology has been successfully transferred to several companies.

Time: Sunday, June 14, 2015, 3:30-5 p.m.
Lead Unit: Aerospace Section

Engineering Division Business Meeting and Luncheon (Ticketed Event)

Description: Members of the Engineering Division and other interested parties are invited to join Chair Sara Davis and the Division's officers for a review of events over the past year and plans for the future. Award recipients and sponsors will also be honored.

Time: Monday, June 15, 2015, 12-1:30 p.m.

All Sciences Poster Session & Reception

Description: This event highlights multiple themes representing connections, collaboration, and strategy in the sciences and beyond, with support from multiple divisions. Join your colleagues for food, drink, and networking, and learn new ideas to take back to your library.

Time: Monday, June 15, 2015, 5:30-7 p.m.
Lead Unit: Sci-Tech
Division Co-sponsors: Engineering

Standards Development and Update

Description: Ask questions and provide feedback while Standards Development Organi-

zations (SDOs) are all in the same room! Meet representatives from many SDOs; learn about their latest and greatest innovations. New for 2015, learning how standards are developed. Come early, grab a seat...this session fills up fast!

Time: Tuesday, June 16, 2015, 7:30-9:30 a.m.

Lead Unit: Engineering

Division Co-sponsors: Petroleum and Energy Resources, Transportation

Hot Topics in Architecture & Building Design: ABCD Section Round Table

Description: Network with other architecture and building design information professionals to discuss current topics in the field.

Time: Tuesday, June 16, 2015, 9:45-10:45 a.m.

Lead Unit: Architecture, Building Engineering, Construction & Design Section

How-to Select the Best Databases for Your Community: Proven Methods for Comparison

Description: Research intensive communities require more than one database to ensure adequate indexing of literature. Comparison of databases is necessary to select the most comprehensive or the best database for researchers. This presentation will review literature on the criteria used to evaluate databases for subscription decisions. In addition, comparison methods such as citation analysis, sample searching across multiple databases for recall and/or precision etc. will be covered for determining database coverage in a specific discipline. Our speaker will describe steps, findings, and practice implications of her current research project using citation analysis methods to compare databases.

Time: Tuesday, June 16, 2015, 11 a.m. - 12 p.m.

Nanotechnology: What's the Big Deal

Description: Listen as Dr. Brian Wardle, Associate Professor of Aeronautics and Astronautics at MIT, discusses what nanotechnology is and how it's being applied to engineered materials and structures. Reference will be made to efforts over the past decade in us-

ing nanoscale materials to enhance performance of advanced aerospace materials and their structures through the industry.

Time: Tuesday, June 16, 2015, 2-3:30 p.m.

FM Global Facility Tour (ticketed event)

Description: Fires, explosions, hurricane-force winds, flying debris—it's all in a day's work at the FM Global Research Campus. Equipped with the most advanced technology and designed with property owners, product manufacturers and continuously evolving industry trends in mind, our distinguished scientists and loss-prevention engineers conduct research in four main laboratories. On this tour, visitors will view the Fire Technology and Natural Hazards Laboratories and view a live dust explosion. Bus transportation to the 1,600-acre FM Global Research Campus in West Glocester, RI, is provided, along with continental breakfast and lunch.

Time: Wednesday, June 17, 2015, 7:30 a.m. - 3:30 p.m.

Lead Unit: Engineering

Division Co-sponsors: Sci-Tech

Below is information on the programs that we've agreed to co-sponsor. Additional programs to consider for attendance and learning.

Green Building Standards

This session will familiarize attendees with Green Building standards such as LEED, GreenGlobes, and EnergyStar and provide examples of their application in libraries.

Time: Sunday, June 14th, 2015, 11:45 a.m. - 1:15 p.m.

SharePoint, Metadata and Taxonomy: CRESCENDO session

SharePoint's architecture has built-in components for metadata and auto-categorization, and it is increasingly being used as a content management platform. Panelists will discuss how these components work, when the built-in components are the best choice, when an alternative might be a better option, and how to connect SharePoint to other institutional systems. As a crescendo session, our first panelist will discuss SharePoint and tax-

onomy basics, our next panelist will present a case study of how taxonomy was implemented at his site, and our third panelist will present Advanced Tips and Tricks.

Time: Tuesday, June 16th, 2015, 2:00 p.m. - 3:30 p.m.

Science of 3D Printing: MASTER CLASS

Advances in 3D printing technology and materials have enabled many new applications in 3D modeling, prototyping and manufacturing in fields including engineering, biomedicine, and chemicals/pharmaceuticals. From perspectives of library-based 3D printing services and a visualization software developer, the panel will introduce principles of 3D printing technologies and associated material science; discuss applications and potential of 3D printing for visualization in research, STEM education, and industry; and provide insights on 3D printing service operations, including service models, opportunities, community impacts and partnerships.

Time: Tuesday, June 16th, 2015, 2:00 p.m. - 3:30 p.m.

All Sciences Poster Session

Join your colleagues in the sciences for an entertaining evening of viewing the latest in science librarianship research while munching on great tasting goodies. Renew acquaintances,

meet new friends, chat with others interested in the same research area, and see what is new and hot in science librarianship.

Time: Monday, June 15th, 2015, 5:00 p.m. - 7:00 p.m.

All room numbers and event spaces will be announced as it gets closer to conference time.

As you should have seen back in January, there were several of us from the Division/Sections who attended Leadership Summit in Baltimore. There was lots of information given to us by outside speakers as well as our own Association leadership and headquarters staff. If you have any specific questions about Leadership Summit, please feel free to contact myself, Giovanna Badia, Christina Byrne, Mary Whittaker, Gabriele Hysong or Niamh Tumelty. We'll all be happy to share what we heard and learned.

With regards to anything else happening with the Engineering Division, let me hear from you. Until next time...

Sara Davis
Chair, Engineering Division, SLA
Library, Jacobs – Houston,
832-351-7025, sara.davis@jacobs.com

Beyond Borders, Strategizing, Networking and Bonding with Fellow Professionals

by Dr. Susmita Chakraborty (Assistant Professor, Dept. of Lib. & Inf. Sc, University of Calcutta, India; Secretary, Asian Chapter, Special Libraries Association (SLA-Asian); Recipient, Momentum Press SLA Annual Conference Grant)

Introduction

SLA Conference is a place which is a must-go for all librarians. It gives you the opportunities of bonding with your global partners and helps in better decision-making and problem solving.



The author receiving the Momentum Press Award

SLA conference attending experience

General session and Key note speech:

General Session and Awards Presentation were on 8th June, 8-11 AM. It started with the keynote presentation given by John Wilbanks, the Chief Commons Officer of the Sage Bionetworks. His colourful past includes working for US Government's IT Information, for 'Internet & Society' and for Harvard University.

Spotlight Sessions: Spotlight Sessions are held on the most important topics that the attendees may find very useful. On 8th June, there was a Session on 'Embedded Information Systems' containing discussion on MOOC (Massive Open Online Courses) which is a current curiosity among library professionals. The practitioner-panelists discussed MOOC from different angles. In another 'Spotlight Session' on 9th June, a thorough discussion was on 'Digital Content and Big Data' as it poses a big question mark to many

LIS practitioners. Representatives from different organisations discussed about their digitisation of newspapers and local history records so as to ease/increase access. They also talked about the ways of promoting the access like blogs, photo sales, etc.

Info Expo 2014: All the big names in the vendor/publisher world took part in exhibiting their products in the Info Expo at SLA 2014. Mention may be made of OCLC, IEEE, DeGruyter, Wolters Kluwer, Sage, Taylor & Francis, LexisNexis, ProQuest, Bloomberg BNA, Annual Reviews, McGraw Hill Education, EBSCO, IET INSPEC, SPIE Digital Library, SAE Int Digital Library, ICE Publishing, Access, among others.

There were booths from associations/institutions too, like: AIIP (Association of Independent Information Professionals), iSchool of University of British Columbia, IET, IMF, among others. The Info-Expo Pavilion covered almost the total floor area of the lowest level of the Vancouver Convention Centre. There were provisions of drinking water and cups, occasional complimentary drinks/snacks from the exhibitors and a couple of mega refreshment programs. There was a Passport Draw for which all the delegates were given an exhibition passport with blank pages to be stamped by the exhibitors when you visit their stall. When your passport is full of stamps, you drop them in a pre-determined box for a draw of prizes. Different vendors were holding different competitions for the delegates with various gifts to attract visitors to their stalls.

Library Tours: An exciting tour was arranged to visit TRIUMF (Canada's National Laboratory for Particle and Nuclear Physics), the Museum of Anthropology, and the Irving K. Barber Learning Centre. Boxed lunch and



Stephen B. Alayon taking the Asian Chapter Award.

bus transportation were provided. Moderators for this tour were Bernice Koh (ICICS/ Computer Science Reading Room Coordinator, University of British Columbia) and Nevenka Zdravkovska (Head, EPSL, University of Maryland). About 50 participants took part in this tour. This tour was sponsored by [Dow Jones](#) and was a ticketed event.

SLA Asian Chapter Program and Awards Ceremony 2014: Tuesday, 10th June 2014, 9:45-10:45 a.m., Room 224, Convention Centre West

Dr. P K Jain (President Elect, SLA Asian Chapter) introduced the program. Ms. Shirley Ingles-Cruz, President, SLA Asian Chapter narrated the activities of the Asian Chapter. The emphasis was on introducing ICoASL 2015 to the gathered audience. To this end, there was a presentation on Korea as a tourist destination from Randy Snape (Marketing Manager, Korea Tourism Organization). Ms. Jung Kim (Korea Special Libraries Association) introduced ICoASL 2015.

In the Awards Ceremony, Stephen B. Alayon (Southeast Asian Fisheries Development Center, Phillipines) received SLA Asian Librarian Award 2014 sponsored by IEEE & Asian Chapter. Randolph Mariano (U.S. Embassy Information Center, Phillipines) received SLA Asian Chapter Early Career Award 2014 sponsored by Asian Chapter in association with IEEE.

Mr. Tom Rink of Northeastern State University (SLA Fellow) released a book entitled 'Collaboration in International & Compara-

tive Librarianship' (published by IGI-Global, USA). The book covers in detail the role of SLA in promoting professional Development. Dr. Susmita Chakraborty (Secretary, SLA Asian Chapter) is the first editor of the book.

Concluding Remarks was made by Dr. Susmita Chakraborty (Secretary, SLA Asian Chapter) who also compeered the whole program. There was a sizable gathering of Asian as well as international delegates.

All Sciences Poster: A poster session was arranged by a combined effort between many sections. It was entitled 'All Sciences Poster Session'. The image below is showing me with our poster displayed in the background.

At Fellows and First Timers Meet: One of the quique features of SLA Conference is the interaction between the most veteran members (SLA Fellows) with the first time attendees. Here is a picture showing both President Kate Arnold and President-Elect Jill Grant observes as a SLA Fellow is addressing the First Timers.



Susmita and her poster.

The International Reception: Along with serious business, SLA Conference is also famous for its festive atmosphere. The image that follows is from the international reception that offers you a place to interact with your global colleagues. One glass of complimentary drink was provided to each at-



The International Reception.

tendee.

Chemistry Dinner: Different divisions hold their own dinners to nurture bonding of their members. Above picture is a glimpse from such a dinner hosted by the Chemistry Section.

Engineering Café: Engineering Café is an idea floated by the Engineering Division where members form different groups to discuss emerging issues in their field in a non-formal way. Different tables hold different themes and people continuously shift from table to table to take part in different discussions.



Above picture shows such a group full of new ideas at a table in the Engineering Cafe.

Engineering Division Program: Engaging Users with Technology: 9th June 2014, Vancouver Convention Centre, 10 AM, Room 220.

The session on the topic 'Engaging Users with Technology' was trying to focus on factors of decision making while purchasing a products that costs much money and time. It wanted to explore whether the decision is driven by the functionality of the technology or depends largely on how the interaction enhances our experience.

The moderator of the session was Andy Shimp from Yale University. The panelists were Damara Jacobs from J3 Consulting Group, Heather O'Brien from UBC iSchool and Donna Wrublewsky from California Technology Institute. The session was sponsored by SAE International. It was organised by Engineering Division and User Experience Caucus. The speakers explored models to measure user engagement along with teaching and learning applications.

Presentation of President-Elect, SLA-Asian: Dr. P K Jain, President-Elect, SLA-Asian presented a paper where he described the role of the Asian Chapter, the fastest growing chapter of SLA.

Annual Buiness Meeting: SLA CEO Janice LaChance presented the state of the art scenario of SLA association activities on June 10th, 4-5 PM.

Closing Session: Janice's talk was followed by a vibrant closing session filled with lively lectures from Sarah Glassmeyer (Director, Content Development at CALI), Heather Piwowar (Co-Founder, Impact Society) and Cecily Walker (Vancouver Public Library).

Conclusion: After the Closing Ceremony is over, there were so many clusters loitering here and there discussing future plans for collaborative work. With a heavy heart, it is the time to say good bye to new-found friends and to head for home.

News from the Aerospace Section

Aerospace Section

Mary Silva Whittaker, 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.



Greetings to all Aerospace Section members! I am honored to serve as Chair of the Aerospace Section this year. It was an adventure a few years ago to become the Treasurer of the Engineering Division for two terms. When asked in February 2014 if I would be interested in chairing this Section, I said "yes!" Edna Paulson, now our Past-Chair, showed me the Chair "ropes" last year while I was Chair-Elect, and I hope I can live up to her expectations by being your Chair this year!

As a bit of information about me, I am a librarian at The Boeing Company in Seattle, Washington. I lead the cataloging team where we catalog, index, and classify a variety of materials for our enterprise-wide library. I posted a slightly longer bio on the SLA Engineering blog if you want to read more about me or your colleagues (<http://engineering.sla.org/member-profiles/>). (Please consider posting your own bio there for all members to view.)

When I learned that I need to write this column as one of my Chair responsibilities, I thought it would be wonderful if I could contribute to a cover of one of these issues. The editor-in-chief of *SciTech News* liked the current photo enough to use it as this issue's cover. I found this photo in the rich resources of the Boeing Historical Archives. The Boeing Stratoliner is a beauty, don't you think? And when combined with majestic Mount Rainier, the Stratoliner shows the grandeur of American commercial flight of yesteryear. I am still thrilled to watch the Boeing 737 Next Generation aircraft leave Renton Municipal Airport -- all decked out in their green fuselages and the painted tails of their livery (although more and more leave the Renton Plant on their maiden flight all painted in their livery). It's a view I've seen since childhood (okay,

back then it was 737 *Classics* taking off!). The new airplanes then fly to Seattle for additional flight testing, painting, finishing, and then for delivery to their customer. It is a thrill for me to view the Renton Plant from my home, and I favor the days when the wind is from the north so then I know the new 737s will take off in a path that I can watch as they gain altitude and turn toward their next stop. Amazing.

I am working with other Aerospace section members to bring about an Aerospace Section-sponsored program at SLA 2015 in Boston. It is about NASA spinoffs and I hope you will "save the date" and attend this session to be held on Sunday, June 14th at 3:30pm. Instead of having breakfast together this year on Monday (our standard fare), please make sure to reserve a spot at the Engineering Division Luncheon (Monday, June 15th at noon). SLA headquarters does not allow us any longer as a section to have both a program AND a breakfast. When I polled you last year via the listserv, you told me to "Be Revolutionary" and put forth a program in lieu of a breakfast. I hope you like this program. I find it a fascinating topic: if you can't personally go into space, can you make use of some technology that was used in space?

Throughout the year, it is my intention to send out regular email to the AERO listserv describing websites and other online materials that I make use of for a variety of reasons. By the time this column is published, I hope you've read two or three of my email missives.

Please consider joining the SLA-AERO listserv if you are not already a subscriber. The

instructions for joining are here: <http://engineering.sla.org/discussionlists/#Aero>

Let me know if you have any suggestions or questions. I am available! Stay in touch.

Warm regards,
Mary Silva Whittaker
mary.s.whittaker@boeing.com

News from the Architecture, Building Engineering, Construction and Design (ABCD) Section

ABCD Section

Kati Arzeta, Chair



The scope of the Architecture, Building Engineering, Construction and Design Section is to promote the exchange of knowledge and information among individuals and organizations interested in the development, control, and use of information resources in the built environment with a focus on the specifications, codes, and standards used in the design and construction of buildings and structures.

The Architecture, Building Engineering, Construction and Design (ABCD) group is very excited to enter our first full calendar year as a section of the Engineering Division. We existed as a SLA caucus from 2006 until last year when we became part of the Engineering Division. I'd like to take this opportunity to thank Bert Saul and Joan Cunningham who served as chairs of our group for many years and helped oversee the transition into a full-fledged section.

To kick-off our new status, we had a very well-attended session at the 2014 Annual Conference in Vancouver (see the September 2014 edition of SciTech News for a detailed summary). This year we are looking forward to participating in two conference sessions. We are hosting "Hot Topics in Architecture and Building Design" which will be a round-table discussion of the trends, troubles and triumphs of information management and resources focused on the built environment.

We are also co-hosting a session on Green Building Design with the Environment & Resource Management Division. This session will be in panel format and include an overview of standards and certifications for green building design, a practicing architect describing the design process and a librarian working in a "green" building.

This year I would also like to establish some longer-term goals for our section to ensure that we are best meeting our members' needs. I look forward to getting to know more of our members and hopefully seeing many of them in Boston. If anyone has questions about our group or suggestions for the future, please feel free to contact me.

Kati Arzeta
Kati.arzeta@ch2m.com
Chair, ABCD Section

Sci-Tech Book News Reviews Susan Fingerman, Selector



The abstracts in the following section are selected from protoview.com, a database of scholarly titles and abstracts available for subscription from Ringgold, Inc. For more information, please visit: <http://www.ringgold.com/protoview>.

HYDROLOGY, OCEANOGRAPHY

GB665 9781482242935

The Science of Water: Concepts and Applications, 3rd Edition

Frank R. Spellman

CRC Press, ©2015 528 p. \$129.95

The primary audience for this book is technical professionals and students in water and wastewater fields. It will have a secondary readership of people in other fields looking for information on fresh water and wastewater and its treatment. The book covers surface water, groundwater, and groundwater under the direct influence of surface water, as well as what constitutes the later category, and the Surface Water Treatment Rule. This new edition has been expanded to discuss the growing problem of water contamination. It also includes new tables and charts. There is a new chapter on water economics and another on water useage, and expanded coverage of wastewater stabilization ponds. Chapters look at water as a substance, water hydraulics, chemistry, biology, ecology, and treatment.

GB5014 9780123948465

Hydro-Meteorological Hazards, Risks, and Disasters

Edited by Baolo Paron and Giuliano Di Baldassarre (Hazards and Disasters Series)

Elsevier, ©2015 288 p. \$130.00

Geographers, economists, and hydraulic engineers are among the contributors who explore instances and effects of too much water and too little water. Their topics include measuring and mapping flood processes, palaeo-flood hydrology: reconstructing rare events and extreme flood discharges, large-scale assessments of vulnerability and exposure in developed and developing countries, the integrated risk assessment of water-related disasters, floods and storms practical exercises, remote sensing and modeling approaches for monitoring and assessing drought in the Famine Early Warning Systems Network, and hydrological modeling for drought assessment.

ENVIRONMENTAL SCIENCE

GE60 9781619255357

Careers in Environment & Conservation (online access included)

Edited by Michael Shally-Jensen

Salem Press - Grey House Publishing, ©2014

345 p. \$95.00

Editor Shally-Jensen offers this career profile compendium on environment and conservation jobs. Occupations are organized alphabetically and comprise many established roles in science, forestry, and waste engineering as well as newer positions dealing with recycling, energy efficiency, and environmental auditing. The editor's introduction presents major areas where sustainability practices are gaining traction. Each occupational profile then introduces the scope of the work, common environments, appropriate interests and necessary skills, and typical duties. Sub-specialties, required education or certification, and employment and salary prospects are presented, ending with a list of resources for additional information. Q&A's with people currently in the field are included.

GE90 9781845649944

Environment and Sustainability; proceedings International Conference on Environment and Sustainability (2014: Hong Kong, China)

Edited by Garry Lee (WIT Transactions on the BUilt Environment; Volume 154)

WIT Press, ©2015 712 p. \$632.00

Environment and Sustainability contains papers presented at the May 2014 International Conferences on Environment and Sustainability (ICES 2014), which brought together an international group of academic scientists, engineers, industry researchers, and students for an exchange of ideas. There are 89 papers divided into four sections: energy and materials; environment science and engineering; civil and environment; sustainability and economics. The book covers a wide range of subjects from the heat energy utilization parameters of reclaimed city water, the fractal characteristics of fiberboard, the theoretical analysis model of sulfate on concrete to sustainable development of mineral resources in China, spatial clustering trends in the urban en-

vironment, and expanding domestic demand in China from the perspective of Marx. There are references, figures, and tables.

GE196 9781782548126

Governance for Urban Sustainability and Resilience: Responding to Climate Change and the Relevance of the Built Environment

Jeroen van der Heijden

Edward Elgar, ©2014 229 p. \$120.00

Drawing on interviews with policy makers, public servants, architects, engineers, investors, contractors, developers, and others in the building industry, this book presents a framework of 12 design principles for creating governance tools intended to develop more sustainable cities. Methods fall into several categories: direct regulatory interventions, collaborative governance, voluntary programs, and market-driven governance. Real examples from around the world demonstrate how to use both traditional and emerging governance tools to create sustainable cities with less negative impact on the environment. The book's readership includes practitioners, researchers, and scholars in urban planning, urban governance, sustainable development, and environmental policy.

GP702 9781909030817

Glycopolymers: Synthesis and Applications

Edited by Ravin Narain

Smithers Rapra, ©2014 168 p. \$130.00

Engineers and chemists from Europe, North America, and Japan describe the synthesis of glycopolymers and their characterizations, biological properties, and applications to biomedicine. The five chapters cover the recent development of synthetic glycopolymers; their solution properties and the impact of molecular weight, types of carbohydrate residues, and morphology; glycopolymer bioconjugates; and biomedical technologies that use glycopolymers, such as for improving biocompatibility, the formulation of novel therapeutic drugs, and genes, biosensing, bioimaging, cell/protein isolation, and pathogen inhibition.

SOCIAL SCIENCES (GENERAL), STATISTIC

H61 9781452217451

The Sage Dictionary of Qualitative Inquiry, 4th Edition

Thomas A. Schwandt

SAGE, ©2015 332 p. \$60.00 (pa)

Schwandt presents students, academics, and researchers with a comprehensive guide to the

vocabulary that reflects the origins, purpose, meaning, methods, and stages of qualitative inquiry. The author begins with a list of conventions and a reader's guide, then proceeds into the main body of his text, organized encyclopedically by term, starting with abduction and ending with writing strategies. This fourth edition is updated and includes twenty new entries reflecting recent developments in the field. Thomas A. Schwandt is a faculty member of the University of Illinois, Urbana-Champaign.

TRANSPORTATION AND COMMUNICATIONS

HE336 9781482228700

Traffic Simulation and Data: Validation Methods and Applications

Edited by Winnie Daamen, Christine Buisson, and Serge P. Hoogendoorn

CRC Press, ©2015 245 p. \$129.95

Daamen, Buisson, and Hoogendoorn present researchers, professionals in the field, and students with a complete overview of traffic data collection, state estimation, calibration and validation methods for traffic modeling and simulation. The eight academic essays and articles that make up the text provide a general introduction, an investigation of data collection techniques, data processing and enhancement techniques, calibration and validation principles, sensitivity analysis, network model calibration studies, and validation. Daamen and Hoogenboom are both faculty members of Delft University of Technology, The Netherlands. Buisson is a faculty member of the University of Lyon, France.

SCIENCE (GENERAL)

Q130 9781781954065

Women in STEM Careers: International Perspectives on Increasing Workforce Participation, Advancement and Leadership

Edited by Diana Bilimoria and Linley Lord

Edward Elgar, ©2014 256 p. \$130.00

Drawing on research from the US, Australia, and Europe, the 12 essays in this volume examine reasons for women's low participation, advancement, and leadership in science, technology, engineering, and mathematics (STEM) fields and successful strategies at the individual, organizational, and industry levels. Engineering, management, science, educational psychology, and other specialists from these regions address women's individual experiences in STEM careers and decisions to stay or leave, with discussion of the

role of the ideal self and engagement in women's persistence in engineering, factors that differentiate women working in engineering from those who left the profession, the career attitudes and motivations of women in the Australian mining industry, family issues for female engineers, and insights from female managers and leaders in engineering; organizational initiatives for advancement, including the concept of women as power resources, practices to increase participation in US academic STEM fields, and the role of professional societies in gender equity; and changing the discourse and practice about women in STEM careers through gender equality interventions, negotiating organizational norms on combining career and child care, and addressing the problematic idea that engineering is gendered.

Q180 9781771880336

Theoretical and Computational Research in the 21st Century

Edited by Nazmul Islam

Apple Academic Press, ©2015 257 p. \$129.95
Physical scientists and mathematicians, most from Mexico, describe recent developments of theoretical, mathematical, and computational conceptions, modeling, and simulation of specific research themes covering all scientific and technical disciplines of mathematics, chemistry, physics, and engineering. Among the topics are the time evolution of the hard and soft acids and bases theory, a fast solver for the backward heat conduction problem in unbounded domains, classical charged particles in arbitrary motion, a second-order linear differential equation in its exact form, and evaluating protonation energy of molecules in terms of quantum theoretical descriptors. Distributed by CRC Press, A Taylor & Francis Group member.

Q325 9780128009536

Quantum Machine Learning: What Quantum Computing Means to Data Mining

Peter Wittek (Elsevier Insights)

Academic Press, ©2014 163 p. \$94.95 (pa)
Wittek presents students, academics, and professionals in the field with a comprehensive examination of quantum computing, learning theory and data mining, and quantum machine learning. The author has organized the bulk of his text in three parts. Part one provides an overview of the fundamental concepts including machine learning, quantum mechanics, and quantum computing. Part two examines classical learning algorithms in computing, covering unsupervised learning, pattern recognition and neural networks, supervised learning and support vec-

tor machines, regression analysis, and boosting. The third part brings the material together, focusing on clustering structure and quantum computing, quantum pattern recognition, quantum classification, quantum process tomography and regression, and boosting and adiabatic quantum computing. The author is a faculty member of the University of Borås, Sweden.

Q334 9783038352396

Information Technology Applications in Industry III; select papers; 2 volume set

International Conference on Information Technology and Management Innovation (3rd: 2014: Shenzhen, China) Edited by Su-Fen Yang (Applied Mechanics and Materials; Volumes 631-632)
Trans Tech Publications, ©2014 1475 p.
\$345.00 (pa)

Drawn from the 2014 3rd International Conference on Information Technology and Management Innovation (ICITMI 2014), held in July of that year in Shenzhen, China, the 294 papers in this two-volume set address research in topics related to information technology, artificial intelligence, algorithms, and computation methods; mathematical methods and information technologies in power and electronics engineering; sound, image, signal, and video processing technologies; sensors, testing, detection, measurement, and monitoring technologies; control and automation technology, modeling, and simulation; communications technology; computer network and information security; database systems and software development; e-commerce, e-government, and internet technologies; management and decision support systems; and information technologies in universities and education. Contributors work in business, math, engineering, economics, information technology, and other fields primarily in Asia.

Q337 9781466663282

Emerging Research on Swarm Intelligence and Algorithm Optimization

Edited by Yuhui Shi (Advances in Computational Intelligence and Robotics)
Information Science Reference, ©2015 341 p.
\$225.00

This book is a collection of papers published between 2011 and 2012 analyzing how the behavior of complex natural decentralized collective systems, such as an ant colony, can be applied to artificial intelligence algorithms. As digital matrices become more and more complex, researchers are looking to these swarm intelligences to model new systems. Intended for graduate students and swarm intelligence researchers, this

book looks at examples of artificial swarm intelligences and explores how these artificial swarm algorithms can be used for such things as wireless sensor routing, recommendation of web pages, robotic team organization, and image selection applications.

MATH, COMPUTERS

QA9 9781614518297

Formalism and Beyond: On the Nature of Mathematical Discourse

Edited by Godehard Link (Logos: Studien zur Logik, Sprachphilosophie und Metaphysik; Volume 23)

De Gruyter, ©2014 419 p. \$120.00

Link presents students, academics, and researchers with a collection of academic essays focused on the role of the formalistic aspects of mathematics. The eleven papers that make up the bulk of the text cover duality, epistemic efficiency, and consistency, Frege on quantities and real numbers in consideration of the theories of Cantor, Russell, and others, Frege on formality and the 1906 independence test, formal discourse from metaphysics to philosophical logic, live and dead signs in mathematics, generalization and the impossible, and a wide variety of other mathematical subjects. Godehard Link is a retired faculty member of the University of Munich.

QA37 9783038351689

Recent Engineering Decisions in Industry; select papers

International Conference on Materials Science and Mechanical Engineering (2nd: 2014: Taipei, Taiwan) Edited by Yuanzhi Wang (Applied Mechanics and Materials; Volume 595)

Trans Tech Publications, ©2014 306 p. \$138.00 (pa)

Wang presents students, academics, researchers, and professionals in the field with a collection of selected, peer-reviewed papers drawn from research presented at the second International Conference on Materials Science and Mechanical Engineering, held in the spring of 2014, in Taipei, Taiwan. The papers collected in this volume have been organized into eight chapters, focused on computational mathematics and mathematical modeling, biomedical engineering, measurements, control, communication, and electronics, materials and technologies in construction, applies and computational mechanics, mechanical engineering, and applied materials science and related technologies. Yuanzhi Wang is a faculty member of Wuhan University, China.

QA155 9781466515871

The Mathematics Companion: Mathematical Methods for Physicists and Engineers

Anthony C. Fischer-Cripps

CRC Press, ©2015 286 p. \$39.95 (pa)

Mathematics courses for science students are generally taught by mathematicians, says Fischer-Cripps, who are accustomed to mathematics students and tend to think the students know more mathematics than they do. He offers a resource that provides an alternative, scientific perspective on the recommended text for any particular course or subject in mathematics. The book can also serve as a handy reference for professional physicists who want to refresh their memory of a certain area or look up one equation or solution without having to wade through an entire mathematics textbook.

QA174 9783110309102

Wilson Lines in Quantum Field Theory

Igor O. Cherednikov, Tom Mertens, and Frederik F. Van der Veken (De Gruyter Studies in Mathematical Physics; Volume 24)

De Gruyter, ©2014 257 p. \$168.00

The three physicists collect, summarize, and present in an appropriate form the most important results available in the literature in order to familiarized readers with the theoretical and mathematical foundations of the concept of Wilson lines and loops. They explain how to implement elementary calculations utilizing the Wilson lines within the context of modern quantum field theory, particularly in quantum chromodynamics. They assume readers to be graduate and postgraduate students working in various areas of quantum field theory, as well as curious researchers from other fields.

QA269 9781118899625

Mathematical Game Theory and Applications

Vladimir Mazalov

Wiley, ©2014 414 p. \$105.00

This volume discusses mathematical game theory and its applications. It covers strategic-form two-player games, zero-sum games, non-cooperative strategic-form n-player games, extensive-form n-player games, parlor and sport games, negotiation models, optimal stopping games, cooperative games, network games, and dynamic games. Each chapter ends with exercises. Knowledge of the fundamentals of mathematical analysis, algebra, and probability theory is assumed.

QA278 9781446252444

The Sage Handbook of Regression Analysis and Causal Inference

Edited by Henning Best and Christof Wolf
SAGE, ©2015 414 p. \$175.00

To complement the many textbooks on specific techniques, social scientists outline a broad set of regression techniques and methods for causal inference to help students and researchers understand and select appropriate techniques for particular cases. They cover estimation and inference, regression analysis for cross-sections, and causal inference and analysis of longitudinal data. Among the topics are Bayesian estimation of regression models, non-linear and non-additive effects in linear regression, regression models for nominal and ordinal outcomes, matching estimators for treatment effects, and regression discontinuity designs in social sciences.

QA7888 9781439895832

Hardware Security: Design, Threats, and Safeguards

Debdeep Mukhopadhyay and Rajat Subhra Chakraborty

CRC Press, ©2015 556 p. \$89.95

Mukhopadhyay and Chakraborty present students, academics, and practitioners with an overview of the design-for-security methodology employable in hardware design. Their text is organized in six parts, covering the background of hardware security, hardware design of cryptographic algorithms, side channel analysis, hardware intellectual property protection, hardware trojans, and physically unclonable functions. Throughout the text, the authors provide key background and contemporary information to learn hardware security fundamentals and practical applications. Debdeep Mukhopadhyay and Rajat Subhra Chakraborty are both faculty members of the Indian Institute of Technology Kharagpur West Bengal, India.

ASTRONOMY

QB351 9783110337471

Frontiers in Relativistic Celestial Mechanics; Volume 1: Theory

Edited by Sergei M. Kopeikin (De Gruyter Studies in Mathematical Physics; Volume 21)

De Gruyter, ©2014 401 p. \$139.95

Astronomers and physicists discuss selected topics in relativistic celestial mechanics, a branch of modern gravitational physics that explores the fundamental structures of space-time by studying the motion of massive bodies such as black

holes, stars, planets, as well as elementary particles. They cover the general relativistic two-body problem, Hamiltonian dynamics of spinning compact binaries through high post-Newtonian approximations, the covariant theory of the post-Newtonian equations of motion of extended bodies, the DSX-framework, the general relativistic theory of light propagation in multipolar gravitational fields, the back-reaction problem in cosmology, and post-Newtonian approximations in cosmology,

QB462 9781583818602

Numerical Modeling of Space Plasma Flows; proceedings

International Conference on Numerical Modeling of Space Plasma Flows (8th: 2013: Biarritz, France) Edited by Nikolai V. Pogorelov, Edouard Audit, and Gary P. Zank (Astronomical Society of the Pacific Conference Series; Volume 488)

Astronomical Soc./Pacific, ©2014 292 p. \$77.00

The 41 papers cover turbulence and cosmic ray transport; astrophysical flows; space plasma flows; kinetic particle, and hybrid simulations; numerical methods, algorithms, and frameworks. Among specific topics are cosmic magnetic fields from torsion modes and massive photon inflation, the numerical treatment of dust diffusion in dusty proto-planetary disks, time-dependent processes in the sheath between the heliospheric termination shock and the heliopause, energetic particle transport with stochastic differential equations: general methods and the extension to anomalous diffusion regimes, building a numerical relativistic non-ideal magnetohydrodynamics code for astrophysical applications, and a new two-moment scheme with algebraic closure for energy-dependent multi-flavor neutrino transport in supernovae.

QB600 9781482214888

Planetary Geodesy and Remote Sensing

Edited by Shuanggen Jin

CRC Press, ©2015 382 p. \$149.95

Astronomers and geographers set out the main techniques, methods, and observations of planetary geodesy and remote sensing and their applications in planetary science for planetary explorers and researchers who have some background and experiences in geodesy and remote sensing. The topics include laser altimetry and its applications in planetary science, integrating and co-registering multisource Lunar topographic data sets for synergistic use, Martian minerals and rock components from MRO CRISM hyperspectral images, Mercury's magnetic field in the MESSENGER era, determining the Lunar gravity field with

data from Chan'E-1 and other missions, and the theory of the physical libration of the Moon with a liquid core.

QB801 9781583818480

Stellar Astrophysics; proceedings

Pacific Rim Conference on Stellar Astrophysics (10th: 2013: Seoul, Korea) Edited by Hee-Won Lee, Kam-Ching Leung, and Young Woon Kang (Astronomical Society of the Pacific Conference Series; Volume 482)

Astronomical Soc./Pacific, ©2014 280 p. \$77.00

The 48 papers cover stellar activities and atmosphere, binary stars, compact objects, and stellar clusters. Among the topics are widest separation and the lowest mass objects among planetary-mass companion candidates around young stars, mass transfer in eccentric binaries using the binary evolution code BINSTAR, dark-spot activity on the secondary as the origin of variable mass accretion in cataclysmic variables, orbital period changes of two possible progenitors of type Ia supernovae, and eigenfunctions and Green's function for a radiative transfer equation in curvilinear geometries.

PHYSICS

QC176 9783038350804

Diffusion and Conduction in Zeolites: Data Compilation

Edited by D.J. Fisher (Defect and Diffusion Forum; Volume 351)

Trans Tech Publications, ©2014 203 p.

\$138.00 (pa)

Fisher presents this dense and largely unelaborated data compilation on diffusion and conduction in zeolites. Data is organized according to the type of zeolite in alphabetical order, from 4A to ZSM-58. Diffusion of a variety of solvents, gases, and ions and conduction of ions in various zeolites are discussed in a continuous sequence of numbered paragraphs, with each paragraph summarizing the methods and results of a single study followed by a full citation. Tables and figures of relevant results are included, and the book has three separate indices by author, material, and keyword.

QC375 9781628412925

Optical Glass

Peter Hartmann

SPIE, ©2014 162 p. \$62.00 (pa)

In an effort to reduce communication problems between suppliers and customers of glass for precision imaging in visible light, Hartmann pres-

ents a broad reference on the glass. He covers the significant and definitions of optical glass, production, refractive index and dispersion, homogeneity, transmittance, chemical resistance, mechanical properties, thermal properties, environmental properties, the specification of optical elements: recommendations for optical glass properties and optical element manufacturing, and other optical materials.

QC476 9783038351955

Luminescence: Basic Concepts, Applications and Instrumentation: Special Topic Volume With Invited Peer Reviewed Papers Only

Edited by Hardev Singh Virk (Defect and Diffusion Forum; Volume 357)

Trans Tech Publications, ©2014 273 p.

\$138.00 (pa)

Eight review papers and one case study provide a snapshot of the current science of luminescence. They cover the importance of environmentally friendly organic light-emitting diode (OLED) lighting, OLEDs and their applications, photoluminescence studies in II-VI nanoparticles embedded in a polymer matrix, electroluminescence in chalcogenide nanocrystals and nanocomposites, the thermoluminescence of persistent luminescent materials, the role of thermoluminescence in the design of inorganic scintillators, some landmarks in the development and application of luminescence to Earth and planetary sciences, luminescence instrumentation, and a case study of a thermoluminescence reader controlled by a personal computer.

QC780 9781482251722

Blow-Up for Higher-Order Parabolic, Hyperbolic, Dispersion and Schrödinger Equations

Victor A. Galaktionov, Enzo L. Mitidieri, and Stanislav I. Pohozaev (Monographs and Research Notes in Mathematics)

CRC Press, ©2015 542 p. \$119.95

The three mathematicians systematically study particular nonlinear partial differential equations (PDEs) in the four categories, and describe many of their properties. They touch on traditional questions of existence, uniqueness, global asymptotics, regularizations, shock-wave theory, and various blow-up singularities. Among the topics are a variational approach to elliptic equations; global and blow-up solutions for Kuramoto-Sivashinsky, Navier-Stokes, and Burnett equations; two types of blow-up patterns in semilinear fourth-order hyperbolic equations; and shock, rarefaction, and blow-up waves in higher-order nonlinear dispersion PDEs.

QC861 9789814335690

Applicable Atmospheric Dynamics: Techniques for the Exploration of Atmospheric Dynamics

Istvan Szunyogh

World Scientific, ©2015 588 p. \$158.00

For researchers who use weather prediction models or data sets created with the help of weather prediction models, this volume outlines advanced techniques in the study of atmospheric dynamics by numerical experimentation, as well as simplified and highly idealized models for the development and initial testing of such techniques. It focuses on the design of diagnostic calculations for data sets produced by forecast centers or a simplified or idealized model. It reviews the key model and diagnostic equations, then discusses concepts based on partitioning the fields of the atmospheric state variables into a basic flow component and perturbation component, including the most often used reduced forms of the atmospheric governing equations, atmospheric wave dynamics, atmospheric instabilities, and atmospheric energetics; how the continuous governing equations can be turned into the spatially and temporally discretized equations of the numerical models; and atmospheric data assimilation. Knowledge of calculus, vector calculus, linear algebra, and probability theory and statistics is assumed.

QC874 9781611973532

Climate Modeling for Scientists and Engineers

John B. Drake (Mathematical Modeling and Computation)

SIAM, ©2014 165 p. \$69.00 (pa)

Targeting graduate science and engineering students, and stipulating at the outset that the definition of climate is nebulous and evolving, Drake's primary focus is to describe the principles and practice of climate modeling. Not to be underestimated is the role of general circulation models and high-end computer simulation. Climate will be viewed as multifaceted but always as the solution of a specific mathematic model. There are five chapters: earth observations; geophysical flow; numerical methods of climate modeling; climate simulation; climate analysis. There are figures and a bibliography.

CHEMISTRY

QD54 9781466560727

Labs on Chip: Principles, Design, and Technology

Eugenio Iannone (Devices, Circuits, and Systems)

CRC Press, ©2015 1136 p. \$189.95

Designed for advanced students, researchers wishing to explore a new field, and specialists seeking a broader understanding, this thorough reference is a complete resource for understanding labs on chip in biotechnology. The book begins with an introduction to the biological chemistry needed to work on labs on chip. Iannone then explores the technology and design techniques associated with fluid dynamics, monolithic micro- and nanotechnology and out-of-equilibrium biochemistry, the three major fields of labs on chip technology. The book takes a global perspective as it also addresses fabrication, microfluidics, optical detection techniques, planar technologies and labs on chip for genetics.

QD79 9780444595966

Flow Analysis: A Practical Guide

Edited by Víctor Cerdà, Laura Ferrer, Jessica Avivar, and Amalia Cerdà

Elsevier, ©2014 278 p. \$250.00

Editors Cerdà, Ferrer, Avivar, and Cerdà present students, academics, and general interest readers with a comprehensive guide to flow techniques for automating chemical analysis. Bringing together insight and practical experience from a variety of international contributors, the editors investigate the evolution and description of the principal flow techniques, online analytical determination modes, online separation and preconcentration methods, the flow workshop, detectors, accessories, and interfaces, key software applications, environmental applications, and automating radiochemical analysis. The editors are faculty members of the University of the Balearic Islands.

QD96 9781466592247

Modern NMR Techniques for Synthetic Chemistry

Edited by Julie Fisher (New Directions in Organic & Biological Chemistry)

CRC Press, ©2015 341 p. \$159.95

Chemists and biologists explore selected topics in the use of nuclear magnetic resonance (NMR) spectroscopy in synthetic chemistry, encompassing the underlying physical principles, some mathematics, and explanations of the nuts-and-bolts practicalities. They cover the basics at the level of an undergraduate chemistry course; dynamic NMR; NMR in ligand binding studies; diffusion: definition, description, and measurement; multi-nuclear magnetic resonance spectroscopy; NMR and complex mixtures; and selected appli-

cations of NMR spectroscopy.

QD139 9780444594204

Microwave-Assisted Sample Preparation for Trace Element Determination

Edited by Érico Marlon de Moraes Flores

Elsevier, ©2014 400 p. \$199.95

Chemists provide additional information to previously published books on using microwave radiation in the preparation of samples to determine trace elements. The topics include microwave heating, systems for microwave-assisted wet digestion, wet digestion using microwave heating, microwave-induced combustion, diluted acids in microwave-assisted wet digestion, microwave-assisted ultraviolet digestion, microwave-assisted extraction, flow digestion systems with microwave and conductive heating, and microwave-assisted sample preparation focusing on "omics" areas.

QD181 9780857095084

Graphene: Properties, Preparation, Characterisation and Devices

Edited by Viera Skákalová and Alan B. Kaiser (Woodhead Publishing Series in Electronic and Optical Materials; Number 57)

Woodhead Publishing, ©2014 376 p. \$250.00

Physics and materials scientists examine key aspects of graphene, in single-layer, bilayer, and multi-layer forms. In sections on preparation, characterization, and electronic transport, they consider such topics as the epitaxial growth of graphene on silicon carbide, the chemical vapor deposition growth of graphene film, graphene produced by electrochemical exfoliation, transmission electron microscopy of graphene, Raman spectroscopy, the photoemission of low-dimensional carbon systems, electronic transport in bilayer graphene, the effect of adsorbents on electronic transport, single-charge transport, and graphene nano-electro-mechanics.

QD262 9781118071861

Multicatalyst System in Asymmetric Catalysis

Edited by Jian Zhou

Wiley, ©2015 697 p. \$175.00

Chemists explain the theory, practice, and results of combining multiple distinct catalysts --at least one of them chiral --as a promising strategy to tackle challenges in achieving ideal asymmetric catalysis. The effects of such a multi-catalyst system can be classified into three types, they say: asymmetric cooperative catalysis (the simultaneous activation of distinct reaction partners), asymmetric double activation catalysis (double

activation of one substrate), and asymmetric assisted catalysis (the generation of an enhanced catalytic species). All three lower the the energy barrier of the reaction. They find that multi-catalyst systems are also particularly attractive for developing tandem reactions, which essentially mimic the multi-enzymatic system that Nature uses to synthesize complex molecules.

QD281 9781466588578

Environmentally Sustainable Catalytic Asymmetric Oxidations

Konstantin Bryliakov

CRC Press, ©2015 149 p. \$139.95

Of the various types of asymmetric processes, Bryliakov focuses on chirally catalyzed oxidation reactions, discussing existing transition metal-based and ecologically friendly catalyst systems --essentially those using H₂O₂ or O₂ as the ultimate oxygen source --for various asymmetrical oxidation process such as epoxidations, sulfoxidations, cis-dihydroxylations, Baeyer-Villiger oxidations, the kinetic resolution of secondary alcohols, and the oxidative coupling of 2-naphthols. He also describes models and mechanisms of non-heme oxidations catalyzed by iron and manganese.

QD383 9781909030886

Polyphosphazenes for Medical Applications

Ian Teasdale and Oliver Brüggemann

Smithers Rapra, ©2014 203 p. \$130.00

After reviewing current procedures for synthesizing novel poly(organo)phosphazenes with specific properties, this slim volume examines the rate of hydrolytic degradation determined by the choice of organic substituent, and describes the use of polyphosphazenes as immunoadjuvants, scaffolds for tissue engineering, polymer therapeutics for targeted drug delivery, and injectable hydrogels for controlled drug release devices. The last chapter considers why transfer of the technology from the laboratory to the clinic has been slow and assesses future prospects for polyphosphazene adoption given its high cost and manufacturing challenges compared to inert engineering materials.

QD415 9781771880183

Chemistry and Chemical Biology: Methodologies and Applications

Edited by Roman Joswik, Andrei A. Dalinkevich, Gennady E. Zaikov, and A.K. Haghi (AAP Research Notes on Chemistry)

Apple Academic Press, ©2015 285 p. \$109.95

Contributors from the two fields present articles on various aspects, taking note of the current

shift to nanometer scale science and technology, and the linking of chemistry with other fields. Among the topics are the topological modeling of materials based on different binders incorporated with powder fillers, antioxidant activity in some isobornylphenol derivatives at the destruction of polyvinyl chloride, complex-forming properties of the new composite materials based on dialdehyde cellulose and acrylate derivatives of guanidine with d-elements, comparing free-radical scavenging properties of glutathione under neutral and acidic conditions, and studying elastic polyurethane thermal stability by differential scanning calorimetry. Distributed by CRC Press, A Taylor & Francis Group member.

QD501 9783527335626

Understanding Organometallic Reaction Mechanisms and Catalysis: Computational and Experimental Tools

Edited by Valentine P. Ananikov

Wiley-VCH, ©2015 383 p. \$190.00

Chemists describe the current understanding and research trends in the electronic structure and reactivity of organometallic compounds, with an emphasis on theoretical calculations using modern quantum chemical methods. Among the topics are mechanisms of metal-mediated carbon-nitrogen coupling processes, theoretical insights into transition metal-catalyzing reactions of carbon dioxide, combining the use of experimental and theoretical methods to explore reaction mechanisms in catalysis by transition metals, and the computational modeling of graphene systems containing transition metal atoms and clusters.

QD505 9781848168527

Gold Catalysis: An Homogeneous Approach

Edited by F. Dean Toste and Veronique Michelet (Catalytic Science Series; Volume 13)

Imperial College Press, ©2014 545 p. \$149.00

Long considered catalytically inactive, gold now plays a central role in modern organic chemistry, and here scientists explain its use as a catalyst in methodologies that create carbon-carbon and carbon-heteroatom bonds. The topics include homogeneous gold-catalyzed oxidation and reduction reactions, the gold-catalyzed addition of a heteroatom nucleophile to a carbon-carbon multiple bond, gold-catalyzed multi-component reactions, gold catalysis on tandem and cascade reactions, gold-catalyzed reactions of propargylic esters, recent developments in asymmetric catalysis, and gold catalysis in natural products synthesis. Distributed in the US by World Scientific.

QD506 9789814313766

Aqueous Lubrication: Natural and Biometric Approaches

Edited by Nicholas Spencer (IISc Research Monographs Series; Volume 3)

World Scientific, ©2014 274 p. \$108.00

Chemists, materials scientists, and other researchers describe how water-based lubricants work in nature, and how those methods can be adopted to replace oil-based lubricants in some applications in order to reduce environmental impact, improve heat transfer, and allow ultra-low friction. They cover the tribology of natural articular joints, sticky and slippery: interfacial forces of mucin and mucus gels, aqueous lubrication and food emulsions, aqueous lubrication in cosmetics, hydrogel friction and lubrication, aqueous lubrication with polymer brushes, the water-like lubrication of hard contacts by polyhydric alcohols, and the aqueous lubrication of ceramics.

QD549 9781119961246

Surface Chemistry of Surfactants and Polymers

Bengt Kronberg, Krister Holmberg, and Björn Lindman

Wiley, ©2014 479 p. \$105.00

Kronberg, Holmberg, and Lindman present this volume on surface chemistry written for use as a reference by students and industrial chemists. The first several chapters provide a general introduction to the synthesis, applications, and health/environmental concerns regarding surfactants. Counter-ion binding and the hydrophobic effect are introduced, leading into discussion of phases, micelles, interfaces, self-assembly and adsorption dynamics of surfactants and polymers. Multi-component systems containing mixed surfactants, surfactants with polymers, and/or other components are the subject of the middle chapters. The book finishes with treatment of colloidal systems including emulsions, foams, and slurries, as well as the processes of wetting and hydrophobization, basic rheology, and some specific applications.

QD702 9781909030770

Hyaluronic Acid for Biomedical and Pharmaceutical Applications

Edited by Maurice N. Collins

Smithers Rapra, ©2014 216 p. \$130.00

Hyaluronic acid is a substance widely found in connective epithelial and neural tissues throughout the human body. It is increasingly being used for medical therapies as diverse as treating osteoarthritis and eczema. Of interest to graduate students, biomedical engineers, and pharmaceu-

tical industry professionals, this collection of essays examines the latest research into how hyaluronic acid functions biomechanically, its use in soft and hard tissue repair therapies, possible cancer treatments using it, and its cosmetic applications. The authors also explore methods to prevent degradation of hyaluronic preparations and better apply them as a therapeutic treatment.

TECHNOLOGY (GENERAL)

T27 9783038352907

Advances in Computers, Electronics and Mechatronics; select papers

International Forum on Computers, Electronics and Mechatronics (2014: Zhuhai, China) Edited by Prasad Yarlagadda (Applied Mechanics and Materials; Volume 667)

Trans Tech Publications, ©2014 455 p.

\$207.00 (pa)

The 82 papers consider information technologies and intelligent decision making systems in industry, management, and education; computer networks, communication technology; software development; technologies and methods of data and signal processing; sensor, testing, detection, measurement, and monitoring technologies; modern technology in electronics and circuits; and mechatronics, industrial robots, automation, and control technologies. Among specific topics are the design and implementation of virtual reality systems for vocational education, barcode-based service-oriented material flow technology for assembling complex products, a heterogeneous network integration gateway system based on multi-threading, a distributed Kalman consensus filter algorithm with energy efficiency based on cluster-gossip, and a novel three-phase current source active power filter.

T58 9783038351757

Mechanics, Mechatronics, Intelligent System and Information Technology

International Conference on Applied Mechanics, Mechatronics and Intelligent System (2014: Changsha, China) Edited by Jun Wang (Applied Mechanics and Materials; Volume 610)

Trans Tech Publications, ©2014 1070 p.

\$276.00 (pa)

An April 2014 conference held in China provided a forum for academic scientists, engineers, industry researchers, and scholars to exchange research results. Papers from the conference describe recent work in applied mechanics, mechatronics, intelligent systems, applied information

technology, control and automation, computer science, and engineering management. Some specific topics include design of an intelligent travel system based on data mining, a mixed automatic production line based on PLC, online handwriting recognition based on Hopfield neural networks, a digital carrier monitoring system based on software defined radio, and kinematics analysis of a hot-line live working manipulator. B&w photos and images are included.

T59 9781482235623

Constructive Ergonomics

Edited by Pierre Falzon

CRC Press, ©2015 262 p. \$89.95

Researchers in ergonomics contend that their field cannot remain content with a limited and static view of adapting work to humans, a view that would restrict its goal to designing systems that are suited to work as it is defined at a certain point in time, to workers as they are at a particular moment, and to organizations as they operate here and now. Rather, they say, ergonomics must be concerned with developing individuals by setting up situations or action that lead to increased success and to acquiring or constructing knowledge and skills. It should also foster the development of organizations by integrating reflective processes that are open to workers' own capacity for innovation.

T69 9780939950959

Arsenic: Environmental Geochemistry, Mineralogy, and Microbiology

Edited by Robert J. Bowell, Charles N. Alpers, Heather E. Jamieson, D. Kirk Nordstrom, and Juraj Majzlan (Reviews in Mineralogy & Geochemistry; Volume 79)

Mineralogical Soc. of America, ©2014 635 p.

\$45.00 (pa)

This volume compiles and reviews current information on arsenic from such perspectives as the paragenesis and crystal chemistry of arsenic minerals, speciation and sorption in natural environments, thermodynamic properties for arsenic minerals and aqueous species, microbial arsenic metabolism and reaction energetics, health risks associated with chronic exposure to arsenic in the environment, managing arsenic in the mining industry, case studies of mines in Canada and California, and the hydrogeochemistry of the Tsumeb Deposit and its implications for arsenate mineral stability.

T385 9781482220292

Diffusion-Driven Wavelet Design for Shape Analysis

Tingbo Hou and Hong Qin

CRC Press, ©2015 207 p. \$69.95

This book collects new research on wavelet design on three dimensional shapes. It does not use complex mathematics, but relatively simple formulations and illustrations to explain deep theories. Part 1 is about theories, with chapters on wavelet theory, heat diffusion theory, admissible diffusion wavelets, Mexican hat wavelets, anisotropic wavelets, and wavelet generation.. Part 2 is about applications, with chapters on implementation (discrete Laplace-Beltrami operator, generalized eigenvalue problem and matrix power), shape representation, geometry processing, feature definition and detection, and shape matching, registration, and retrieval.

ENGINEERING (GENERAL, CIVIL)

TA5 9783038352891

Advanced Development of Engineering Science IV; select papers

International Conference on Automation, Communication, Architectonics and Materials (4th: 2014: Wuhan, China) Edited by Helen Zhang, M. Han, and X.J. Zhao (Advanced Materials Research; Volume 1046)

Trans Tech Publications, ©2014 581 p.

\$207.00 (pa)

The proceedings presents 122 papers in sections on materials science, chemical materials, and chemical technologies; biomedical engineering; architronics and construction; designing and research in machinery; advanced technologies in mechatronics, automation, and control; communication and networks; computation methods and algorithms and data processing; applied information technologies; and engineering management and production management. The specific topics include a microstructure and property study of wear-resistant composite coating produced by ultrasonic-assisted argon-arc clad injection, image segmentation technology with tissue section cell segmentation algorithm, and applied information technology in an adaptive Kalman filter with model and noise error.

TA7 9783038352815

Innovative Technologies and Economics in Engineering; select papers

International Scientific Practical Conference "Innovative Technologies and Economics in Engineering" (5th: 2014: Yurga, Russia) Edited by D.A. Chinakhov (Applied Mechanics and Materials; Volume 682)

Trans Tech Publications, ©2014 646 p.

\$276.00 (pa)

Revised from presentation and approved for publication by conference organizers, 118 research reports could interest readers in mechanical engineering, welding, metallurgy, material science, and computer-aided manufacturing and economics. Among the topics are increasing the accuracy of determining the position of a well bottom by minimizing seismic vibration finding errors, the effect of mold heating temperature on the cooling rate of the melt upon bronze crystallization, the mechanism of forming a protective membrane on the surface of metal-bonded diamond disks, a performance assessment of carbide tooling under thermal and loading conditions, structuring data and knowledge for the information technology of road-climatic zoning, and increasing the economic efficiency of building machines by applying reconditioning technologies.

TA169 9780128007471

Reliability Prediction From Burn-In Data Fit to Reliability Models

Joseph B. Bernstein

Academic Press, ©2014 97 p. \$59.95 (pa)

Bernstein offers an approach to assessing and qualifying the reliability of an electronic system that combines the physics of failure with the collective knowledge of reliability professionals. In this approach, reliability engineers can take data from accelerated life testing to test a single mechanism and relate it to the proportion of constant rate failures that are observed in the field. Then they can use the results from both field data and test data to model the expected lifetime behavior of electronics as they operate under specified conditions. He covers shortcut to accurate reliability prediction, multiple high-temperature operating life (M-HTOL) test principles, failure mechanisms, and a new M-HTOL approach.

TA330 9783038353119

Engineering Solutions in Industry; select papers

International Conference on Applied Mechatronics and Android Robotics (2nd: 2014: Kuala Lumpur, Malaysia) Edited by Ming-Hung Shu (Applied Mechanics and Materials; Volume 681)

Trans Tech Publications, ©2014 290 p.

\$138.00 (pa)

Physical scientists and mechanical engineers consider applied mechatronics and android robotics from the perspectives of design in mechanical engineering; technologies and instruments for measurements; mechatronics, robotics, and control; power engineering, electrical machines, and apparatus; technologies in construction; in-

formation technologies, data processing, and networks; and production management. The 55 papers consider such topics as a high-efficiency coffee roaster based on gas baking technology for home use, a mobile robot powered by solar cells, aerial steel platform overall lifting process and stress calculation, and optimizing wireless sensor network routing based on an improved shuffled frog leaping algorithm.

TA335 9783038351511

Innovative Solutions in the Field of Engineering Sciences; select papers

International Conference on Applied Mechanics and Mechanical Automation (2014: Macao, China) Edited by Kai Li Zhang (Applied Mechanics and Materials; Volume 590)

Trans Tech Publications, ©2014 938 p.
\$276.00 (pa)

Zhang presents students, academics, researchers, and professionals in the field with a collection of papers selected from the research presented at the 2014 International Conference on Applied Mechanics and Mechanical Automation, held in May of 2014, in Macao, China. The material selected for this volume has been organized in ten chapters devoted to individual subjects, including applied mechanics and engineering, advances in materials sciences and processing technologies, construction, building materials, and structural engineering, advances in mechatronics, robotics, and automation, and a variety of others. Kai-li Zhang is a faculty member of the City University of Hong Kong, China.

TA347 9781482207033

Case Studies in Intelligent Computing: Achievements and Trends

Edited by Biju Issac and Nauman Israr
CRC Press, ©2015 567 p. \$119.95

Artificial intelligence is defined as the study and design of systems that understand and adapt to changes in their environments. Using case studies, this book highlights recent findings in the field of intelligent computing. Looking at a diverse field of cases from many different disciplines, the authors examine some of the latest examples of artificial intelligence systems and designs. Intended to aid artificial intelligence researchers, the book shows the solutions and breakthroughs other researchers have had in the field. Among the individual examples are disease detection techniques based on image scanning of patient's eyes, automated surveillance systems with event recognition, robotic movement control, and mathematical modeling of cancer survival rates.

TA401 9783038351818

Process and Advanced Materials Engineering; selected papers

International Conference on Process Engineering and Advanced Materials (3rd: 2014: Kuala Lumpur, Malaysia) Edited by Iqbal Ahmed (Applied Mechanics and Materials; Volume 625)

Trans Tech Publications, ©2014 942 p.
\$276.00 (pa)

Papers from a June 2014 conference in Malaysia present the latest findings from industry and academia regarding materials science and engineering, nanotechnology, environmental technologies, process systems engineering, separation technology, and reaction engineering. Papers are organized in sections on advanced materials development, catalysts and inhibitors, reaction engineering, industrial system engineering, separation processes and membranes, thermodynamics, and biomaterials and environmental engineering. Some specific topics investigated include the use of waste coconut oil to produce biodiesel and the hydration behavior of imidazolium-based ILs in water. The book includes b&w photos and images.

TA404 9783038353171

Special Concrete and Composites 2014; select papers

International Conference on Special Concrete and Composites (11th: 2014: Skalsky Dvur, Czech Republic) Edited by Pavel Reiterman (Advanced Materials Research; Volume 1054)

Trans Tech Publications, ©2014 270 p.
\$138.00 (pa)

Civil engineers who specialize in concrete and composites present 50 papers on such topics as using heat pretreatment to reduce the explosive spalling of high performance concrete, mechanical properties and resistance to water ingress of cement concrete made with non-cyclic alkanes, a comparative investigation of some properties related to the durability of cement concretes containing different fly ashes, mechanical and thermal properties of moderate-strength concrete with ceramic powder used as supplementary cementitious material, and mechanical and thermal properties of composites containing waste coir pith.

TA487 9783038351733

Materials Science, Computer and Information Technology; select papers; 6 volume set

International Conference on Materials Science and Information Technology (4th: 2014: Tianjin, China) Edited by S.Z. Cai, Q.F. Zhang, X.P. Xu,

D.H. Hu, and Y.M. Qu (Advanced Materials Research; Volumes 989-994)

Trans Tech Publications, ©2012 5695 p.
\$690.00 (pa)

More than 1,200 papers cover advanced materials science, chemical engineering and processing technologies; applied mechanics, construction, and testing technologies; biological and medical research; resource, energy, and electronic development and environmental engineering; advanced technologies in modeling, simulation, and optimization; computation methods and algorithms and intelligent engineering applications; advanced technologies in mechanical engineering, mechatronics, automation, measurements, control, and manufacturing technology; communication, signal and image processing, and data acquisition and recognition technologies; general principles of information technology, web and networks engineering, information security, electronic engineering, and software application and development; and advanced information and innovation technologies for management, logistics, economics, education, and assessment.

TA654 9780415659420

Maintenance and Safety of Aging Infrastructure

Edited by Dan M. Frangopol and Yiannis Tsompanakis (Structures and Infrastructures Series; Volume 10)

CRC Press, ©2014 743 p. \$179.95

Editors Frangopol and Tsompanakis presents students, researchers, and practitioners with a collection of contributions from an international group of experts that together present the latest research findings in the field of maintenance and safety of aging infrastructure, including advanced computational and experimental techniques in vulnerability and damage assessment, as well as maintenance and retrofitting of buildings, bridges, and other key components of infrastructure. Topics covered include climate adaptation, corrosion, fatigue life, and a great many others. Frangopol is a faculty member of Lehigh University, Pennsylvania. Tsompanakis is a faculty member of the Technical University of Crete, Greece.

TA2020 9781482222050

Plasma Electronics: Applications in Micro-electronic Device Fabrication, 2nd Edition

Toshiaki Makabe and Zoran Lj. Petrovic

CRC Press, ©2015 376 p. \$179.95

In response to the increasingly important role plasmas are playing in technology, electrical engineer Makabe and physicist Petrovic describe and predict the space and time characteristics of low-

temperature plasmas and associated processing intrinsic to specific feed gases. A unifying theme is computer-aided plasma analysis and synthesis, with an emphasis on computational algorithms and techniques. Their topics include phenomenological description of the charged particle transport, the Boltzmann equation and the transport of equations of charged particles, modeling non-equilibrium (low-temperature) plasmas, and inductively coupled plasma. The book was developed from graduate courses.

ENVIRONMENTAL TECHNOLOGY

TD171 9781466588462

Sustainable Practices in Geoenvironmental Engineering, 2nd Edition

Raymond N. Yong, Catherine N. Mulligan, and Masaharu Fukue

CRC Press, ©2015 535 p. \$149.95

Yong, Mulligan, and Fukue present readers with a comprehensive exploration of the technologies that surround geoenvironmental engineering from the perspective of sustainability. The text is organized in thirteen sections devoted to such subjects as geoenvironment management and sustainability, stressors and soil contamination, sustainable water management, industrial ecology and the geoenvironment, stressors and impact management in natural resource extraction, agricultural stressors on the geoenvironment, urbanization and the geoenvironment, and several others. Enhanced features of this second edition include new tools and remediation technologies, approaches and techniques for reaching geoenvironmental sustainability, and a developed examination of in situ and ex situ treatment technologies.

TD367 9781482227130

Air Pollution and Freshwater Ecosystems: Sampling, Analysis, and Quality Assurance

Timothy J. Sullivan, Alan T. Herlihy, and James R. Webb

CRC Press, ©2015 308 p. \$129.95

Air pollution, like sulfur, nitrogen, pesticides and combustion by-products, can affect the surface water of lakes and streams and, from there, affect entire watersheds. The authors of this book draw on their 30 years of experience designing and implementing water quality monitoring programs to create this valuable reference for freshwater ecologists and biogeochemists. They explore study design and techniques for water chemistry field sampling. They also consider laboratory procedures, quality control, data analysis

and how to sample the aquatic biota. Included in the appendix are specific protocols, guidance documents and data entry forms.

MECHANICAL ENGINEERING & MACHINERY

TJ211 9783038352020

Industrial and Service Robotics; select papers

International Conference on Industrial, Service and Humanoid Robotics (13th: 2014: High Tatras, Slovakia) Edited by Mikulas Hajduk and Lucia Kouklova (Applied Mechanics and Materials; Volume 613)

Trans Tech Publications, ©2014 464 p. \$207.00 (pa)

The 63 papers first consider robotic research and applications of robots, then the automation of production processes. The topics include motion coordination of two robots in Cartesian space based on mechanical impedance, observation as a learning method in the simple visual system of vehicle control, materials having a high degree of adhesion for gripping elements designing, the chosen aspects of self-reconfigurable robots, accuracy control in machining low rigidity shafts, and implementing computer systems for supporting the technological preparation of production for technologies of surface processing.

TJ213 9781611973624

Stability, Control, and Computation for Time-Delay Systems: An Eigenvalue-Based Approach, 2nd Edition

Wim Michiels and Silviu-Iulian Niculescu (Advances in Design and Control; 27)

SIAM, ©2014 435 p. \$114.00 (pa)

Michiels and Niculescu analyze stability, robust stability, and the synthesis of controllers in linear time-delay system using the eigenvalue-based approach. Though maintaining generality, they focus on the generally under-studied aspects of sensitivity analysis with respect to delays and other system parameters, using analytical as well as numerical analytic tools, and the design of fixed-order or fixed-structure stabilization and robust controllers. The first edition was written narrowly for the mathematical control community and focused almost exclusively on stability analysis and stabilization --just the first stage of design. In this second edition they enlarge the scope to include the design of robust and optimal controllers, and add a lot of new material on numerical methods to encompass other research communities, particularly the numerical linear algebra and the numerical optimization communi-

ties.

TJ260 9780124172913

Thermal Energy Storage Technologies for Sustainability: Systems Design, Assessment and Applications

S. Kalaiselvam and R. Parameshwaran

Academic Press, ©2014 430 p. \$125.00 (pa)

This volume details sensible, latent, thermochemical, and seasonal thermal energy storage systems that can lead to sustainability and their applications in active and passive systems, carbon-free thermal storage systems, low energy building design, and other areas. It also discusses energy and energy management, types of energy storage for meeting demand side energy requirements, thermal energy storage technologies, nanotechnology in thermal energy storage, systems design, modeling and simulation, assessment, control and optimization, and economic and societal prospects.

TJ853 9783110336023

Optofluidics Systems Technology

Dominik G. Rabus

De Gruyter, ©2014 340 p. \$182.00

Rabus summarizes the field he has been working in for the past decade, which involves polymer photonics, fluidics, and biology systems. He takes a systems approach that highlights the integration of the various disciplines that underlie optofluidic systems, and focuses on future systems at the micrometer and nanometer scale. He narrows his study to polymers, which are favorable substrates for biophotonic devices, due to their biocompatibility, their fabrication flexibility, and their low cost. He covers materials, photonics, fluidics and fluid control systems, biology, sensors for optofluidic systems, and optofluidic system technology.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK1005 9780857092380

Structural Alloys for Power Plants: Operational Challenges and High-Temperature Materials

Edited by Amir Shirzadi and Susan Jackson (Woodhead Publishing Series in Energy; Number 45)

Woodhead Publishing, ©2014 494 p. \$250.00
Regulations requiring reductions in greenhouse gases and the desire for more efficient energy sources have created a need for new gas powered power plant designs. This coupled with the

need to power conventionally powered plants on and off due to the intermittent nature of wind and solar power generation has caused a need for new structural materials to meet the metallurgical stress demands of these new designs. Intended for metallurgists, power plant engineers and designers, this book examines the latest development these metals and composites. The authors look at the specific metallurgical needs of gas and steam turbines as well as nuclear fueled plants and the latest materials developed to meet the stress, corrosion resistance, and radiation protection requirements of these new power plants.

TK2897 9781118237915

Metal Chalcogenide Nanostructures for Renewable Energy Applications

Edited by Ahsanulhaq Qurashi

Scrivener/Wiley, ©2015 305 p. \$195.00

The goal of this book is to present the latest developments from a variety of perspectives from 17 contributors from diverse backgrounds on semiconductor metal chalcogenide nanostructures fabrication for potential renewable energy applications. The book is divided into three parts focused on topics such as greenhouse emissions and the potential impact of materials for alternative energy conversion systems, the comprehensive synthesis of metal chalcogenide nanostructures by various methods, and applications of metal chalcogenides nanostructures in diverse renewable energy conversion devices. Each chapter includes an opening abstract and bibliography.

TK2941 9789814241434

Nanotechnology in Advanced Electrochemical Power Sources

Edited by S.R.S. Prabaharan and M.S. Michael

Pan Stanford Publishing, ©2015 361 p. \$149.95

Engineers and chemists from Asia, Europe, and South Africa present 12 chapters on electrochemical power sources, with a focus on nanotechnology and nanoscale aspects of advanced energy storage devices, such as lithium-ion batteries, lithium-air batteries, and electrochemical supercapacitors. They emphasize fundamental issues related to the device performance of various positive and negative electrode materials and their nanoscale advantages, as well as the fundamentals and processing techniques in terms of the synthesis, characterization, physical and electrochemical properties, and applications of nanoscale materials for advanced electrochemical power sources. They discuss nanomaterials like transition metal oxides, phosphates,

silicates, and conversion electrodes, as well as carbonaceous materials like carbon nanotubes, nanorods, and mesoporous carbons. Distributed by CRC Press.

TK2945 9781608077137

Design and Analysis of large Lithium-Ion Battery Systems

Shriram Santhanagopalan, Kandler Smith, Jeremy Neubauer, Gi-Heon Kim, Matthew Keyser, and Ahmad Pesaran (Power Engineering)

Artech House, ©2015 230 p. \$139.00

Engineers at the National Renewable Energy Laboratory introduce the multiple facets of battery engineering, especially as used in large-scale systems such power grids and electric vehicles. For systems-oriented engineers, they demystify electrochemistry; for electrochemists they address issues of scaling up, including developing model-based design and control platforms; for analysts they explain the basics of lithium-ion batteries and challenges in deploying them. They cover types of batteries, electrical performance, thermal behavior, battery life, battery safety, applications, and system design.

TK5104 9781608077557

Filter Design for Satellite Communications: Helical Resonator Technology

Efstratios Doumanis, George Goussetis, and Savvas Kosmopoulos (Artech House Space Technology and Applications Series)

Artech House, ©2015 203 p. \$149.00

Filters employing helical resonators are a class of distributed filters that offer a trade-off between performance and size/mass that makes them valuable for use in satellite communications, explain Doumanns, Goussetis, and Kosmopoulos. Writing for engineers with a basic knowledge of high frequency electronics, they describe an approach to designing radio frequency and microwave filters for satellite application with an emphasis on helical resonator technology. They cover requirements and constraints for microwave filters for satellite systems, filter synthesis techniques, the analysis and design of helical resonators, synthesizing helical resonator filters, quasi-elliptic helical resonator filters, and helical resonator filters with the capacity to handle high power for space applications.

TK6592 9781466597846

Compressive Sensing for Urban Radar

Edited by Moeness Amin

CRC Press, ©2015 472 p. \$149.95

Exploring some of the subtle issues in compressive sensing for urban radar, electrical engineers

and radar specialists present solutions to many problems that are specific to sensing opaque scenes and targets with obstructed lines of sight. Among the topics are compressive sensing for the radar imaging of underground targets, mitigating wall clutter for the compressive imaging of building interiors, the time-frequency analysis of micro-Doppler signals based on compressive sensing, and the three dimensional imaging of vehicles from sparse apertures in an urban environment.

TK7885 9781118659182

Architectures for Computer Vision: From Algorithm to Chip With Verilog

Hong Jeong

Wiley, ©2014 450 p. \$140.00

Intended for graduate students and computer vision researchers, this book examines 3D vision computer chip architecture. Focusing on the Verilog HDL language, Jeong looks at the algorithms and architectures best suited for 3D computer vision. The author looks at basic vision principles, such as stereo vision and motion tracking, and how they can be best captured using chip architecture. He also describes the latest research in vision systems and the challenges of combining data from different visual sources. The book also includes a website link which includes software and HDL code packages.

MINING ENGINEERING

TN751 9781627080682

Thermal Process Modeling; proceedings

International Conference on Thermal Process Modeling and Computer Simulation (5th: 2014: Orlando, FL) Edited by B. Lynn Ferguson, Robert Goldstein, Scott MacKenzie, and Rozalia Papp
ASM International, ©2014 330 p. \$160.00

The 47 papers look at modeling thermal processes in manufacturing from perspectives of distortion and residual stress, metal processing, phase transformation, induction, properties and data, carburizing, modeling methods, welding, process modeling, quenching, and coatings. The topics include measuring and predicting residual stresses in heat-treated large forgings, modeling induction heat distribution in carbon-fiber-reinforced thermoplastics, computer modeling mechanical properties and microstructure in a quenched steel specimen, the numerical simulation of phase transformation during the hot stamping process, and reducing gear size for compact transmission design by selecting steel grade and heat treatment processes with computer modeling.

CHEMICAL TECHNOLOGY

TP155 9780470343852

Guidelines for Initiating Events and Independent Protection Layers in Layer of Protection Analysis

Edited by Center for Chemical Process Safety

Wiley, ©2015 348 p. \$110.00

Layers of protection analysis is a streamlined tool for analyzing and assessing risk in chemical processing that has become popular since the Center's first book on it in 2001. This book is for practitioners and managers who already understand and apply layers of protection analysis. It clarifies key concepts and reinforces the limitations and requirements of the method, and provides examples of initiating events and independent protection layers, and offers guidance on the activities and documentation needed to achieve and maintain the initiating event frequency and independent protection layer probability of failure on demand values that it suggests.

TP242 9781118877739

Gas Treating: Absorption Theory and Practice

Dag A. Eimer

Wiley, ©2014 410 p. \$150.00

Eimer presents practicing process engineers, chemical engineers, and post-graduate students in the disciplines of process engineering, chemical engineering, and chemistry with a practical introduction to gas treating. The text provides a general introduction to gas treatment, an overview of the chemistry of gas treatment systems, a detailed discussion of the absorption process, and an investigation of the associated possibilities and problems inherent when mass transfer and chemical reaction are combined. Eimer is a faculty member of Tel-Tek and Telemark University College, Norway.

TP245 9781118466292

Iodine Chemistry and Applications

Edited by Tatsuo Kaiho

Wiley, ©2015 636 p. \$195.00

To recognize the bicentennial of iodine being recognized as a distinct element, chemists presents studies on elemental characteristics of iodine, production, the synthesis of iodine compounds, biological applications, industrial applications, bio-inorganic chemistry and environmental chemistry, and radioisotopes of iodine. Among the topics are analytic methods of iodine and iodides, ion chromatography, hypervalent iodine, iodine production from oilfield brine, iodinating

reagents, chemical reactions mediated by metal iodides, synthetic thyroid hormone, iodine deficiency disorders and their correction using iodized salt and/or iodine supplements, iodine in polymer synthesis, iodine in dye-sensitized solar cells, and the atmospheric chemistry of iodine.

TP318 9781482203714

Fuel Production With Heterogeneous Catalysis

Edited by Jacinto Sá

CRC Press, ©2015 306 p. \$179.95

Scientists and engineers describe recent developments in producing fuel with heterogeneous catalysis, and include reaction mechanism schemes, engineering solutions, and perspectives for the field. The material is suitable for graduate and undergraduate students and professionals in fields relating to energy production. Among the topics are solar water splitting using semiconductor systems, methane activation and transformation over nanocatalysts, Fischer-Tropsch: fuel production with cobalt catalysis, biomass to liquid biofuels through heterogeneous catalysis, and the catalytic pyrolysis of lignocellulosic biomass.

TP370 9780124200913

Adapting High Hydrostatic Pressure (HHP) for Food Processing Operations

Tatiana Koutchma (Novel Technologies in the Food Industry)

Academic Press, ©2014 67 p. \$39.95 (pa)

Koutchma provides readers with an in-depth examination of high hydrostatic pressure processing for food operations. She covers the fundamentals of HPP, HPP cycles, HPP microbial effects in foods, commercial applications for HPP, emerging applications for the technology, commercial and pilot equipment, and a regulatory update. Koutchma is a faculty member of the Guelph Food Research Center, Ontario, Canada.

TP815 9783038352389

Eco-Materials Processing and Design XV; select papers

International Symposium on Eco-Materials Processing and Design 15th: 2014: Hanoi, Vietnam) Edited by Banh Tien Long, Hyung Sun Kim, Jian Feng Yang, Tohru Sekino, and Soo Wahn Lee (Materials Science Forum; Volume 804)

Trans Tech Publications, ©2014 325 p.

\$207.00 (pa)

Scientists and engineers in the physical sciences discuss materials for preserving the environment; energy conservation and harvesting; materials cutting and processing technologies for reducing

environmental impact; eco-processing and design for polymers, ceramics, metals, and semiconductors; high-performance materials including nano-materials for the environment, coating, and corrosion; hybrid materials and composites; photocatalysis for a better environment and clean energy; biologically inspired materials for better living and other novel biological materials; light metals and alloys of magnesium, aluminum, titanium, beryllium, and porous materials; and manufacturing and mechanical technology.

TP893 9781439839447

A Novel Green Treatment for Textiles: Plasma Treatment as a Sustainable Technology

Chi-wai Kan (Sustainability: Contributions Through Science and Technology)

CRC Press, ©2015 279 p. \$149.95

Now that plasma equipment and machines are available that operate under atmospheric conditions, says textile chemist Kan, plasma systems can be integrated into the conventional continuous wet processing of textiles to reduce the use of environmentally harmful chemicals to treat textile. He covers textile materials; processes for treating textile fibers; what plasma is; applying plasma in the pretreatment, dyeing, printing, and finishing of textiles; the effect of plasma treatment on the finishing of synthetic fibers; and sustainability and development of plasma treatment in textile wet processing.

TP949 9781119041306

The Chemistry of Printing Inks and Their Electronics and Medical Applications

Johannes Karl Fink

Scrivener/Wiley, ©2015 361 p. \$195.00

Targeting industry engineers and specialists with only a modicum of knowledge of inkjet printing inks but wish to know more, and drawing on the literature of the past decade, Fink focuses on the chemistry of inkjet printing inks --development, uses, testing, and special applications. Nine chapters are: inkjet inks; characterization of printer inks; additives for inks; dyes and pigments; ink types; electronic applications; medical applications; 3-D printing; special aspects.

MANUFACTURES, ARTS & CRAFTS

TS177 9783038352440

Designing of Industrial Facilities and Technologies

World Congress on Industrial Materials Applications, Products, and Technologies (2nd: 2014: Beijing, China) Edited by Dehuai Zeng (Advanced

Materials Research; Volume 1028)
Trans Tech Publications, ©2014 386 p.
\$207.00 (pa)

Zeng presents students, academics, researchers, and professionals in the field with a collection of selected, peer-reviewed papers drawn from research presented at the second World Congress on Industrial Materials Applications, Products, and Technologies, held in July of 2014, in Beijing, China. The papers collected in this volume have been organized into seven chapters, focused on advanced materials, material processing technology, design and manufacturing technologies in mechanical engineering, automation and mechatronics, building materials and construction technology, product design, and agriculture and the food industry.

TS198 9780323264365

Manufacturing Flexible Packaging: Materials, Machinery, and Techniques

Thomas Dunn

William Andrew Publishing, ©2015 288 p.
\$220.00

Dunn, a consultant to producers and users of flexible packaging for food and medical products, outlines the basic processes used to manufacture flexible packaging products, focusing on "fit-to-make" design challenges. He describes the methods and machines used, including the basics of web processes and control systems, rotogravure printing and presses, flexographic printing and presses, adhesive lamination and laminators, extrusion lamination and coating, finishing and slitting, in-line processes, overall equipment efficiency effectiveness, efficiency and cost accounting, preventative maintenance vs. available production time, setup and cleanup vs. scheduled production time, and saleable product vs. product produced; materials (paper, foil, unoriented and oriented plastic films, bulk polyolefin resins, specialty sealant and adhesive resins and additives, barrier resins, inks, overprint varnishes and coatings, adhesives, and primers); and conditioning, intrinsic material properties and secondary quality characteristics.

TS228 9780124201132

Friction Stir Processing for Enhanced Low Temperature Formability

Christopher B. Smith and Rajiv S. Mishra (Friction Stir Welding and Processing)

Academic Press, ©2014 135 p. \$49.95 (pa)

The series is intended to serve engineers and researchers engaged in advanced and innovative manufacturing techniques. Friction stir welding started almost 15 years ago as a generic micro-

structure modification technique, say Smith and Mishra, and research since then related to friction stir processing has shown wide promise as a versatile microstructural modification technique and solid-state manufacturing technology. They cover the concept of friction stir processing for enhanced formability, fundamentals of formability, high structural efficiency design potentials with enhanced formability, a case study of aluminum 5083-H116 alloy, and examples of enhanced formability of high-strength aluminum alloys.

TS513 9781628413663

Optical Specification, Fabrication, and Testing

Jim Schwiegerling

SPIE, ©2014 203 p. \$55.00 (pa)

This volume brings together the topics of geometrical optics, interference and diffraction, and aberrations to illustrate the development of an optical system from the initial layout, to design and aberration analysis, to fabrication, testing, and verification. It covers the properties of optical systems, optical quality metrics, optical surfaces and their fabrication, non-interferometric testing, basic interferometry and optical testing, and more specialized topics like fitting Zernike polynomials, representing aspheric surfaces with the Forbes Q polynomials, and testing the Shack-Hartmann wavefront sensor.

TS1449 9781845691806

High Performance Textiles and Their Applications

Edited by Carl A. Lawrence (Woodhead Publishing Series in Textiles; Number 153)

Woodhead Publishing, ©2014 437 p. \$225.00

This volume is a part of the Woodhead Publishing Series in Textiles, which encompasses an extensive list of over 150 titles. This particular text begins with an introductory chapter on various methods used for modeling the geometry, structure, and properties of many different textile materials and continues through chapters on surface treatments for high-performance textiles, their use for protective clothing for firefighters and infection control, textiles for wound care, industrial filtration, geotechnical engineering, and more. Each chapter includes an opening abstract with keywords, as well as a bibliography. The book also includes sources for further information and advice.

**PUBLISHING, LIBRARY SCIENCE,
BIBLIOGRAPHY**

Z552 9781782544180

Harmonising Copyright Law and Dealing With Dissonance: A Framework for Convergence of US and EU Law

Sheldon W. Halpern and Philip Johnson
Edward Elgar, ©2014 195 p. \$110.00
Halpern and Johnson present intellectual property scholars, legal practitioners with internationally-oriented practices, students, academics, publishing and legal researchers, and individuals involved in the ongoing efforts of the WIPO and WTO with a study of the constitutional, institutional, and cultural barriers to the harmonization of copyright laws between the EU and the U.S. Their text is organized in five chapters, covering harmony, policy, and power, minimum standards and international codes, U.S. constitutional constraints on the harmonization of copyright law, the legislative competence of the EU, and a framework for harmonization. Sheldon W. Halpern is a faculty member of The Ohio State University. Phillip Johnson is a faculty member of Cardiff University, UK.

Z669 9780838987360

Handbook of Academic Writing for Librarians, Revised Edition

Christopher V. Hollister
Assoc. of College & Research Libraries, ©2014
250 p. \$56.00 (pa)
The goal of this handbook is to assist library and information science professionals by serving as a reference for the development and publication of professional literature. This text will also serve useful for students of library and information science in writing academic papers and preparing for careers which require aspects of professional writing. The authors seek to inspire and aid in the development of academic writing ideas, improve writing skills, promote the contribution of innovative ideas to professional literature, guide the reader in pursuit of fulfilling writing opportunities, inform the identification of publishing outlets, and aid in the understanding and appreciation of fundamental and emerging concepts.

Z692 9788170007197

Digital Libraries, E-Resources and E-Publishing; 2 volume set

Edited by Santosh Dnyanobarao Kadam and Dharmaraj Kalyanrao Veer
Ess Ess Publications, ©2014 602 p. \$139.00
For library science students and librarians, this

two-volume set contains 69 contributions from librarians affiliated with academic and other institutions in India. The articles present research projects, case studies, and reviews of a wide range of topics related to digital libraries, particularly with regard to the Indian context. Coverage begins with the needs, trends, and development of digital libraries as well as best practices for e-resource management. Subsequent articles address professional development, knowledge management, and library automation and services. Distributed in the US is by ISBS.

Z711 9781843347392

After the Book: Information Services for the Twenty-First Century

George Stachokas (Chandos: Information Professional Series)
Chandos Publishing, ©2014 210 p. \$80.00 (pa)
Stachokas presents students, academics, researchers, and library professionals with an depth look at the potential future of libraries, following the conversion to digital modes of storing and accessing information. The author covers the inherent challenge of electronic resources, the challenges of the coming paradigm shift, redefining the role of librarians, reorganizing libraries, adapting to scarcity, and the digital divide over eight chapters. George Stachokas is a former faculty member of Purdue University, Indiana State University and the consortium Academic Libraries of Indiana.

Z716 9781610695541

Make it Here: Inciting Creativity and Innovation in Your Library

Matthew Hamilton and Dara Hanke Schmidt
Libraries Unlimited, ©2015 195 p. \$45.00 (pa)
Hamilton, an information technology manager for a public library, and Schmidt, a library director, explain how to enhance creativity and innovation in the library using makerspaces. They discuss the rationale for doing so, in response to greater collaboration and creativity in schools and the new skills required in job markets; the rise of the "Maker" movement and makerspaces for crafting and making items by hand; creating a makerspace; working with staff; planning; the similarities and differences between media labs and traditional makerspaces and how libraries are blending the two; funding and support; launching a makerspace; working with community experts, training staff, and creating policies; programming, with sample programs for 3D objects, computers, photography, sewing, and other crafts; and building on success. Profiles of libraries with Maker programs are provided throughout.

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