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SciTech News Volume 71, No. 2 (2017)

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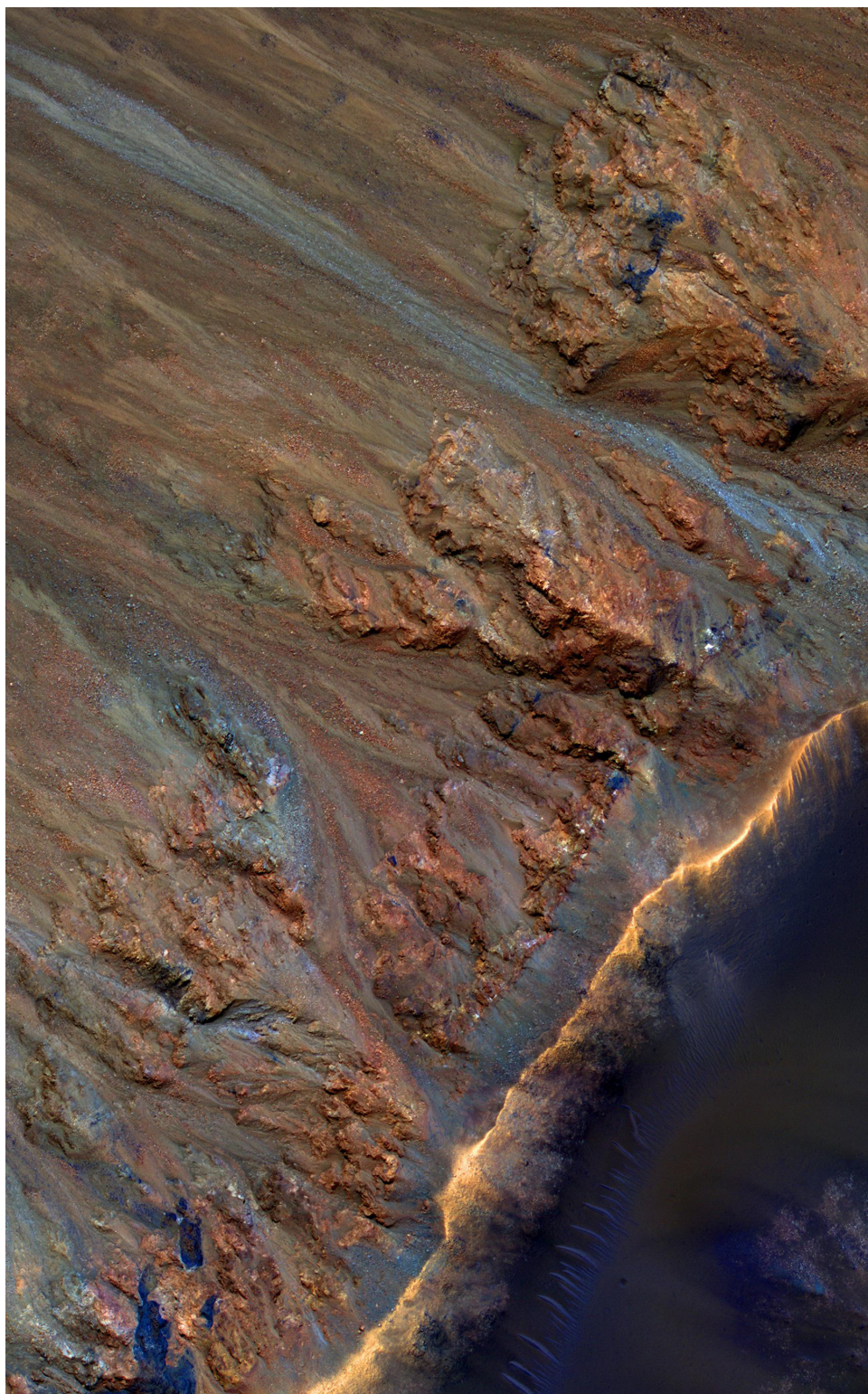
(2017) "SciTech News Volume 71, No. 2 (2017)," *Sci-Tech News*: Vol. 71 : Iss. 2 , Article 1.

Available at: <http://jdc.jefferson.edu/scitechnews/vol71/iss2/1>

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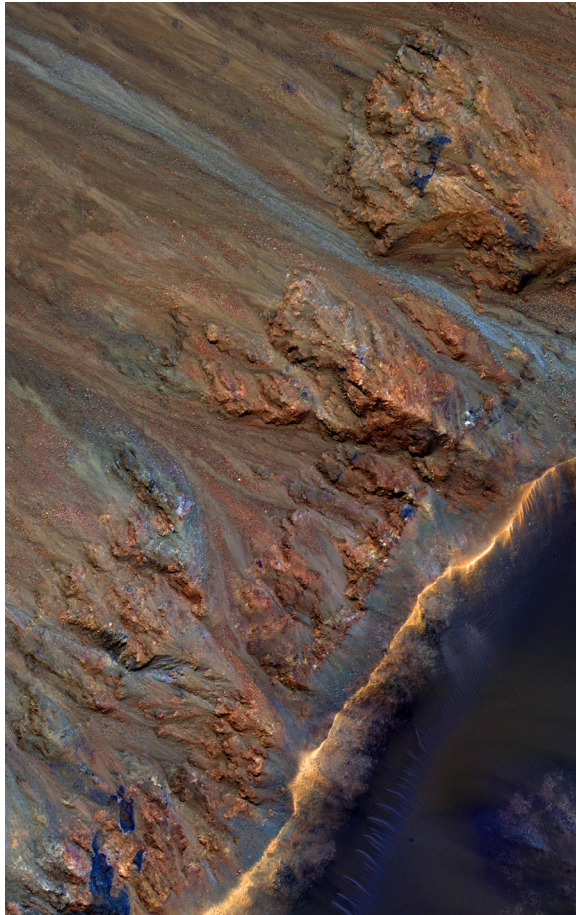
SciTech News

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 71, Number 2 (2017)
ISSN 0036-8059

SciTech News



On the Cover

Colorful Equatorial Gullies in Krupac Crater

Krupac is a relatively young impact crater, but exposes ancient bedrock; it also hosts some of the most impressive recurring slope lineae RSL on equatorial Mars outside of Valles Marineris, as seen by NASA Mars Reconnaissance Orbiter.

Photo and Caption Credit: NASA/JPL-Caltech/Univ. of Arizona. Available for public use at <https://images.nasa.gov/#/details-PIA21605.html>

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Copy Deadline

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

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Volume 71, Number 2 (2017)
ISSN 0036-8059

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

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

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

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

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From the Editor

Christine Malinowski



Welcome to the June (Conference) issue of *SciTech News*! This issue features a breakdown of division and section conference offerings, award recipient announcements and tips and tricks for making the most of your time in Phoenix (don't forget your sun hats).

For those making the trek to Phoenix, I look forward to catching up with you. And for those who are unable to make this year's Annual Meeting, stay tuned for the next (post-conference) issue that will feature conference reports, pictures, and more.

Finally, have thoughts on how to make *SciTech News* better or want to help make this publication happen? We're still looking for an Assistant Editor! Please do ping me by email (cmalinowski@post.harvard.edu) or find me at the conference.

Until Phoenix!
Chris Malinowski

Ways to contribute to *SciTech News*:

- **Become the Assistant Editor!** Have experience laying out content in Adobe InDesign or a similar program? Want to help shape and evolve *SciTech News*? This could be the position for you!
- **Give us your updates!** Send us information about your awards, promotions, professional publications and presentations or other recognition. We'll publish your activities in *SciTech News*, bringing news of our members' accomplishments to the wider SLA and library communities.
- **Write an article!** If you have a research project, a new service in your library, a new instructional method, or other information you'd like to share with your colleagues, please consider contributing an article.

If any of these opportunities appeal to you, contact the Editor, Christine Malinowski, cmalinowski@post.harvard.edu with questions and/or content.

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News from the Science-Technology Division

Science-Technology Division Susan Wainscott, 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.'



Conference time is almost here! Conference provides a unique opportunity to meet colleagues working in a specialty subject area for a wide variety of employers around the globe, and learn what vendors are offering to meet patron needs. If you are not yet registered, or are planning your conference schedule, consider these Science-Technology Division (DST) events:

SciTech Division No-Host Dinner

Saturday June 17, 7-10PM

This social event is our Newcomers' Dinner, location to be announced in the conference planner application soon. Please contact Bernice Koh via email or the SLA Connect system to sign up. If you are new to the Division or this is your first SLA Conference, please let Bernice know so that we can welcome you and buy your dinner. Any other DST members may attend, and please be prepared to chip in for your dinner costs.

Infographics for Publication: Taking Data Viz Further

Sunday, June 18, 4-5:30PM

James Manasco will join Mary Frances Lembo for the latest installment of their SciTech 101 programs. This presentation will assume attendees have basic familiarity with data visualisation and infographics concepts.

Interweaving ACRL's Threshold Concepts into an Information Literacy Program

Monday, June 19, 3:30-5PM

This master class panel discussion will explore how threshold concepts have influenced the work of science and engineering librarians in academic and special library settings. Lori Townsend, Engineering Librarian & Learning Services Coordinator, University of New Mexico Libraries will present and moderate a panel that will include Korey

Brunetti, Medical Librarian for the Desert Regional Medical Center, and Rebecca Kuglitsch, Head of L.H. Gemmill Library of Engineering, Mathematics & Physics at the University of Colorado Boulder.

All Sciences and Engineering Poster Session & Awards Reception

Monday, June 19, 7-9PM

Co-hosted with the Chemistry, Engineering, and Physics Astronomy & Math (PAM) Divisions, the reception is a fantastic venue for networking and learning. Join us to meet our fabulous award winners and say congratulations! DST will be presenting three of our four annual awards during the reception, as well as several appreciation awards to our division volunteers.

The Bonnie Hilditch International Award is presented by the Engineering and Science-Technology Divisions to a librarian outside of the United States and Canada to help defray the cost of attending conference. This year's winner is Randolph Mariano, who has also received the 2014 SLA Asian Chapter Early Career Award, and has contributed to the Chapter's newsletter and to several conferences.

The Diane K. Foster International Student Travel Award is presented to a library and information sciences student or early career librarian in a SLA chapter outside of United States and Canada. This award recognises the potential of the awardee and seeks to defray the cost of attending conference. The 2017 Foster award is presented by the Asian Chapter and the Science-Technology Division to Jayamanne Mohottige Shalani Dilinika, who is currently working on her MSSc. in Library and Information Science at the University of Kelaniya, Sri Lanka.

We also offer a travel award for library school students or first time conference attendees in honor of S. Kirk Cabeen, and this year our winner is Becca Greenstein. She is currently an intern at the EPA Library in Research Triangle Park and an MSLS student at UNC-Chapel Hill (anticipated graduation May 2017) where she is very active in her local SLA Student Chapter.

As these are each annual awards, it is less than a year from the 2018 deadlines to apply or nominate someone for these awards! Please check out the descriptions of our awards at <http://scitech.sla.org/about-the-division/awards/>.

Another reason to attend the All Sciences Poster Session & Awards Reception is, of course, POSTERS! Come to learn what our colleagues are researching and implementing at their home institutions. We will continue our tradition of posting posters provided by the authors, this year in the SLA Connect Library for the Science-Technology Open Community. The community is open to any SLA member who requests – join and check us out, and please also consider joining our

division if you aren't already a member.

Also, this year brings a new event for many SLA units - the Main Street SLA section of the INFO-EXPO. Stop by our kiosk to meet members of DST, pick up a Sci-Tech pocket program, learn about leadership and other volunteer opportunities, and have a bit of Sci-Tech fun.

Finally, I thank my fellow DST volunteers who make all of this possible! In particular, Bernice Koh for organising the newcomers' dinner, Bill Jacobs for coordinating the poster session proposals review, Janet Hughes for her work on the awards committee, and Beth Thomsett-Scott for all of the work that goes into planning and advocating for our conference programming. Thanks also to Vanessa Eyer who will serve as our 2018 Conference Planner. I also thank Helen Josephine, our Vendor Relations chair, for maintaining strong partnerships with our award sponsors during this year's change in conference program sponsorships. Also, thank you to Salek Chand, our Treasurer, for helping with the necessary paperwork to track the revenue and expenses related to conference.

Science-Technology Division New Members

Submitted by Bernice Koh, Membership Committee Chair, Science-Technology Division

The Science-Technology Division welcomes its new members from February 3 - May 2, 2017:

Ted Bazemore
Conyers, GA
USA

Craig Griffith
Berkeley, CA
USA

Ruby Moran
Pico Rivera, CA
USA

Barry Brager
Atlanta, GA
USA

Marguerite Hess
Albuquerque, NM
USA

Nina Smith
Ashburn, VA
USA

Victoria Castaneda
West Covina, CA
USA

Camille Mathieu
San Gabriel, CA
USA

Dr. Zoe Unno
Los Angeles, CA
USA

Carly Greenberg
San Francisco, CA
USA

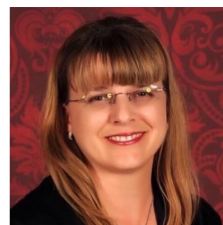
Barbara Wetzel
Richland, WA
USA

News from the Chemistry Division

Chemistry Division

Dawn French, 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.



Hi, Everyone!

We're really close to SLA 2017 now. Below is our schedule of conference events. Please check the Chemistry Division's website for updates and further details. Our Board Meeting and Annual Business Meeting, usually held at the conference, will be held virtually before the conference – please stay tuned for details. Visit the Chemistry Division Website at: <http://chemistry.sla.org/> for more information.

Monday, June 19, 2017

- *Introduction to Data Management: History & Basics*
9:00 AM - 10:00 AM
- *DCHE Academic/Corporate Roundtable*
3:30 PM - 5:00 PM
- *All Sciences Poster Session & Awards Reception*
7:00 PM - 9:00 PM

Tuesday, June 20, 2017

- *Journal Collection Assessment: Verifiable Tips & Tricks to Make Cost Effective Decisions (Quick Take)*
9:00 AM - 9:20 AM
- *Today's Resources in Materials Science*
9:00 AM - 10:00 AM
- *DCHE Vendor Update*
10:15:00 AM - 11:30 AM
- *Open Science Framework*
1:30 PM - 2:30 PM

Saturday, June 17, 2017

- *Chemical Information Sources, Requests & Reference*
1:00 PM - 5:00 PM
- *Chemistry Division No-Host Dinner*
7:00 PM - 10:00 PM
RSVP by email to dawn.french@cristal.com by May 26th

Sunday, June 18, 2017

- *Chemical Formulas & Names in Patent Literature: How to Find, Get & Use*
4:00 PM - 5:30 PM

DCHE Welcomes New Members

*Submitted by Kevin Manning, DCHE Membership Chair 2017
(Joining dates between March - May 2017)*

Helen Yu
Allergan plc

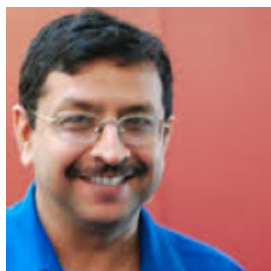
News from the Engineering Division

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.

The Engineering Division Executive and Advisory Board is pleased to announce our 2017 award winners. Awards will be presented at the Engineering Division Breakfast & Awards event at the SLA Conference in Phoenix, AZ, on Sunday, June 18th.

SLA Engineering Librarian of the Year Award, sponsored by I H S – Jay Bhatt

Jay Bhatt has been the Liaison Librarian for Engineering at Drexel University for 17 years. He has three master's degrees from Drexel University, including an M.S. in Library and Information Science, an M.S. in Instructional Design and an M.S. in Electrical and Computer Engineering. He also earned an M.S. in Education from the University of Pennsylvania.



As the Liaison Librarian for Engineering, Jay is responsible for building library collections in engineering subject areas, as well as outreach and teaching information and research skills to faculty and students in Drexel's College of Engineering and College of Biomedical Engineering. He provides individual and small group consultations, instructional sessions and workshops, and online research support for students in on-campus and distance-learning programs.

Jay is actively involved with the Engineering Libraries Division of the American Society for Engineering Education, and he is a member of the Asian Chapter of the Special Libraries Association (SLA) and the Engineering and the Science & Technology Divisions of the SLA. He is also a member of the local SLA Philadelphia Chapter. He is extremely passionate about experimenting with innovative applications of emerging technologies to enhance information literacy among fac-

ulty and students. He has published and presented papers extensively in the area of information literacy for engineering students. He particularly loves mentoring and working directly with students, and he believes that the best learning occurs when it involves the mutual sharing of ideas, knowledge, and experiences.

Most recently, Jay partnered with a team of Drexel University engineering students to co-create the Engineering Academic Challenge, an online research game based on transdisciplinary grand challenges of civilization that has reached thousands in hundreds of universities worldwide.

Jay received the Homer I. Bernhardt Distinguished Service Award from the Engineering Libraries Division of the American Society for Engineering Education in 2010. In 2016, he was nominated for Drexel University's Presidential Award for Excellence for Professional Staff. He received the outstanding staff award at the 2016 Graduate Student Association Awards from the Graduate College at Drexel University and the Exceptional Service Award from Drexel University Libraries in 2014. He was awarded the Learning Partner Award from the School of Biomedical Engineering, Science and Health Systems at Drexel University in 2014. In 2013, he received the Outstanding Staff Mentor Award from the Graduate Student Association of Drexel University. He received IEEE's mentorship award and a Certificate of Appreciation in recognition of outstanding leadership as the Drexel University IEEE Graduate Students Forum Partnership Coordinator and Student Branch Liaison 2006-2007. In 2003, he received Drexel University's Harold Myers Distinguished Service Award.

Professional specialties and areas of interest include: Engineering Information, Teaching Information Seeking Skills, Collection Development and Management, Outreach to

Faculty and Students, Mentoring, and Data Information Literacy.

Personal interests: Jay has a lifelong passion for trains and is a member of the Indian Railways Fan Club. He loves to read and write poetry, including a Gujarati language blog, bansinaad, which includes articles and poems. In his spare time, Jay enjoys researching new initiatives that highlight U.S./India/global collaborations in areas such as engineering education and libraries.

IEEE Continuing Education Travel Award – Kristen Petersheim

Kristin Petersheim has been an Associate Technical Information Specialist in the Cat-



erpillar Technical Information Center (TIC) since 2015, where she currently acts as Document Delivery and Acquisitions Librarian, and Outreach and Instruction Librarian. Petersheim's first experience working in a library happened by

chance while she was living in Pietermaritzburg, South Africa where she volunteered in a seminary library. She caught the service-oriented spirit of the profession while helping masters and doctoral students develop search skills. She also volunteered part-time for the Pietermaritzburg Association for Community Social Action, which was working to archive Apartheid-era social rights documents in cooperation with the University of Kwa-Zulu Natal. Together these experiences reified the importance of the information profession and lead to Petersheim's decision to pursue a career in library science.

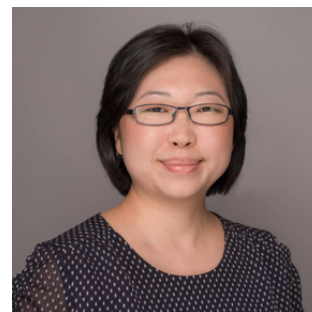
While a graduate student at the University of Illinois at Urbana Champaign, Petersheim held two graduate assistant positions in special libraries; she managed budgets and statistical reporting at the Illinois Fire Service Institute Library and worked as the

sole librarian at the Asian Educational Media Service. Also during her graduate studies, Petersheim was appointed the first Research Coordinator for Business Intelligence Group, and led a team of 10 MLIS students in completing more than 30 consulting projects over the course of a semester. She won the 2015 Library School Alumni Association Student Award in recognition of her efforts during her graduate studies.

In her current role, Petersheim is working to better understand information usage habits of engineers by conducting a survey with her peers at Caterpillar, in conjunction with faculty librarians at Purdue University. Earlier this year she implemented a system to create custom research guides and content for library users. She is now working to execute a visiting librarian program, so that Technical Information Center librarians can be more accessible to engineers in various Caterpillar locations.

SPIE Digital Library Student Travel Stipend Award – Erica Sato

After graduating from high school, I decided to pursue an undergraduate degree in Library Science at São Paulo University (USP). I came from a librarian family: my aunt was a librarian, my cousin was a library assistant, my father's cousin is a librarian, and I have librarian relatives in my husband's family!



During my undergraduate studies, I completed an exchange program in Spain as an Erasmus Mundus student at Universidad Carlos III de Madrid (UC3M). I had the opportunity to take classes that were not offered in Brazil such as "Business Information."

In 2010, I started my career in the library field, I was a librarian at USP, and since then I never stopped to work and to continue my studies in Library Science. In 2011, I started my first graduate degree in Libraries and

Documental Heritage. In 2012, I decided to pursue a second graduate degree in Libraries and Digital Information Services at UC3M. Since August 2014, I've been working as a library consultant in Washington D.C.; I've decided to apply for the Master of Information at Rutgers University and pursue my degree in Technology, Information and

Management concentration.

I love to learn and speak languages: I speak English, Spanish, Portuguese, and I am learning French. Last year, I adopted two cats from City Dogs Rescue and City Kitties, and I have been volunteering and performing home visits in possible adopters' houses.

News from the Aerospace Section

Aerospace Section

Barbara Williams, 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.



SLA 2017 Annual, which is from June 16-20th, is drawing near, and I for one am looking forward to traveling to Phoenix and being able to see majestic mountains on the horizon.

I encourage those of you who are attending the Annual SLA Conference in Phoenix Arizona to sign up for the Engineering Division Breakfast and Business Meeting. The George Mandel Memorial Award (GMMA) will be presented to Betty Edwards during the business section of the meeting. The awards event honoring the memory of George Mandel is scheduled for Sunday, June 18th from 7:15 am to 8:45 am. This is a ticketed event, so reserve your ticket now at a cost of \$20.00.

For those of you unfamiliar with the award's namesake, I have included a brief history of the GMMA. The Award was started in 1989 by the Aerospace Section of the Engineering Division in memory of George Mandel, who passed away on July 16, 1989. Mr. Mandel was a member of the aerospace industry library community for 30 years. At the time of his death in 1989, he was the Chief of the Technical Information Services Division at the NASA Lewis Research Center. He served as Chair of the Aerospace Division from 1977-78. This award was established to preserve the goals of the Aerospace Section and to keep alive George's belief that participating in professional organizations is essen-



Mr. Mandel and his wife, Millie

tial for an individual's growth and development.

Mr. Mandel was also the driving force behind the compilation and publishing of the "Criss-cross directory of NASA "N" numbers and DOD "AD" numbers. To my dismay I discovered that this resource has not been digitized. Over the next month, I intend to reach out to see if others are interested in gathering finding aids created by SLA Aerospace section members, and once authorship has been established, advocating for the digitalization of those items, so stay tuned.

On Monday, June 19, 2017 from 9:00 am-10:00 am the Aerospace Section is co-sponsoring with the Military and Government Information Divisions a session called, Unlocking Government Information: Tips for Access to Restricted Databases. This interactive discussion will explain how institutions with government contracts can legally access NTRS Registered (NASA Technical Reports Server Registered) and DTIC UL (Defense Technical Information Center Unclassified Limited), two restricted government databases. Participants will leave the session with knowledge of the following: the difference between the public and restricted NTRS and DTIC databases, and how to acquire authorization to NTRS Registered and DTIC UL. As well as clarification of the governance of these restricted databases.

Please consider volunteering to serve as the Aerospace Section Chair-elect for 2018, it is never too early to put your name forward, feel free to talk with me or Teresa Powell or any other past Chair. The 2018 Aerospace Chair-elect will preside over the 60th anniversary of the Aerospace Section. The Aerospace Division was organized in 1959 in At-

lantic City, NJ and became the Aerospace Section in 1963 and received full division status in 1965. This upcoming anniversary might be a good time to update our history, which was last updated by Scott Brackett the then Division Archivist in 1994.

Conference attendees remember to bring your sunbrella or your big old floppy wide brim hat, safe travels, and looking forward to seeing old friends and meeting new ones.

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

ABCD Section

Gwen (Guiyun) Wang, 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.



Dear ABCD Section members and all *SciTech News* readers,

SLA 2017 Conference is right around the corner. I hope you all are doing well, and you are as excited as I am! As always, conference is a great way to expand our knowledge and improve professional skillsets. More importantly, the in-person conference provides unique networking opportunities to meet some new friends, put a name to a face for those we only “met” via webinar, teleconference or other social media, catch up with some old friends and acquaintances, ask questions and watch demos on innovative technologies and products at the INFO-EXPO, celebrate and congratulate the recipients of the award winners for their accomplishments, and countless more take-aways!

While you plan your 2017 SLA conference schedule, I invite you to join the ABCD Section’s co-host tour of the Frank Lloyd Wright’s Taliesin West. This ticketed event will take place on Sat., June 17th between 8:00 AM - 12:00 PM. I would like to thank Becca Smith, the 2017 Past-Chair of ABCD Section who has been working diligently to plan the tour. Be sure not to miss out this amazing event! Here is the detailed info about the tour:

Tour of Frank Lloyd Wright’s Taliesin West

Saturday, June 17, 2017, 8:00AM-12:00PM
Frank Lloyd Wright’s talent for creatively linking indoor and outdoor spaces is on display in this 90-minute tour highlighting the dramatic beauty of Taliesin West’s landscaped grounds and desert masonry structures. The tour will include the Cabaret Theater, Kiva, and Wright’s private office plus special trips

into the private quarters and living room, the gracious Taliesin West “Garden Room”, and the drafting studio.

Contact Becca Smith at bsmith@wje.com or 816-803-3484

Host: DENG, Architecture, Building Engineering, Construction and Design Section
Co-Host: DMAH (Museum, Arts & Humanities)

Location: Taliesin West, 12345 N. Taliesin Drive, Scottsdale AZ, 85258

Ticketed Event: \$42.00

In addition to registering for the fascinating tour of the Frank Lloyd Wright’s Taliesin West, I encourage you to check out the following sessions and events that are either hosted or co-hosted by the Engineering Division. Make the most out of the SLA Conference by getting more involved and being more engaged!

Engineering Division Board Meeting

Saturday, June 17, 2017, 7:00-8:00PM

Engineering Division elected officers and committee chairs report on their areas of responsibility and discuss business. All Division members are welcome to attend.

Location: Sheraton Grand

Engineering Division Breakfast & Awards

Sunday, June 18, 2017, 7:15am- 8:45am

Kick off the conference by joining fellow Engineering Division members for breakfast. This event will feature the presentation of Division awards. Join us in welcoming new members and reconnecting with returning members.

Location: Phoenix Convention Center

Ticketed Event: \$20.00

Connected Vehicles – The Future of Transportation

Sunday, June 18, 2017, 4:00-5:30PM

Connected/Automated vehicles are an emerging technology that has the potential to revolutionize the transportation system. This session features a panel discussion made up of leading researchers from academic institutions and the automotive industry.

Location: Phoenix Convention Center

Host: DTRN (Transportation)

Co-Host: DENG

Unlocking Government Information: Tips for Access to Restricted Databases

Monday, June 19, 2017, 9:00-10:00AM

This interactive discussion will explain how institutions with government contracts can legally access NTRS Registered (NASA Technical Reports Server Registered) and DTIC UL (Defense Technical Information Center Unclassified Limited), two restricted government databases. In addition, information will be shared outlining the legal process for students who are non-citizens to procure access to those resources and/or institutions as well. Participants will leave the session with knowledge of the following: the difference between the public and restricted NTRS and DTIC databases; how to acquire authorization to NTRS Registered and DTIC UL; who their regional Government Approving Official is; ways to obtain the DoD-required background check called National Agency Check with Inquiries (NACI).

Location: Phoenix Convention Center

Host: DENG Aerospace Section

Co-hosts: DGI (Government Information) and DMIL (Military)

Standards Update

Monday, June 19, 2017, 3:30-5:00PM

Standards are the backbone of engineering and providing access to them is a core function of information professionals. This session is the place to learn what is new, straight from the source. Ask questions and provide feedback while Standards Development Or-

ganizations (SDOs) are all in the same room! In this lightning round of short talks you will learn about the latest innovations from representatives of many SDOs and content providers.

Location: Phoenix Convention Center

Host: DENG

Co-host: DTRN (Transportation)

All Sciences and Engineering Poster Session & Awards Reception

Monday, June 19, 2017, 7:00-9:00PM

Location: Sheraton Grand

Linked Data: What's New with Knowledge Organization on the Web (MASTER CLASS)

Tuesday, June 20, 2017, 10:15-11:30AM

Linked Data is a developing area within libraries and archives. Using available resources to uncover deeper meanings in content is becoming vital to the design and implementation of discovery services. According to Bizer, Heath, and Berners-Lee (2009), the term Linked Data refers to best practices for publishing and connecting structured data on the web. This session will highlight best practices using cases such as searching across dispersed databases in one query, semantic knowledge retrieval, and helping various data sources work together. Discussion will center on both metadata linked data and terminological linked data. This workshop aims to describe outcomes and benefits of the process and offer insights into leading the development of a new Linked Data initiative. Learn how to unlock linked data in your organization.

Host: DENG

Co-host: DTAX (Taxonomy)

I look forward to seeing many of you in Phoenix!

Gwen (Guiyun) Wang

SLA Architecture, Building Engineering, Construction and Design (ABCD) Section Chair, 2017



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OCEANOGRAPHY

GC10 9781498731546

Geoinformatics for Marine and Coastal Management

Edited by Darius Bartlett and Louis Celliers
CRC Press, ©2017 413 p. \$139.95

This work for students, coastal managers, and policy makers explains how new technologies for geospatial data and spatial data infrastructure are being used in marine environments and coastal management. Highlighting the many stakeholders with marine and coastal interests (scientists, managers, fishermen, oil companies, tourism, and those for whom the sea is part of their culture or heritage), the book advocates an interdisciplinary, evidence-based approach to the management of oceans and coasts. The book begins with an overview chapter on geospatial coastal and marine management, followed by global cases illustrating the diversity of geoinformatics as a discipline, describing types of technology now being used to collect and process data, such as GIS, remote sensing, drones, and laser scanners. Some specific subjects examined include applied marine management with volunteered geographic information, geoinformatics for law enforcement at sea, and geospatial technologies and indigenous knowledge systems. The book contains many color maps and charts.

SCIENCE (GENERAL)

Q223 9789813144231

Communicating Science: A Practical Guide for Engineers and Physical Scientists

Raymond Boxman and Edith Boxman

World Scientific, ©2017 276 p. \$32.00 (pa)
The Boxmans teach language and information organization skills, primarily to students working on or about to embark on their dissertation, but also to students writing other papers and to scientists and engineers needing to write or speak in a number of contexts. They cover research reports: journal papers, theses, and internal reports; submitting a paper and the review process; conference presentations: lectures and posters; research proposals; business plans;

patents; reports in the popular media; correspondence and job hunting; and writing well: organization, grammar, and style.

Q225 9780674059696

Making Sense of Science: Separating Substance From Spin

Cornelia Dean

Belknap Press, ©2017 281 p. \$19.95

Dean, a science journalist, supplies non-scientists with tools to evaluate scientific claims and controversies. She uses examples from her experiences as a journalist to illustrate the thinking involved in the newsroom when deciding whether a finding is newsworthy, trustworthy, and important, describing thinking problems people have, such as ignorance, irrational patterns of thinking, the inability to think probabilistically, and erroneous ideas about risk; what science is, how the scientific method works, the use of computer models in research, and peer review; what happens when science goes wrong, due to scientist misconduct, problems in court, and problems in journalism; how the research enterprise is financed and how money influences things like health care and food; and the influence of politics on science, particularly in the environment and with arguments over religion. Belknap Press is an imprint of Harvard U. Press.

Q360 9789813109025

Information and Complexity

Edited by Mark Burgin and Cristian S. Calude
(World Scientific Series in Information Studies; Volume 6)

World Scientific, ©2017 389 p. \$154.00
Researchers in a wide range of fields examine classical information and complexity, quantum information and complexity, and complexity and information applications. Their topics include the "paradox" of computability and a recursive relative version of the Busy Beaver Function, Planckian information (Ip): a measure of the order in complex systems, quantum computational complexity in curved spacetime, an upper bound on the asymptotic complexity of global optimization of smooth univariate functions, and an informational perspective on quantum Bayesianism and the origins of life.

MATH, COMPUTERS

QA29 9781107010833

The Once and Future Turing: Computing the World

Edited by S. Barry Cooper and Andrew Hodges
Cambridge University Press, ©2016 379 p.

\$39.99

Scientists from the US and Europe present 15 essays on scientific work based on the contributions of Alan Turing (1912-1954). They discuss computability in mathematics and the mathematics of universality, the theory of types, analytic number theory, cryptology, and enigmatic statistics; the computation of processes, including Turing's neural models; mathematical morphogenetic research; the relationship of computability to the physical world and its quantum-mechanical nature; and infinitary computation and the physics of the mind.

QA169 9781470424602

Categorification and Higher Representation Theory

Edited by Anna Beliakova and Aaron D. Lauda
(Contemporary Mathematics; Volume 683)

American Mathematical Society, ©2017 361 p.
\$111.00 (pa)

Mathematicians exhibit some of the current trends in categorified representation theory, or higher representation theory, and the diverse techniques they and others employ. Their topics include rational Cherednik algebras and categorification, categorical actions on unipotent representations of finite classical groups, categorical actions and crystals, on the 2-linearity of the free group, the Blanchet-Khovanov algebras, categorification at prime roots of unity and hopfological finiteness, folding with Soergel bimodules, and the p-canonical basis for Hecke algebras.

QA182 9783037191712

Representation Theory: Current Trends and Perspectives

Edited by Henning Krause, Peter Littlemann, Gunter Malle, Karl-Hermann Neeb, and Christoph Schweigert (EMS Series of Congress Reports)

European Mathematical Soc., ©2017 763 p.
\$188.00

Reporting the results of a seven-year German research program, mathematicians look at current work in representation theory with a special emphasis on categorification and geometrization. Among their topics are spherical varieties and perspectives in representation theory, on toric degenerations of flag varieties, derived cat-

egories of quasi-hereditary algebras and their derived composition series, bounded and semi-bounded representations of infinite dimensional Lie groups, and geometric invariant theory for principal three-dimensional subgroups acting on flag varieties. Distributed in the US by the American Mathematical Society.

QA188 9781498777773

Matrix Inequalities for Iterative Systems

Hanjo Täubig

CRC Press, ©2017 202 p. \$179.95

Hanjo Täubig presents readers with a comprehensive investigation of inequalities of weighted entry sums of matrix powers and their potential applications in chemistry, physics, biology, computer science, and mathematics. The author covers notation and basic facts regarding inequalities, motivation, diagonalization and decomposition, restricted graph classes, walks and alternating walks in directed graphs, powers of row and column sums, and a wide variety of other related subjects. Hanjo Täubig is a faculty member of Technische Universität München in Germany.

QA268 9781470428105

Arithmetic, Geometry, Cryptography and Coding Theory: 15th International Conference on Arithmetic, Geometry, Cryptography and Coding Theory

Edited by Alp Bassa, Alain Couvreur, and David Kohel (Contemporary Mathematics; Volume 686)

American Mathematical Society, ©2017 199 p.
\$111.00 (pa)

Nearly 100 researchers from 18 countries shared aspects of algebraic geometry over finite fields, number theory, cryptography, and coding theory. The 11 papers that emerged from the conference consider such topics as the exact limit of some cubic towers, optimal and maximal singular curves, on some bounds for symmetric tensor rank of multiplication in finite fields, a new proof of a Thomae-like formula for non-hyper-elliptic genus three curves, secret sharing schemes with strong multiplication and a large number of players from toric varieties, and field extensions and index calculations on algebraic curves.

QA269 9781470422103

Game Theory: A Playful Introduction

Matt DeVos and Deborah A. Kent (Student Mathematical Library; Volume 80)

American Mathematical Society, ©2016 343 p.
\$49.00 (pa)

DeVos and Kent present readers with a comprehensive introduction to the mathematics of both combinatorial and classical game theory, united

by a the common theme of strategic reasoning. The authors cover combination games, normal play games, impartial games, Hackenbush and Partizan games, Von Neumann's minimax theorem, zero-sum matrix games, n-player games, cooperation, and a great many other related subjects. Matt DeVos is a faculty member of Simon Fraser University in Canada. Deborah A. Kent is a faculty member of Drake University in Iowa.

QA274 9783110495102

Stochastic PDEs and Dynamics

Boling Guo, Hongjun Gao, and Xueke Pu
De Gruyter, ©2017 220 p. \$140.00

Guo, Gao, and Pu present some fundamentals of stochastic partial differential equations and introduce recent results concerning several important examples, such as the Ginzburg-Landau equation, Ostrovsky equation, geostrophic equations, and primitive equations in climate. They cover the stochastic integral and Itô formula, Ornstein-Uhlenbeck processes and stochastic differential equations, and random attractors. A final long chapter surveys such applications as the Hausdorff dimension of a random attractor, momentum estimate and pathwise uniqueness, uniform estimates of solutions, asymptotic compactness and random attractors, and stochastic two-dimensional primitive equations with Lévy noise.

QA295 9783110480139

Graphs for Pattern Recognition: Infeasible Systems of Linear Inequalities

Damir N. Gainanov
De Gruyter, ©2016 147 p. \$140.00

Looking at mathematical constructions that are foundational in pattern recognition as an important area of data mining, Gainanov focuses especially on infeasible systems of linear inequalities, whose generalized solutions act as building blocks of geometric decision rules for recognition. He covers infeasible monotone systems of constraints; complexes, (hyper)graphs, and inequality systems; polytopes, positive bases, and inequality systems; monotone Boolean functions, complexes, graphs, and inequality; and inequality systems, committees, (hyper)graphs, and alternative covers.

QA316 9783110495287

Vanishing Viscosity Method: Solutions to Nonlinear Systems

Edited by Boling Guo, Dongfen Bian, Fangfang Li, and Xiaoyu Xi
De Gruyter, ©2016 561 p. \$196.00

Mathematicians introduce and compare the three kinds of equations for solving nonlinear partial

differential equations: the dissipative system, the hyperbolic conservation system, and the nonlinear dispersion system. Then they focus on the vanishing viscosity method for the numerical solution obtained by discretizing nonlinear equations. They cover Sobolev spaces and preliminaries; the vanishing viscosity method of some nonlinear evolution systems; the vanishing viscosity method of quasilinear hyperbolic systems; physical viscosity and the viscosity of different schemes; the convergence of Lax-Friedrichs scheme, Godunov scheme, and Glimm Scheme; and electric-magneto-hydrodynamic equations.

QA431 9783110489644

Exact Finite-Difference Schemes

Edited by Sergey Lemeshevsky, Piotr Matus, and Dmitriy Poliakov

De Gruyter, ©2016 232 p. \$140.00

Writing for their peers and for graduate students, physicists and mathematicians describe exact numerical methods of mathematical models. They show how to use exact-difference schemes as a starting point for constructing finite-difference schemes suitable for implementation on a computer, and show that combining exact-difference schemes with modern quadrature formulas results in numerical algorithms that are highly efficient. They cover preliminary results, hyperbolic equations, parabolic equations, using exact different schemes to construct NSFD discretizations of differential equations, exact and truncated difference schemes for boundary-value problems, exact different schemes for stochastic differential equations, and numerical blow-up time.

PHYSICS

QC151 9789814730570

Uncertainty Quantification in Computational Science: Theory and Application in Fluids and Structural Mechanics

Edited by Sunetra Sarkar and Jeroen A. S. Witteveen

World Scientific, ©2017 182 p. \$98.00

Editors Sarkar and Witteveen present readers with a collection of academic and research perspectives on the emerging field of uncertainty quantification in fluid engineering and coupled structural-fluids systems. The selections that make up the main body of the text are devoted to uncertainty quantification as applied to the aeroacoustics of wall-bounded flows, the efficient uncertainty analysis of radiative heating for planetary entry, metastable conditions in cavitating flows, and other related subjects. Sunetra Sarkar

is a faculty member of the Indian Institute of Technology Madras. Jeroen A. S. Witteveen is a faculty member of the Center for Mathematics and Computer Science in The Netherlands.

QC318 9789813147676

Entropy: The Truth, the Whole Truth, and Nothing but the Truth

Arieh Ben-Naim

World Scientific, ©2017 274 p. \$22.00 (pa)

Ben-Naim presents readers with a comprehensive examination of entropy as a concept of physics, taking to task the various misinterpretations and misapplications of the concept of entropy in history and contemporary popular culture. The author covers the various definitions of entropy, the second law of thermodynamics, interpretations and misinterpretations of entropy, applications and misapplications of entropy, and a wide variety of other related subjects over the course of the book's three chapters. Ben-Naim is a faculty member of the Hebrew University of Jerusalem.

QC495 9781498765497

Applying Color Theory to Digital Media and Visualization

Theresa-Marie Rhyne

CRC Press, ©2017 181 p. \$59.95 (pa)

Rhyne presents readers with a guide to the principles and practice of the application of color theory concepts to visualization and digital media for use in a variety of contexts. The author covers the basics of various different color models; color vision principles; defining color, color spaces, and color systems; defining color harmony; analyzing and modifying with online and mobile color tools, and a great many other related subjects over the course of the book's seven chapters. Rhyne is an expert in computer-generated visualization and a consultant.

QC611 9783110473605

Charge Dynamics in Organic Semiconductors: From Chemical Structures to Devices

Pascal Kordt

De Gruyter, ©2016 191 p. \$154.00

Examining simulations of transport in organic semiconductors, Kordt sets out strategies for linking the chemical composition and morphology of an organic layer to charge carrier mobility and current-voltage characteristics of a device. To build a bridge between chemical structure and device scale, he combines different methods, among them density functional theory, molecular dynamics, kinetic Monte Carlo, and drift-diffusion equations. The multiscale approach is still limited to several thousand atoms, leading to finite-size

effects, he says, but he shows how to quantify the resulting error on the mobility and on the energy-per-charge carrier by analytical calculations and how to verify them with simulations.

QC879 9789813147348

Advances in Atmospheric Chemistry; Volume 1

Edited by J. R. Barker, A. L. Steiner, and T. J. Wallington

World Scientific, ©2017 584 p. \$188.00

Here begins a series presenting invited summaries of research on atmospheric chemistry ranging from broad areas to the work of specific researchers. The first volume covers science of the environmental chamber, the role of water in organic aerosol multiphase chemistry: focus on partitioning and reactivity, a critical review of atmospheric chemistry of alkoxy radicals, the role of nitric acid surface photolysis on the tropospheric cycling of reactive nitrogen species, the atmospheric chemistry of halogenated organic compounds, atmospheric reaction rate constants and kinetic isotope effects computed using the HEAT protocol and semi-classical transition state theory, and recent advances in the chemistry of OH and HO₂ radicals in the atmosphere; field and laboratory measurements.

CHEMISTRY

QD341 9789813148741

Optical Properties of Graphene

Edited by Rolf Binder

World Scientific, ©2017 506p. \$160.00

Physicists and materials scientists present a graduate-level introductory tutorial on the optical properties of graphene, then review current research for graduate students and researchers. They cover linear optical response and Raman spectroscopy, nonlinear optical properties, terahertz response, saddle point spectroscopy, and device application. Among the topics are microscopic theory for the groundstate and linear optical response of novel two-dimensional materials with hexagonal symmetry, nonlinear optical experiments on graphene, the ultrafast manipulation of terahertz waves using graphene metamaterials, femtosecond pulse generation with voltage-controlled graphene saturable absorbers, and the potential of graphene as a transparent electrode.

QD383 9781498715553

Silicone Dispersions

Edited by Yihan Liu (Surfactant Science Series;

159)

CRC Press, ©2017 369 p. \$149.95

In this book, editor Yuan Li presents readers with a collection of contributions that together provide an understanding of the contemporary literature and material science surrounding silicone dispersions. The eleven selections that make up the main body of the text are grouped in parts devoted to the basic structure and properties of silicones, silicone emulsions and microemulsions, ionic polymerization of silicones in aqueous media, silicone water-based elastomers, and a wide variety of other related subjects. The editor is with the Dow Corning company of Michigan.

QD501 9781786341211

Modern Developments in Catalysis

Edited by Graham Hutchings, Matthew Davidson, Richard Catlow, Christopher Hardacre, Nicholas Turner, and Paul Collier

World Scientific, ©2017 320 p. \$139.00

Academic and commercial chemists sample the many applications of chemical catalysis. Among them are sustainable hydrogen and/or syngas production: new approaches to reforming, in situ and operando measurement of catalysts at synchrotron X-ray and neutron sources, immobilizing homogeneous catalysts in metal-organic frameworks: methods and selected examples, precious metal catalysis for sustainable energy, and the life cycle assessment of emerging catalyst technologies: the case of polymer electrolyte membrane fuel cells.

QD801 9781786341501

Sonochemistry: New Opportunities for Green Chemistry

Gregory Chatel

World Scientific, ©2017 170 p. \$45.00 (pa)

Chatel begins by distinguishing power ultrasound used in chemistry/sonochemistry, from the ultrasonography used for diagnosis in veteran and human medicine. He introduces the technology of unconventional activation to students and researchers who think it might help them in their particular area of chemistry. Passing over details of the acoustic physics, he concentrates on the theory and practice of using ultrasound in laboratories, and on understanding the mechanisms involved and which parameters can affect the observed results.

TECHNOLOGY (GENERAL)

T55 9781498767927

Risk-Based, Management-Led, Audit-Driv-

en, Safety Management Systems

Ron C. McKinnon

CRC Press, ©2017 233 p. \$129.95

McKinnon explains how accidents are caused and how they can be prevented by implementing a safety management system that is based on risks arising from the business, is initiated and led by management at all levels, and is constantly monitored by audit processes. He discusses practical and basic risk assessment techniques and the authority, responsibility, and accountability that management needs to assign in order to make a safety system function successfully. He also introduces national and international guidelines for safety and health management systems, and uses an example safety system to demonstrate how to comply with them.

T59 9781482239027

Theory of User Engineering

Masaaki Kurosu

CRC Press, ©2017 132 p. \$89.95

Kurosu presents readers with a comprehensive examination of the emerging field of user engineering, the diversity of users in the field, and the business process that blends design and the user's experience. The book covers usability and user experiences in the context of quality characteristics, users and artifacts, the design process of user engineering, understanding the user and the context of use, and a wide variety of other related subjects. The author is a faculty member of the Open University of Japan.

T174 9781498730600

Commercialization Secrets for Scientists and Engineers

Michael Szycher

CRC Press, ©2017 536 p. \$59.95 (pa)

This plain language textbook/guide to the commercialization process is written for technology entrepreneurs in knowledge-intensive fields, especially those who are interested in commercializing 'disruptive technologies' in areas such as genetics, biotechnology, communication, medical devices, and fuel cells. The book begins with a section on budget issues and organization issues, with guidance on funding and marketing a knowledge-intensive business, creating and managing a team, strategic planning for start-ups, and tips for virtual organizations. The next section gives advice on making initial decisions in areas such as make versus buy, patent versus trade secrets, strategic alliances, and mergers and acquisitions. Section 3 supplies advice on pricing and risk analysis related to product launch, with chapters on specific segments: pharmaceutical

products, medical devices, and high-tech products. The last chapter of the book offers more general guidelines on commercialization and the launch management process. The book contains an extensive glossary of business and legal terms, plus many bullet points, summary charts, process diagrams, and chapter-ending questions and key points.

T211 9789813142435

Patent Portfolio Deployment: Bridging the R&D, Patent and Product Markets

Liu Shang-Jyh, Fong Hoi Yan Anna, and Lan Yuhong Tony

World Scientific, ©2017 262 p. \$118.00

Combining backgrounds in law, technology management, electrical and computer engineering, and biomedical sciences, Liu, Fong, and Lan describe the economic importance of patents for companies and how they fit into the process of designing and marketing products. They cover the rise of the patent industry; patent portfolio deployment in the modern economy; deployment with patent analytics: theory and practice; non-patent literature and journal intelligence; patenting strategies; research and development strategies; licensing, litigation, and alliance strategies; and valuation.

ENGINEERING (GENERAL, CIVIL)

TA166 9781472439253

Human Factors and Ergonomics in Practice: Improving System Performance and Human Well-being in the Real World

Edited by Steven Shorrock and Claire Williams

CRC Press, ©2017 422 p. \$49.95 (pa)

Practitioners working in the field in North America, Europe, and Australia present 31 chapters on the work of human factors and ergonomics practitioners in a variety of industrial sectors, organizational settings, and working contexts. They discuss the state of the profession and discipline; fundamental issues like practitioner roles, organizational contexts, integrating research and practice, methods, and becoming a practitioner; domain-specific issues for health care, the rail industry, aviation, military aviation, the oil and gas industry, the nuclear industry, manufacturing, regulation, consumer product design, inclusive design, user experience, ergonomic products, web engineering and applications, the construction and demolition industry, and agriculture; and communicating with decision makers, engaging participants, writing as a human factors and ergonomics practitioner, and public and social me-

dia engagement.

TA168 9781522525097

Multi-Criteria Decision Making for the Management of Complex Systems

Albert Voronin (Advances in Logistics, Operations, and Management Science)

Business Science Reference, ©2017 201 p.

\$175.00

Voronin describes the current strategies and methods of decision theory as it applies to managing complex systems. He covers a systemic approach to decision making, multi-criteria problems in complex systems management, the multi-criteria optimization of dynamic control systems, the vector optimization of ergatic systems, the multi-criteria assessment of projects and scenarios, the vector evaluation of problematic situations, the synthesis of compromise-optimal mobile object trajectories in a conflict environment, the multi-criteria evaluation of the insurance fund value at insurance for space projects, the vector quality assessment of the glide landing process of an aircraft, the vector optimization of neural network classifiers, the multi-criteria allocation of limited resources of complex systems, and examples of subject areas of multi-criteria problems.

TA169 9781627081351

ISTFA 2016: Conference Proceedings From the 42nd International Symposium for Testing and Failure Analysis

ASM International

ASM International, ©2016 641 p. \$167.00 (pa)

The 115 papers selected for the November 2016 conference present new research on techniques for analyzing the failure of semiconductor devices and preparing samples for examination. Microscopes help investigate phase change memory confined cell endurance, sub-20nm structures in devices, contaminants in wafers and packaging, copper solder discoloration, and DQ failures in SRAM. Case studies analyze the failure of a multiplexer, conductive thin films, automotive ultrasonic parking sensors, a bipolar transistor, and MEMS gyroscopes. A database of counterfeit electronics, the authentication of printed circuit boards, and X-ray inspection for detecting counterfeit ICs address the problem of preventing counterfeit microelectronics.

TA190 9781482208443

Risk Management in Civil Infrastructure

Mohammed M. Ettouney and Sreenivas Alampalli (Civil Infrastructure Health and Sustainability)

CRC Press, ©2017 503 p. \$179.95

Ettouney and Alampalli present readers with a comprehensive examination of the theoretical and practical treatment of contemporary risk management, risk monitoring, risk communication, risk treatment, and risk assessment as they pertain to civil infrastructure. The authors cover the risk management landscape, reliability, exposure, likelihood, resilience, sustainability, graph networks, risk assessment, and many other related subjects. Mohammed M. Ettouney works as a consulting engineer in the United States. Sreenivas Alampalli is with the New York State Department of Transportation.

TA343 9781466583733

Engineering Modeling Languages: Turning Domain Knowledge Into Tools

Benoit Combemale, Robert B. France, Jean-Marc Jézéquel, Bernhard Rumpe, Jim Steel, and Didier Vojtisek (Chapman & Hall/CRC Innovations in Software Engineering and Software Development)

CRC Press, ©2017 364 p. \$69.95

In this book, authors Combemale, France, Jézéquel, Rumpe, Steel, and Vojtisek present readers with a comprehensive examination of the engineering of modeling languages to turn domain knowledge into tools. The authors cover metamodeling with OCL, building editors and viewers, model transformation, and many other related subjects. Benoit Combemale and Jean-Marc Jézéquel are faculty members of the University of Rennes 1 in France. Robert B. France is a faculty member of Colorado State University. Bernhard Rumpe is a faculty member of RWTH Aachen University and Fraunhofer FIT in Germany. Jim Steel is a faculty member of AEHRC and CSIRO in Australia. Didier Vojtisek is a faculty member of Inria in France.

TA347 9781482244731

Fuzzy Differential Equations and Applications for Engineers and Scientists

S. Chakraverty, Smita Tapaswini, and Diptiranjana Behera

CRC Press, ©2017 222 p. \$159.95

Chakraverty, Tapaswini, and Behera present readers with a comprehensive guide to fuzzy differential equations and their various contemporary and emerging applications in the fields of engineering and the sciences. The authors cover the basic concepts of fuzzy set theory and fuzzy and fuzzy fractional differential equations, the analytical methods of fuzzy differential equations, the numerical methods for fuzzy ordinary and partial differential equations, and several other related subject areas. S. Chakraverty is a faculty

member of the National Institute of Technology in India. Smita Tapaswini is a faculty member of the Industrial Technology University in India. Diptiranjana Behera is a postdoctoral fellow at the University of Electronic Science and Technology of China.

TA403 9781616895600

Transmaterial Next: A Catalog of Materials That Redefine Our Future

Edited by Blaine Brownell

Princeton Architectural Press, ©2017 314 p.

\$40.00 (pa)

In this catalog, Brownell, an architect, author, educator, and scholar for advanced materials for architecture and design, brings together material technologies that will impact the future of architecture and design, from augmented skin to 4D printing, and including products, assemblies, processes, and applications. They are organized by material categories--concrete, mineral, metal, wood and biomaterials, plastic and rubber, glass, paint and coatings, fabric, light, and digital--and each technology includes information on its material contents, applications, types and sizes, limitations, future impact, and commercial readiness, as well as contact information for those developing it.

TA417 9783110477016

Magnetic Flux Leakage: Theories and Imaging Technologies

Songling Huang and Wei Zhao (Advances in Electrical and Electronic Engineering; Volume 1)

De Gruyter, ©2016 232 p. \$140.00

Huang and Zhao introduce basic principles of magnetic flux leakage detection, its use to identify and quantify defects in products and components, and its implementation techniques. They cover the testing signal processing method, the quantitative method of magnetic flux leakage testing, defect profile inversion of three-dimensional magnetic flux leakage detection, and three-dimensional magnetic flux leakage imaging detection. Detailed discussions include magnetic flux leakage detection theory and technological development, testing data compression, defect quantification methods based on radial basis functional neural network, the progressive refinement of the defect mesh model, and parameter definition of tangential grooves.

TA418 9781522519713

Applied Environmental Materials Science for Sustainability

Edited by Takaomi Kobayashi (Advances in Environmental Engineering and Green Technologies)

Information Science Reference, ©2017 416 p. \$205.00

Materials and other scientists from Asia, the Middle East, the UK, and the US provide 15 chapters that outline advances in environmental materials, particularly the use of biomass and waste for advanced materials for sustainability. They discuss the application of biomass cellulose to hydrogel films; the development and modification of natural rubber and rubber blend nanocomposites; the use of poly (lactic acid) or polylactide in plastics; the use of inorganic-organic composite materials from liquid natural rubber and epoxidized natural rubber derivatives; clay minerals converted to porous materials and their application; geopolymer sourced with fly ash and industrial aluminum waste for sustainable materials; and adsorption cooling systems using activated carbon. They also detail lipids produced by microalgae in the Okinawa area for biodiesel fuel; the use of biomass polymer sheets in water/alcohol pervaporation as a sustainable source of alcohol energy; bacterial cellulose applications; functional adsorbents made of polymers, ionic liquid, and dendrimer in sustainable technologies; eco-friendly on-site water analyses for ultra-trace harmful ions; and ionic liquids used as green solvent in chemistry.

TA455 9781498725040

Carbon Nanomaterials Based on Graphene Nanosheets

Edited by Ling Bing Kong

CRC Press, ©2017 602 p. \$199.95

Kong presents readers with a collection of research and academic contributions on contemporary and emerging work in the synthesis, processing, characterizations, and applications of nanocarbon materials derived from graphene and graphene derivatives. The seven contributions that make up the main body of the text are devoted to the synthesis of graphene nanosheets, graphene-inorganic hybrids, graphene-based fibers, graphene-based papers and films, and graphene 3D architectures. The editor is a faculty member of Nanyang Technological University in Singapore.

TA645 9781498775885

Elementary Structural Analysis and Design of Buildings: A Guide for Practicing Engineers and Students

Dominick R. Pilla

CRC Press, ©2017 257 p. \$139.95

In this book, author Dominick R. Pilla presents readers with a comprehensive guide to the analysis and design of buildings, including the selection of systems and materials as well as foundations

and retaining structures. He covers minimum design loads for buildings, wind and seismic forces applied to buildings, lateral force distribution, designing and detailing structures, and a wide variety of other related subjects. The author runs DRPILLA, a structural and civil engineering consultancy specializing in architectural planning and design in New York.

TA658 9781522520894

Performance-Based Seismic Design of Concrete Structures and Infrastructures

Edited by Vagelis Plevris, Georgia Kremmyda, and Yasin Fahjan (Advances in Civil and Industrial Engineering)

Engineering Science Reference, ©2017 320 p. \$205.00

Contributed by engineers from Europe and Iran, the 11 chapters in this volume detail the concepts and definitions of performance-based engineering of concrete structures and infrastructures, with emphasis on requirements for potential seismic actions, as well as discussion of the interaction between the local damage and global behavior, and behavior to final collapse. They address selection and scaling time history records for performance-based design, seismic assessment and retrofitting of an under-designed reinforced concrete frame through a displacement-based approach, a single-run adaptive pushover procedure for shear wall structures, the influence of the shear-bending interaction on the global capacity of reinforced concrete frames, the structural performance of typical and non-ductile public reinforced concrete buildings strengthened using friction dampers and reinforced concrete walls, dynamic stability and post-critical processes of slender auto-parametric systems, and the accuracy of force and deformation-based methods in determining the seismic capacity of rehabilitated reinforced concrete school buildings. Others cover structural concepts for design, non-linear analysis, and construction of multi-story base isolated buildings; fuzzy logic applications for performance-based design; the resilience of infrastructures; and numerical methods for the seismic performance assessment of reinforced concrete buildings.

TA666 9783035604757

Tall Wood Buildings: Design, Construction and Performance

Michael Green and Jim Taggart

Birkhäuser Basel, ©2017 176 p. \$69.95

In addition to the ancient Roman qualities of commodity, firmness, and delight for building materials, Green and Taggart say that architects today

must also consider climate change, population growth, and a global housing shortage. As part of the solution, they suggest substituting wood, which sequesters greenhouse gases and grows on trees, for concrete, which now produces 5-8% of greenhouse gasses globally and is becoming scarce. They discuss wood, sustainability, and climate change; building taller with wood; materials; structural systems; building performance; design and construction; and technology. Their case studies are in sections on panel systems, frame systems, hybrid systems, and new visions and new heights.

TA1632 9781498774246

Handbook of Digital Image Synthesis: Scientific Foundations of Rendering

Vincent Pegoraro

CRC Press, ©2017 837 p. \$149.95

Pegoraro, a computer scientist and engineer who specializes in physically-based rendering, offers a handbook of the basic principles and advanced concepts underlying digital image synthesis, including pure and applied mathematics, geometric surfaces and data structures, the physics of light interaction and propagation, analytical and numerical simulation schemes, and optical perception and imaging. The handbook includes theoretical formulas for practical implementation in an actual rendering system, as well as their step-by-step derivation following a deductive reasoning approach. It discusses applications to various instances of algebraic transformations, variance-reduction techniques, low-pass filters, geometric surfaces, indexing structures, phase functions, surface reflectance models, light transport simulation techniques, and color spaces. Chapters are organized by field of study: mathematical, geometrical, physical, computational, and perceptual foundations.

TA1637 9781522518846

Examining Information Retrieval and Image Processing Paradigms in Multidisciplinary Contexts

Edited by Joan Lu and Qiang Xu (Advances in Information Quality and Management)

Information Science Reference, ©2017 425 p. \$245.00

Editors Lu and Qiang present readers with a collection of academic and professional research perspectives on contemporary and emerging trends in multidisciplinary research, its methods and applications, and key techniques in the management and utilization of information resources. The editors have organized the twenty-one selections that make up the main body of their text in

three parts devoted to data mining approaches and image data processing and applications, factors influencing the reading of Arabic textbooks on screens by children from age nine to thirteen, and neural trust models for multi-agent systems. Joan Lu and Qiang Xu are both faculty members of the University of Huddersfield in the United Kingdom.

TA1660 9781138027831

Integrated Micro-Ring Photonics: Principles and Applications as Slow Light Devices, Soliton Generation and Optical Transmission

Iraj Sadegh Amiri, Abdolkarim Afroozeh, and Harith Ahmad

CRC Press, ©2017 164 p. \$99.95

Sadegh Amiri, Afroozeh, and Ahmad present readers with a comprehensive employment and analysis of micro-ring resonators (MRRs) in a variety of optical communication applications. The authors cover soliton signals propagating fiber waveguides and slow light generation, MRR systems and soliton propagating in optical fiber communication, the analysis of single MRRs, and many other related subjects. Iraj Sadegh Amiri and Harith Ahmad are with the Photonics Research Centre at the University of Malaya in Malaysia. Abdolkarim Afroozeh is a faculty member of Islamic Azad University in Iran.

ENVIRONMENTAL TECHNOLOGY

TD192 9781522523253

Handbook of Research on Inventive Bioremediation Techniques

Edited by Jatindra Nath Bhakta (Advances in Environmental Engineering and Green Technologies)

Engineering Science Reference, ©2017 624 p. \$260.00

Environmental and biological scientists review recent developments and current thinking in the theory and practice of bioremediation. Among their topics are the role of microbes in the eco-remediation of perturbed aquatic ecosystems, hydrocarbon biodegradation using agro-industrial wastes as co-substrates, extracting preformed mixed-phase graphene sheets from graphitized coal by fungal leaching, the contribution of earthworms to bioremediation as a living machine, and testing and monitoring biodegradable contaminants in bioremediation techniques.

TD196 9781466510012

Remediation of Heavy Metals in the Environment

Edited by Jiaping Paul Chen, Lawrence K. Wang, Mu-Hao Sung Wang, Yung-Tse Hung, and Nazih K. Shammass (Advances in Industrial and Hazardous Wastes Treatment)

CRC Press, ©2017 528 p. \$199.95

Civil and environmental engineers survey recent information on environmental pollution by heavy metals and approaches to remediating the pollution. Among their topics are recycling filter backwash water and alum sludge from a water utility for reuse, selective remedial alternatives for soil contaminated with heavy metals, the simultaneous removal of chromium and arsenate: a case study using ferrous iron, the adaptive removal of arsenic from water sources using novel nanocomposite mixed matrix membranes, and treating photographic processing waste.

TD430 9781522521365

Advanced Nanomaterials for Water Engineering, Treatment, and Hydraulics

Edited by Tawfik A. Saleh (Advances in Environmental Engineering and Green Technologies)

Engineering Science Reference, ©2017 384 p. \$200.00

Contributors from nanotechnology and from water engineering explore possible applications of the former in the latter. Among their topics are scientific insights into modified and non-modified biomaterials for sorption of heavy metals from water, principles and advantages of microwave-assisted methods for synthesizing nanomaterials for water purification, advanced nanomaterials for removing chemical substances and microbes from contaminated and waste water, characteristics of chitosan nanoparticles for water and wastewater treatment, and the performance of chitosan microparticles and nanoparticles to remove hexavalent chromium from residual water.

TD466 9781138030022

Manganese Removal From Groundwater: Role of Biological and Physico-Chemical Autocatalytic Processes

Jantinus Bruins

CRC Press, ©2016 137 p. \$61.95 (pa)

In his June 2016 doctoral dissertation at the Delft University of Technology and the UNESCO-IHE Institute for Water Education, Bruins presents the results of his experimentation with innovative methods of removing manganese from groundwater that simultaneously remove iron and ammonia. He covers assessing manganese removal from over 100 groundwater treatment plants,

manganese removal from groundwater: the characterization of filter media coating, the biological and physico-chemical formation of birnessite during the ripening of manganese removal filters, identifying the bacterial population in manganese removal filters, reducing the ripening time of full-scale manganese removal filters with manganese oxide coated media, and factors controlling the ripening of manganese removal filters in conventional aeration-filtration groundwater treatment.

TD653 9781498757874

Airborne Occupational Hazards in Sewer Systems

Amy Forsgren and Kristina Brinck

CRC Press, ©2017 257 p. \$139.95

Forsgren, a chemical engineer who works in the water and wastewater industry in Sweden, and Brinck, an information designer at a water technology company, provide technical information on airborne occupational hazards in sewer systems, including toxic or explosive gases and infectious agents found in collection systems, focusing on hydrogen sulfide and methane, carbon monoxide, carbon dioxide, and bacterial, viral, and fungal and parasitic agents, including viral hepatitis and leptospirosis/Weill's disease. They also discuss the role of confined spaces and include case studies. They do not address electrical hazards, slips, trips, falls, or machinery hazards, or legal requirements, regulations, or medical advice.

TD799 9781783269891

The Recovery of Gold From Secondary Sources

Edited by Syed Sabir

Imperial College Press, ©2016 225 p. \$128.00

Editor Syed Sabir presents readers with a collection of professional and academic research perspectives on contemporary and emerging techniques for recovering gold from spent electronics and other secondary sources. The seven selections that make up the main body of the text are devoted to leaching gold from spent mobile phone PCBs using greener reagents, electroless displacement deposition of gold from aqueous sources, adsorption of gold on granular activated carbons and new sources of renewable and eco-friendly activated carbons, and a wide variety of other related subjects. The editor is a faculty member of King Saud University in Saudi Arabia. Distributed by World Scientific.

TD885 9781786341594

CO2 Sequestration by Ex-Situ Mineral Carbonation

Edited by Aimaro Sanna and M. Mercedes Ma-

roto-Valer

World Scientific, ©2017 174 p. \$88.00

Chemists and materials scientists present the first full book devoted to mineral carbonation as a technique for sequestering carbon dioxide, an approach they say could potentially trap all carbon dioxide creating by burning all the fossil fuel left on the planet. They cover the basics of the technology, resources available worldwide, ex-situ technologies, and the potential utilization of the carbonated products. The approach is currently being investigated at the commercial scale, they say.

BUILDING CONSTRUCTION

TH880 9788245020557

Zero Emission Buildings

Edited by Anne Grete Hestnes and Nancy Lea Eik-Nes

Fagbokforlaget, ©2017 233 p. \$67.00 (pa)

Based on the research and development activities at the Research Centre on Zero Emission Buildings in Norway from 2009 to 2017, this book details tools, technologies, and solutions for zero emission buildings. It describes strategies for the research's pilot building projects, the integrated design process, architectural aspects, the importance of daylight, low-carbon solutions, building materials, insulation, heating and cooling, ventilation, renewable energy, and the role of people, followed by description of the pilot buildings. Distributed in the US by ISBS.

TH3401 9783038215370

Adaptive Reuse: Extending the Lives of Buildings

Liliane Wong

Birkhäuser Basel, ©2017 256 p. \$44.95 (pa)

With the growing recognition of impending climate change, the adaptation of existing structures has expanded beyond the artistic realms it inhabited during the late 20th century and, under the name adaptive reuse, has become its own design practice within architecture. Wong examines its place in history; its relationship to adjacent fields; its place within shifting norms of art, culture, and society; and its typological differences. Her topics include plunder: erasure and redemption, battle of the immortals, considering DNA, the impassive host, and a new and distant future.

TH5280 9781522521990

Design Solutions and Innovations in Temporary Structures

Robert Beale and Joao André (Advances in Civil and Industrial Engineering)

Engineering Science Reference, ©2017 503 p. \$200.00

In this book, authors Beale and André present readers with a comprehensive examination of contemporary and emerging design solutions and innovations in the design, construction, and employ of a variety of temporary structures. The authors cover structural analysis, structural safety, design codes and general design guidance, the analysis of collapses, quality management, and a wide variety of other related subjects. Robert Beale is an independent researcher based in the United Kingdom. Joao André is with the Portuguese National Laboratory for Civil Engineering.

MECHANICAL ENGINEERING & MACHINERY

TJ164 9781627081313

Advances in Materials Technology for Fossil Power Plants: Proceedings From the Eighth International Conference

Edited by J. Parker, J. Shingledecker, and J. Siefert (EPRI Report; Number 3002008446)

ASM International, ©2016 1263 p. \$187.00

More than 100 selected papers document the October 2016 conference in Algarve, Portugal with discussions of technology and program overviews, nickel-based alloys, materials for turbines, stainless steels, oxidation, corrosion, the ongoing assessment of grade 91 steel, the life management of 9Cr steels, new developments in 9Cr steels and welds, new ferritic steels, and welds in grade 91. The search for advanced materials for fossil power plants is driven primarily by the desire for higher-efficiency advanced ultrasupercritical steam cycles, and for increased flexible operations of existing ultrasupercritical power plants and natural gas combined cycle plants.

TJ211 9781522522805

Membrane Computing for Distributed Control of Robotic Swarms: Emerging Research and Opportunities

Andrei George Florea and Catalin Buiu (Advances in Computational Intelligence and Robotics)

Information Science Reference, ©2017 119 p. \$160.00

Florea and Buiu describe using membrane computing for robot control, first setting out the fundamental concepts of membrane computing and mobile computing then explaining methods for designing and using membrane computing based controllers for single mobile robots and for swarms of mobile robots. They cover an overview

of swarm robotics, membrane computing: theory and applications, software for membrane computing, P colonies for the control of single and multiple robots, and a generic guide for using membrane computing in robot control.

TJ853 9781683180067

Nanofluid Technologies and Thermal Convection Techniques

Ramesh Chand (Advances in Mechatronics and Mechanical Engineering)
Engineering Science Reference, ©2017 229 p.
\$185.00

Nanofluids, explains Chand, are fluids that contain a small amount of uniformly dispersed and suspended nanometer-sized particles, which enhance the thermal conductivity of the fluid. Such fluids are becoming important commercially, especially where cooling is of primary interest. He investigates theoretically the thermal instability in a horizontal layer of Maxwellian visco-elastic nanofluid on the basis of Buongiorno's model for more realistic boundary conditions. Using the Galerkin weighted residual method, he finds the solution of the eigen value problem, derives stability criteria for stationary and oscillating convection, and plots graphs to study the effects of various parameters on stationary and oscillating convection.

TJ1280 9781498745949

Nanofinishing Science and Technology: Basic and Advanced Finishing and Polishing Processes

Edited by V. K. Jain (Micro and Nano Manufacturing Series)

CRC Press, ©2017 655 p. \$149.95

Mechanical engineers explain both the science and technology of many nanofinishing processes—both newly developed and commonly practiced—and include process optimization methodologies that will help extract the best from the process under consideration. They cover traditional nanofinishing processes, advanced nanofinishing processes, nanofinishing processes assisted by magnetic fields, hybrid nanofinishing processes, and miscellaneous matters. Among their topics are abrasive flow finishing processes and modeling, focused ion beam nanofinishing for ultra-thin transmission electron microscopy sample preparation, a nanofinishing process for spherical components, the fine finishing of gears by an electrochemical honing process, and optimizing advanced finishing processes using a teaching-learning-based optimization algorithm.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK2331 9781498742191

Design of Electromechanical Products: A Systems Approach

Ali Jamnia

CRC Press, ©2017 394 p. \$119.95

In this book, author Ali Jamnia presents readers with a comprehensive guide to the entire cycle of electromechanical product design from a systems perspective. The author has organized the nineteen chapters that make up the main body of his text is six parts devoted to product development, lifecycle management, and the engineering roadmap; requirements and their cascade; the nuts and bolts of design; preparation for a product launch; sustaining a marketed product; and best practices and guidelines. The author is a sponsored instructor of the Society for Automotive Engineers.

TK2785 9783110468175

Pulse Width Modulation: Analysis and Performance in Multilevel Inverters

Satish Kumar Peddapelli

De Gruyter Oldenbourg, ©2017 179 p. \$114.99

Peddapelli begins by explains why eliminating harmonics is a major requirement for multilevel electric power inverters, then presents algorithms based on space vector pulse width modulation and implements them for neutral point-clamped multilevel inverter fed induction motor. Among his topics are the three-level inverter, a fractal approach, a qualitative algorithm, and the decomposition method. His general approach to pulse width modulation techniques and multilevel inverter topologies could be useful to graduate and undergraduate students, practitioners, and researchers in electrical engineering.

TK2896 9781608079810

Applications of Energy Harvesting Technologies in Buildings

Joseph W. Matiko and Stephen P. Beeby (Artech House Integrated Microsystems Series)

Artech House, ©2017 216 p. \$149.00

This volume details energy harvesting technologies in buildings, available energy sources, and their potential applications. It includes methods for capturing and converting these energy sources, estimates of the amount of energy that can be harvested from each source, case studies showing the potential of energy harvesting in the built environment, and the future of energy harvesting in applications like smart homes and the

internet of things. It describes solar cell-powered sensor nodes for emotion monitoring systems in ambient-assisted living environments, thermo-electric energy harvesting and power management circuit design, inductive power transfer, airflow energy harvesting, and vibration energy harvesting.

TK2931 9781786341655

Black TiO₂ Nanomaterials for Energy Applications

Edited by Xiaobo Chen and Yi Cui

World Scientific, ©2017 309 p. \$135.00

The 11 chapters in this volume outline research on black titanium dioxide (TiO₂) nanomaterials and how they can be used in clean energy applications, including synthetic methods, approaches, and the chemical, physical, and electronic properties of black titanium dioxide and their applications in catalysis, photocatalysis, photothermal, photoelectrochemical water splitting, lithium-ion and lithium-sulfur batteries, and supercapacitors. Chemists and materials scientists from Asia, the US, and Europe discuss the synthesis and properties of hydrogenated black titanium dioxide nanomaterials; electrochemical and mechanical methods; the effect of points defects and ordered/disordered morphology on the electronic and structural features in black titanium dioxide nanomaterials; the properties, synthetic conditions, performance, and applications of black titania; theoretical analysis related to black titanium dioxide nanomaterials; black titania coatings; and hydrogen-treated titanium oxide nanowires for charge storage.

TK2950 9781783266050

Innovative Thermoelectric Materials: Polymer, Nanostructure and Composite Thermoelectrics

Edited by Howard E. Katz and Theodore O. Poehler
Imperial College Press, ©2016 276 p. \$130.00
Editors Katz and Poehler present readers with a collection of scholarly articles and research materials focused on the structure and use of contemporary and emerging polymer, nanostructure, and composite thermoelectric materials. The eight selections that make up the main body of the text are devoted to solution-processable molecular and polymer semiconductors for thermoelectrics, nanostructured thermoelectric materials, the new design rules for polymer-based thermoelectric nanocomposites, and other related subjects. Howard E. Katz and Theodore O. Poehler are faculty members of Johns Hopkins University in Maryland. Distributed by World Scientific.

TK5102 9783110426885

Chaotic Secure Communication: Principles and Technologies

Kehui Sun

De Gruyter, ©2016 333 p. \$140.00

Offering chapter review questions and MATLAB code, this work can be used as a textbook for senior undergraduate and graduate students in electronic information and automatic control; it can also serve as a reference for researchers in science and engineering. The book begins with background on chaos theory, a review of research methods used in the field, and description of chaotic systems. Later chapters detail techniques in chaotic secure communication and examine analytical methods for understanding chaotic systems. Some specific subjects explored include secure communication technology based on chaos synchronization, audio and video chaotic encryption and communication technology, and analysis and simulation of fractional-order chaotic systems. The book contains a list of academic journals in the field of chaos, plus an appendix of code and MATLAB source programs. It is illustrated with b&w images.

TK5103 9781498726351

Spectrum Sharing in Wireless Networks: Fairness, Efficiency, and Security

Edited by John D. Matyas, Sunil Kumar, and Fei Hu

CRC Press, ©2017 705 p. \$169.95

Contributed by an international group of computer scientists and engineers and other researchers, the 27 chapters in this volume discuss various aspects of spectrum sharing in wireless networks. They address the basic concept of spectrum sharing, hardware/software function requirements for efficient sharing, and future trends of sharing strategies; approaches to spectrum sharing, including a multi-hop network, the space-time sharing concept, the LTE-U (long-term evolution-unlicensed) scheme, sharing in broadcast and unicast hybrid cellular networks, different primary user/secondary user cooperation strategies, protocols in the spectrum sharing context, and game theory models between primary and secondary users; modeling issues for the interaction of primary and secondary users, calculation methods to find out the available spectrum, and scheduling schemes to achieve secondary user traffic delivery; MIMO (multiple input, multiple output)-oriented design, including capacity/rate calculation and beamforming issues; interference-aware power allocation schemes among cognitive radio users and power control issues for spectrum sharing; security is-

sues and countermeasures; and sharing schemes and policies in military applications.

TK5105 9781522524373

Emerging Trends and Applications of the Internet of Things

Edited by Petar Kocovic, Reinhold Behringer, Muthu Ramachandran, and Radomir Mihajlovic (Advances in Wireless Technologies and Telecommunication)

Information Science Reference, ©2017 330 p. \$195.00

Contributed by researchers from Europe and Mexico, the 10 chapters in this collection outline the basic concepts, development, tools, and techniques of the internet of things. They cover the historical perspective, the structure of business model elements in the field, technical standardization, the spatial cognition of surrounding objects by blind and visually impaired people using sound patterns and ultrasonic sensing, the Arduino processor, model-driven approaches to building internet-of-things applications, and applications related to e-health, cloud computing, binary large object and character large object integration, and the cognitive internet of everything.

TK6592 9781466586574

Advanced Ultrawideband Radar: Targets, Signals and Applications

Edited by James D. Taylor

CRC Press, ©2017 475 p. \$199.95

This volume consists of 12 chapters on advanced ultrawideband radar technology. Engineers and scientists from the US, Europe, and Japan describe basic ultrawideband radar concepts; advances in short-range distance and permittivity ground-penetrating radar measurements for road surface surveying; signals and targets; ultrawideband time-frequency signal processing; modeling of ultrawideband impulse scattering by aerial and subsurface resonant objects based on integral equation solving; nondestructive testing of aeronautics composite structures using ultrawideband radars; modeling of ultrawideband radar signals for bioradiolocation; bioradiolocation as a technique for remote monitoring of vital signs in medical applications; noise radar techniques; prototype ultrawideband object scanner and holographic signal processing; ultrawideband sense-through-the-wall radar technology; and wideband wide beam motion sensing.

TK6750 9781522523062

NFC Payments Systems and the New Era of Transaction Processing

Vibha Kaw Raina (Advances in Finance, Accounting, and Economics)

Business Science Reference, ©2017 193 p. \$155.00

Raina explains to students and researchers how near-field communications (NFC) can be used to facilitate commercial transactions by having mobile devices trade data. The technology not only makes it easier and faster for consumers to spend money, she says, but also profits handset manufacturers, banks, carriers, credit card companies, and merchants. She covers NFC payments overview, NFC payment architecture, mobile communication technology, mobile handset technology, secure element, and NFC devices.

TK7868 9781630813833

A Practical Guide to EMC Engineering

Levent Sevgi (Artech House Electromagnetics Series)

Artech House, ©2017 304 p. \$159.00

Covering essentials in electromagnetic compatibility engineering in a manner that requires a different look into many electromagnetic concepts and issues, Sevgi considers all the procedures from design to market, including technical and non-technical issues that other books on electromagnetic compatibility have not treated. He covers accreditation, electromagnetic model, circuit model, antennas and antenna calibration, noise and frequency analysis, test and measurement environments, test and measurement devices, tests and measurements, and electromagnetic compatibility and protection.

TK7871 9781498743808

Semiconductor Devices in Harsh Conditions

Edited by Kirsten Weide-Zaage and Malgorzata Chrzanowska-Jeske (Devices, Circuits, and Systems)

CRC Press, ©2017 234 p. \$129.95

Editors Weide-Zaage and Chrzanowska-Jeske present readers with a collection of research papers and scholarly articles investigating current and emerging application for semiconductor devices in an array of harsh conditions on earth and beyond. The editors have organized the ten sections that make up the main body of the text in three parts devoted to radiation, sensors and operating conditions, and packaging and system design. Kristin Weide-Azzge is a faculty member of the Gottfried Wilhelm Leibniz University in Hannover, Germany. Malgorzata Chrzanowska-Jeske is a faculty member of Portland State University in Oregon.

TK7872 9781498738446

Mobile Crowdsensing

Cristian Borcea, Manoop Talasila, and Reza Curtmola

CRC Press, ©2017 165 p. \$119.95

Borcea, Talasila, and Curtmola present readers with a comprehensive examination of mobile crowdsensing and its potential to allow large scale, cost effective sensing of the physical world using existing and emerging technology. The authors cover the evolution of sensing, bridging the sensing gap with mobile crowdsensing, static wireless sensing networks, the potential for mobile sensing, crowdsourcing, crowdsourcing platforms, collective sensing, and a wide variety of other related subjects. Cristian Borcea, Manoop Talasila, and Reza Curtmola are faculty members of the New Jersey Institute of Technology.

TK7876 9781498782111

Printed Resonant Periodic Structures and Their Applications

Mahesh Abegaonkar, Lalithendra Kurra, and Shibhan Kishen Koul

CRC Press, ©2017 147 p. \$139.95

Abegaonkar, Kurra, and Koul present readers with a comprehensive examination of resonant periodic structures and their applications in microchip circuits for research purposes, including electromagnetic bandgap structures and uniplana compact photonic bandgap structures. The authors cover periodic structures in electromagnetics, planar periodic structures as electromagnetic bandgap surfaces, compact planar periodic structure as band-rejection filter, and many other related subjects. Shibhan Kishen Koul and Mahesh Abegaonkar are faculty members of the Indian Institute of Technology. Lalithendra Kurra is a faculty member of CVR College of Engineering in India.

TK7881 9789813109407

Gallium Nitride and Silicon Carbide Power Devices

B. Jayant Baliga

World Scientific, ©2017 561 p. \$128.00

Updating the material in his 2006 book on silicon carbide power semiconductor devices and adding recent developments in gallium nitride power devices, Baliga here emphasizes the physics of operation of the devices. His analyses provide guidelines for understanding the design and operation of various device structures generally, he says, but for designs for specific applications, he refers readers to papers published in the literature. Among his topics are material properties, ideal specific on-resistance, junction field effect

transistors, silicon carbide planar power metal-oxide-semiconductor field-effect-transistors, silicon carbide bipolar junction transistors, and silicon carbide gate turn-off thyristors.

TK7888 9781630813277

Reflectionless Filters

Matthew A. Morgan (Artech House Microwave Library)

Artech House, ©2017 258 p. \$139.00

When conventional electric filters pass some frequencies, says Morgan, the frequencies that are not passed can bounce around a circuit and create all kinds of havoc--that is the filters do not attenuate stop-bands as advertised, but reflect them. He describes filters that, in principle and given ideal components, have a reflection coefficient that is identically zero at all ports and at all frequencies from zero to infinity--reflectionless filters. Among his topics are passive microwave networks, foundations of reflectionless filters, generalized reflectionless filters, transmission-line reflectionless filters derivation, and tools for advanced topology creation.

TK8315 9781498714754

Advances in Imaging and Sensing

Edited by Shuo Tang and Daryoosh Saeedkia (Devices, Circuits, and Systems)

CRC Press, ©2017 283 p. \$199.95

Editors Shuo and Saeedkia present readers with a collection of academic and research perspectives on contemporary and emerging advances in electronic imaging and sensing, focusing specifically on applications in the biomedical field. The editors have organized the twelve selections that make up the main body of the text in three parts devoted to technology and devices, imaging sensors and systems, and biomedical applications. Shuo Tang is a faculty member of the University of British Columbia in Canada. Daryoosh Saeedkia is with TeTechS Inc. in Ontario, Canada.

MOTOR VEHICLES, AERONAUTICS, ASTRONAUTICS

TL507 9781624103285

Hypersonic Nonequilibrium Flows: Fundamentals and Recent Advances

Edited by Eswar Josyula (Progress in Astronautics and Aeronautics; Volume 247)

American Institute of Aeronautics & Astronautics, ©2015 548 p. \$129.95

Eight contributions present the fundamental governing equations of non-equilibrium fluid transport, the direct simulation Monte Carlo method

for rarefied gas flow analysis, the computational chemistry approach to calculating the rates and cross sections in the quantized energy states, and radiative heat transfer as a non-equilibrium process. A survey of computational fluid dynamic tools for hypersonic flows focuses on finite volume methods. The appendix lists 25 high-enthalpy facilities and plasma wind tunnels for aerodynamics wind testing.

TL571 9781567002829

Numerical Simulation of Viscous Perfect Gas Dynamics

Vyacheslav Antonovich Bashkin and Ivan Vladimirovich Egorov

Begell House, ©2016 364 p. \$348.00

Drawing from their articles in various Russian journals, Bashkin and Egorov summarize the results of their and their colleagues' many years of research on the numerical simulation of transonic, supersonic, and hypersonic viscous perfect gas flows based on the continuum mechanics equations for the problems of external aerodynamics. The first section considers steady and unsteady two-dimensional problems and the second section three-dimensional steady problems. Among the topics are circular cylinder in transonic viscous perfect gas flow, elliptic cylinder in supersonic perfect gas flow, supersonic viscous gas flow over a sphere, blunt axisymmetric bodies in supersonic and hypersonic flow at zero angle of attack, and verification of the numerical simulation method.

TL787 9780877036296

Astrodynamics 2015: Proceedings of the AAS/AIAA Astrodynamics Specialist Conference; 4 volume set (CD-ROM included)

Edited by Manoranjan Majji, James D. Turner, Geoff G. Wawrzyniak, and William Todd Cerven (Advances in the Astronautical Sciences; Volume 156)

American Astronautical Society, ©2016 4480 p. \$790.00

The 254 papers presented during the August 2015 conference are collected in four volumes and arranged into sections as attitude dynamics and control, spacecraft navigation and control, trajectory design, high performance computing, formation flying, and orbital debris. Special sessions address space situational awareness, asteroid and non-earth orbiting missions, the Messenger mission, and the Mars reconnaissance orbiter. Two opening papers from the Center for Space Standards and Innovation update the consolidated files for earth orientation parameters and space weather data, and analytical partials for

covariance transformations and optimization. Astrodynamics researchers propose a variable step numerical integration across eclipse boundary conditions for HAMR objects, equilibrium points for the perturbed rotating mass dipole, a set of relative orbit elements for low-thrust control, and a longitudinal approach for station keeping of a GEO satellite. Other topics include Gauss-Bingham distribution for attitude uncertainty propagation, seasonal variations of the James Webb space telescope orbital dynamics, containment of moderate eccentricity breakup debris clouds, and drag coefficients for the ANDE satellites.

TL1500 9780877036333

Spaceflight Mechanics 2016; Volume 158; 4 volume set (CD-ROM included)

Edited by Renato Zanetti, Ryan P. Russell, Martin T. Ozimek, and Angela L. Bowes (Advances in the Astronomical Sciences)

Univelt Inc., ©2016 4796 p. \$810.00

The four volumes document the 26th sitting of the Spaceflight Mechanics Meeting with 276 technical papers delivered to 28 sessions on aspects of spaceflight mechanics and astrodynamics, including the eighth special session: Global Trajectory Optimization Competition. The other areas they cover are attitude determination, trajectory optimization, spacecraft dynamics, spacecraft autonomy, estimation, mission design, guidance and control, attitude dynamics and control, dynamics and perturbations, orbital debris and space environment, satellite constellations, dynamics: models, orbit determination, spacecraft relative motion, asteroid and non-Earth orbiting missions, space situational awareness, spacecraft rendezvous, and navigation.

CHEMICAL TECHNOLOGY

TP159 9789813146723

Semiconductor-Based Sensors

Edited by Fan Ren and Stephen J. Pearton

World Scientific, ©2017 480 p. \$148.00

Specialists in a wide variety of sensor summaries the state of the art for readers who are involved with sensors or are entering the field. Their topics include biomimetic fractal nanometals as a transducer layer in electrochemical biosensing, the stability and reliability of III-nitride based biosensors, electronic micro-sensors for metabolic detection based on conductivity change of polyaniline, scalable nanomanufacturing of broadband anti-reflection coatings on semiconductors, and gallium nitride microelectronics for high-temperature environments.

TP758 9780784413890

Earthquake-Actuated Automatic Gas Shutoff Devices

Edited by American Society of Civil Engineers (ASCE Standard; ANSI/ASCE/SEI 25-16)

American Society of Civil Engineers, ©2016

21 p. \$70.00 (pa)

In this book, The American Society of Civil Engineers presents readers with a comprehensive guide to the design, construction, use, and maintenance of a variety of earthquake responsive automatic gas shutoff devices for use in a variety of settings. The material that makes up the main body of the text is focused on the applicability, operation, marking, and warranties of the devices themselves; device specifications, resistance to corrosion and external chemicals, and their continued operation, and a wide variety of other related subject areas and specific topics.

NOT FOUND

UB251 9781482260212

Biometrics in Support of Military Operations: Lessons From the Battlefield

William C. Buhrow

CRC Press, ©2017 175 p. \$89.95

The author, who has served as a US Army intelligence officer and worked in biometrics and identity intelligence for Department of Defense clients, describes how biometrics has been and can be used in military operations, particularly in ground combat and supporting operations in Iraq and Afghanistan. He explains the need for biometrics, basic concepts, general operational issues, biometrics support for offensive and defensive operations and operations across the military spectrum, and their potential use in other areas like foreign diplomacy and the Secret Service.

UG1242 9781498715423

Theory, Design, and Applications of Unmanned Aerial Vehicles

A. R. Jha

CRC Press, ©2017 294 p. \$89.95

This text outlines the theory, design, and applications of unmanned aerial vehicles, including commercial and military applications, propulsion systems and electrical sources, and survivability. Chapters also detail basics like definitions, attributes, manned vs. unmanned vehicles, design considerations, life cycle costs, architecture, components, payload, communications, data links, and ground control stations, as well as types and civilian roles, sensors and characteristics, alternative power, conceptual design, human-machine

interface, sense and avoid systems, civil airspace issues and integration efforts, navigation system and flight control system requirements, autonomous control, swarming, and future capabilities.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z666 9781522522218

Developing Metadata Application Profiles

Edited by Mariana Curado Malta, Ana Alice Baptista, and Paul Walk (Advances in Web Technologies and Engineering)

Information Science Reference, ©2017 248 p.

\$170.00

Scholars in library and information science, computer science, engineering, and other fields explore the processes for developing metadata application profiles in an increasingly complex world of data, information standards, and requirements for data exchange. After an overview of application profiles, they cover the development of an optimized metadata application profile, the minimum mandatory metadata sets for the Knowledge and Information Management Through Life Project and the RAIDmap software, a methodology for effective metadata design in Earth observation, the development process of a metadata application profile for the social and solidarity economy, development metadata application profiles for open educational resources federated repositories: the case of the open discovery space metadata application profile, using reverse engineering to define a domain model: the case of the development of a metadata application profile for European poetry, and involving data creators in an ontology-based design process for metadata models.

Z674 9781522518716

Library and Information Services for Bioinformatics Education and Research

Edited by Shri Ram (Advances in Library and Information Science)

Information Science Reference, ©2017 290 p.

\$190.00

Library and information scientists describe the new resources and concepts that their professions are making available to educators and researchers in bioinformatics, as libraries become information hubs and library serviced become user-centered services that allow searching, consolidation, and integration to support research. Their topics include library services for bioinformatics: establishing synergy data information and knowledge, principles and the analysis

of biological networks: biological pathways and network motifs, an overview of biological data mining, a librarian's view of information needs and assessment of bioinformatics students at the University of Swaziland, and open access journals in bioinformatics.

Z678 9781785607318

Innovation in Libraries and Information Services

Edited by David Baker and Wendy Evans (Advances in Library Administration and Organization; Volume 35)

Emerald, ©2017 318 p. \$114.95

International contributors in library science, collection development, data protection, informatics, information systems, and strategic information management offer case studies on latest innovations in LIS. Each of the book's 12 chapters includes an abstract outlining the purpose, methodology, approach, findings, and research and practical implications of the research described in the chapter. Some specific subjects examined include data literacy in academic libraries, the development of document supply, open source systems and shared services, leading the innovative library workforce, and creating a customized local serials collection. The final chapter describes new approaches to digital strategy in the 21st century. B&w photos, process diagrams, and screen shots are included. Distributed in North America by Turpin Distribution.

Z682 9780838915295

Becoming a Reflective Librarian and Teacher: Strategies for Mindful Academic Practice

Michelle Reale

ala editions, ©2017 124 p. \$57.00 (pa)

Reflective by nature and a diarist since the third grade, Reale begins her book with a focus on reflective practice for professional librarians, in particular those who teach at the college level, and then segues into strategies for teaching and mediating student reflection in the classroom. She believes and works from the premise that an education of any kind should not give reflection assignments or otherwise expect students to use reflection, in any way, in the classroom if they themselves have not used and do not understand the practice. Aiming for a book that is informative, prescriptive, and supportive of a more conscious, intentional, and active professional practice for librarians, Reale writes her book in a conversational style, in a style that she would like to read if she were new to reflection practice and pedagogy.

Z711 9781476664743

Teaching Technology in Libraries: Creative Ideas for Training Staff, Patrons and Students

Edited by Carol Smallwood and Lura Sanborn McFarland, ©2017 219 p. \$55.00 (pa)

School, public, and academic librarians from the US provide 28 essays that share their ideas on teaching technology to staff, patrons, and students. They outline case studies and instruction methodology in terms of scaffolding, digital literacy development, multiple instruction styles, and other topics; teaching staff to teach patrons; teaching hardware, software, and code, including starting a device club, designing a software class, online video tutorials, and mobile computer lab services; and strategies, planning, and partnerships related to marketing and managing technology education, planning a library-based workshop series, balancing technology education with reference and instruction, peer-to-peer instruction for faculty, information literacy and metaliteracy, and linking the academic library with the school library to work with pre-service teachers.

Z716 9780838915424

Collaborating With Strangers: Facilitating Workshops in Libraries, Classes, and Non-profits: A How-To-Do-It Manual for Librarians

Bess G. de Farber, April Hines, and Barbara J. Hood (A How-To-Do-It Manual for Librarians)

Neal-Schuman, ©2017 144 p. \$55.00 (pa)

This guide show those in libraries and other organizations how to promote, facilitate, and evaluate collaboration development workshops in their communities. It outlines step-by-step practices for initiating collaborative relationships through CoLAB Workshops (developed by de Farber), which provide comfortable environments for meeting strangers and facilitate the discovery of hidden resources or potential partnership relationships, generate innovative ideas for innovation and research, and advance the resolution of problems by leveraging untapped assets, with an emphasis on one-on-one "speed-meetings." It explains the key role of engaging strangers in face-to-face conversations in forming new partnerships and the steps needed to execute scenarios of workshops for diverse types of participants or situations. It describes two past CoLAB Workshops; results and participant stories for CoLAB Workshops; instructions for conducting them; different options for CoLAB activities in meetings or conferences and strategies for workshops that focus on a specific topic, region, across disciplines, or grant proposals; finding sponsors for

workshops; designing and pushing out promotional materials, designing a workshop website, and using social media for postworkshop connections; and recommendations for dealing with 20 different situations that may arise.

INFORMATION RESOURCES

ZA3075 9781607326571

Information Literacy: Research and Collaboration Across Disciplines

Edited by Barbara J. D'Angelo, Sandra Jamieson, Barry Maid, and Janice R. Walker (Perspectives on Writing)

University Press of Colorado, ©2017 436 p.
\$40.00 (pa)

This volume consists of 20 chapters that draw together scholarship and pedagogy on information literacy in higher education from multiple perspectives and disciplines. Contributors from the US and elsewhere address the core concepts of the Association of College & Research Libraries' Framework for Information Literacy for Higher Education and illustrate its relevance, as well as related threshold concepts, metacognition, large-scale research studies, programmatic and institutional efforts to institutionalize information literacy, and pedagogical innovations. Each section focuses on a core area of information literacy: how and why information literacy is a contextual concept based on threshold concepts and metaliteracy, with discussion of information literacy and writing instruction, employer expectations of information literacy, Web 2.0 and

information literacy, and information literacy in digital environments; researching information literacy, in relation to college composition, core courses, the practices of novices, understanding and using sources, and first-year composition; incorporating and evaluating information literacy in first-year composition and disciplinary subject courses; and collaboration between writing studies faculty and librarians.

ZA4228 9781473918788

The Sage Handbook of Online Research Methods, 2nd Edition

Edited by Nigel G. Fielding, Raymond M. Lee, and Grant Blank (Sage Reference)

SAGE, ©2017 655 p. \$175.00

This handbook contains 36 chapters by social scientists from Europe, North America, Israel, and Australia, who explain the use of online research methods in the social sciences, focusing on practical aspects. They address designing online research, including ethics, and data quality; online data capture and collection, including research design and tools, nonreactive data collection, and data mining; online surveys; digital quantitative analysis; digital text analysis; virtual ethnography, including interviews and focus groups; online secondary analysis; and the future of online social research, including engaging remote marginalized communities, web and phone-based data collection, and social cartography. This edition updates content and has new chapters on social media, big data, data visualization, computer-assisted qualitative data analysis, gaming, and participatory research.

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