

Summer 2017

SciTech News Volume 71, No. 3 (2017)

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Recommended Citation

(2017) "SciTech News Volume 71, No. 3 (2017)," *Sci-Tech News*: Vol. 71: Iss. 3, Article 1.
Available at: <https://jdc.jefferson.edu/scitechnews/vol71/iss3/1>

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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 3 (2017)
ISSN 0036-8059

SciTech News



On the Cover

Eclipse, Aug. 21, 2017

"As millions of people across the United States experienced a total eclipse as the umbra, or moon's shadow passed over them, only six people witnessed the umbra from space. Viewing the eclipse from orbit were NASA's Randy Bresnik, Jack Fischer and Peggy Whitson, ESA (European Space Agency's) Paolo Nespoli, and Roscosmos' Commander Fyodor Yurchikhin and Sergey Ryazanskiy. The space station crossed the path of the eclipse three times as it orbited above the continental United States at an altitude of 250 miles."

Photo and Caption Credit: NASA, JSC. Available for public use at <https://images.nasa.gov/#/details-iss052e056122.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

SciTech News

Volume 71, Number 3 (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

Welcome to the post-conference issue of *SciTech News*! I hope attendees have long since recovered from those record-breaking temperatures and have made strides on all those great ideas and connections you made during our days together in Phoenix.

If you were unable to attend this year or just feel like the conference is but a distant memory, the contributors in this issue have done an outstanding job of providing recaps and reports on the various conference offerings. Without their diligent reporting, this issue wouldn't be possible.

Being the Editor of *SciTech News* has provided me with an amazing opportunity to connect with so many more people in our organization, but the conference is where I get to connect names with faces that I only normally 'see' in cyberspace.

And speaking of the Editor position of *SciTech News*... I'm approaching my four-year anniversary of working on this publication (2 years as Assistant Editor, 2 years as Editor). While it has been a rewarding experience, I will be looking to move on to other opportunities in the new year.

So, my plea for those looking for an oppor-

Christine Malinowski



tunity to contribute has a new level of urgency! ***Sci-Tech News* is looking for a new editorial team!**

Requirements:

- proficiency with layout software (ideally, Adobe InDesign or equivalent) and access to a computer capable of running the software
- ~10-15 hours for each of 4 quarterly issues
- an interest in science journalism and the library profession
- English language and writing skills & attention to detail

Perks:

A small stipend, payable either as cash or in the form of an SLA annual meeting registration subsidy, is available for the editorial team members. The Division of Science and Technology is able to cover the annual costs of an Adobe InDesign Creative Cloud license should an interested individual not have access to one.

Interested?

Contact me, Christine Malinowski (cmalinowski@post.harvard.edu), for more info.

Ways to contribute to *SciTech News*:

- **Become the Editor or 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.

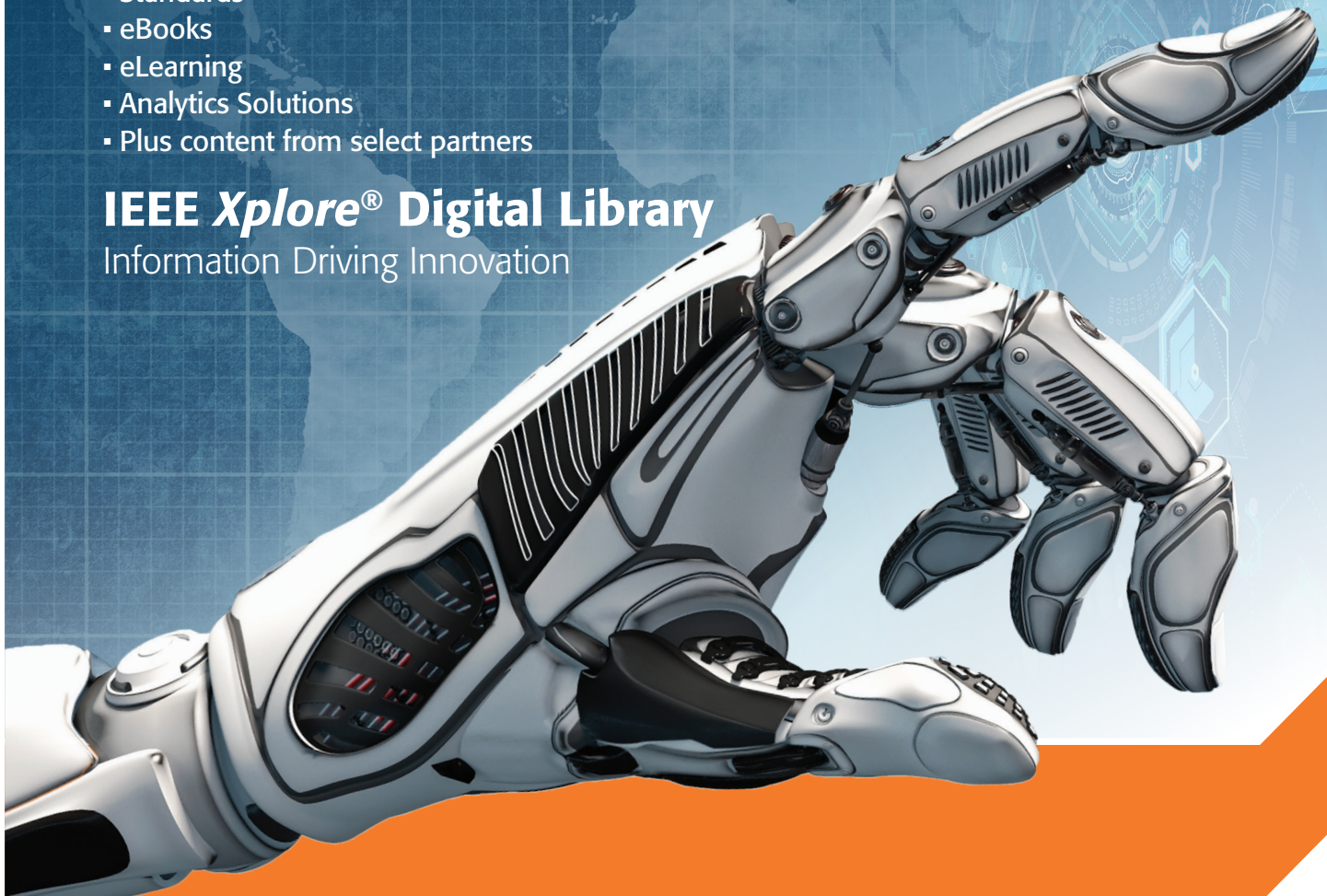
If any of these opportunities appeal to you, contact the Editor, Christine Malinowski, cmalinowski@post.harvard.edu with questions and/or content.

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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.'



Experiencing Phoenix, AZ during a record-setting heat wave allowed every conference attendee to appreciate the science and technology that brings us air conditioning and guidelines for commercial aircraft operation. The city and conference venue staff were lovely, and it was an enjoyable and informative conference. Beth Thomsett-Scott, Chair Elect, and I also represented the division at the Division Cabinet and Joint Cabinet meetings and attended a Treasurer's update meeting on Saturday, June 17. There is a new central Recommended Practices document for units to review and potential updates to our division's recommended practices document will likely result in the next year or two. The Treasurer's meeting included a presentation and Q/A session with the manager of the pooled fund investments, and attendees confirmed that each unit retains control over their percentage of those invested funds as well as interest/revenue earned on that percentage. The division hosted several conference events, social and educational, summarized below.



SciTech Division No-Host Dinner
Photo credit: Bernice Koh

SciTech Division No-Host Dinner Saturday evening was well attended. As our division selected option 2 for the 2017 conference, and thus ceded both conference sponsorship solicitation and coordination of some event aspects to HQ staff, we had little control over the signups/coordination of the dinner venue, but "1130 The Restaurant" was delightful and located near the convention center. Two of our award winners were able to attend and meet members of the division, and we even mixed a bit with the Engineering Division's dinner as they were located in the same restaurant.

Unit Main Street Kiosks in the INFO-EXPO hall were a new experience this year, and several chapters and divisions had kiosks, including DST. We all learned from one another how best to use the booths for outreach to current and new members. I gained a new appreciation for our vendor partners while spending several hours at the kiosk, and enjoyed meeting many folks I'd only known from emails and Connect posts. Thanks to everyone who worked a shift at the booth, for everyone who stopped by to network and learn more about the division, *SciTech News*, and volunteer opportunities. SLA offered a discounted rate for adding division membership, and we've gained eight new members since the June issue of *SciTech News* - welcome!

Infographics for Publication: Taking Data Viz Further James Manasco and Mary Frances Lembo provided another installment of the ever popular Sci Tech 101 programs, this time with very useful tips for design of infographics. Mary Frances shared best practices, good examples, and horrible warning samples for infographic content and design. James provided reviews of several free or in-



2017 Cabeen award presentation: Sue Wainscott, Chair of DST; William Goodman, SPIE award sponsor; Rebecca Greenstein, award winner
Photo Credit: PK Jain

expensive infographic software options and described pricing and utility for various types of library settings. The presentation slides can be found in the conference app under Mary Frances' profile.

Interweaving ACRL's Threshold Concepts into an Information Literacy Program This master class panel discussion focused on how an educational theory, threshold concepts, have influenced the work of science and engineering librarians



2017 Foster award presentation: Sue Wainscott, Chair of DST; Jayamanne Mohottige Shalani Dilinika, Diane K. Foster International Student Travel Award winner; PK Jain, Chair of the Asian Chapter
Photo Credit: PK Jain

in academic and special library settings, and several examples of threshold concepts' application in academia and a medical library were described. Lori Townsend, Engineering Librarian & Learning Services Coordinator, University of New Mexico Libraries; 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 presented. A resource-rich handout and their slides are available in the SLA Connect system, in the Sci-Tech Division Open Community's library. SLA members may request to join this community even if you have not yet joined the Division.



2017 Hilditch presentation: Sue Wainscott, Chair of DST; Randolph Mariano, Bonnie Hilditch International Award winner; Photo Credit: PK Jain

All Sciences and Engineering Poster Session & Awards Reception wrapped up the Division's conference programs, and I celebrated several award winners, retirees and long time members of SLA. I was also able to publically thank all of the DST volunteer leaders with Chair Appreciation Award certificates. DBIO and DCHEM also presented awards at the opening of the reception, and then we were all busy chatting with and learning from presenters for twelve poster sessions. Extra thanks to Beth Thomsett-Scott, 2017 Conference Planner and DST Chair Elect, for ensuring that the

poster boards arrived at the venue, and for last-minute furniture layout in the room. She makes this behind the scenes event planning and logistics work look effortless, and I appreciate her grace and knowledge! Beth and our 2018 Conference Planner, Vanessa Eyer, are already working on the Baltimore event plans, and I hope to see many of you in Maryland next year.



2017 Koopman award presentation: Geeta Paliwal, award winner; George Zajdel, ASTM award sponsor; Sue Wainscott, Chair of DST
Photo Credit: PK Jain

Science-Technology Division New Members

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

The Science-Technology Division welcomes its new members from May 2 - August 1, 2017:

Easter DiGangi
Yorktown, VA
USA

Sally Fell
Roaming Shores, OH
USA

Carolyn Jackson
Bryan, TX
USA

Angela Olmstead-Gaete
Silver Spring, MD
USA

Deepa Singhal
Delhi
India

Robert Tomaszewski
Fullerton, CA
USA

Jason Tuosto
New York, NY
USA

Chris Wiedman
Ottawa, ON
Canada

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!

A big thank you to the Chemistry Division's Board, Speakers, Moderators, and Volunteers for a successful SLA 2017 in Phoenix, AZ.

A special thank you to our conference co-planner, Kiem Ta, who helped during the past year and a half with the brainstorming and logistics of conference planning.

Thank you to our Division sponsors: ACS Publications, Chemical Abstracts Service, and Elsevier.

Thank you also to our co-hosting Divisions: Physics Astronomy and Math, Competitive

Intelligence, Science and Technology, and Engineering.

Congratulations to division members Kortney Rupp, the 2017 Sparks Award winner, and to John Kromer on being an SLA 2017 Rising Star.

For presentation slides please check the SLA conference planner. Slides are under each author's profile. Slides will also be posted to the Chemistry Division's website at <http://chemistry.sla.org>

If you have thoughts and ideas for SLA 2018 in Baltimore please contact Heather Lewis at hslewin@iastate.edu.

DCHE Welcomes New Members

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

Susan Heckethorn

Zoe Unno
University of Southern California

Carolyn Fennell
East View Information Services

Marie Nardi
Sanofi Genzyme

Sonja Siegenthaler
Sika Technology AG

SLA Annual Meeting Report

by Kortney Rupp (*Marion E. Sparks Professional Development Award*)

The 2017 annual Special Libraries Association conference may have been another conference among many for those in attendance, it will, however, always have special significance to me for several reasons. It was my first annual conference as a brand new academic librarian, having only been in my new position as the Chemical Information Librarian at the University of California, Berkeley, for two weeks before attending. It was also an opportunity to represent both my new employer and the institution where I completed my MLIS degree. I was able to tie these two amazing library systems together by applying for the Marion E. Sparks Professional Development Award.

Sparks was the first chemistry librarian at the University of Illinois at Urbana-Champaign. She was a pioneer in the field of chemical information. Although she died tragically young, her impact at Illinois will not be forgotten. I was honored to complete projects on behalf of the chemistry library at UIUC during my tenure as a graduate assistant at Grainger Engineering Library and Information Center. So, you can imagine how excited I was to apply for a travel award in her name. After being selected for the award I knew that attendance at my first library conference would put me in the ideal location to network with many talented and passionate librarians. One aspect of being a subject specialty librarian is that you often spend a lot of time alone and far away from other chemistry librarians. National meetings are a great opportunity to meet and discuss common issues and interesting solutions that your counterparts are now dealing with. One librarian I was particularly pleased to meet was Judith N. Currano the current head of

the chemistry library at the University of Pennsylvania. She never disappoints when giving presentations and, at this meeting, gave a great overview for chemical patent searching.

I have attended other conferences and am used to the presentation structure, people talk and you listen and maybe have time for a question or two at the end. The thing I appreciated the most about SLA is that the structure of the sessions varied. I attended traditional lecture-style sessions, round table discussions, vendor updates and panel discussions. It



Rupp accepts her award at the All Sciences Reception

was valuable meeting vendors at the INFO-EXPO and attending demonstrations of new products that might be of interest to my patrons. I also enjoyed the receptions and met journal editors, other Berkeley librarians, information professionals from the bay area and people I just really enjoyed being around. I am grateful for the opportunity provided by the Chemistry Division to attend the conference and look forward to my next SLA meeting.

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.

Engineering Division Annual Conference Report by Andy Shimp (2017 Annual Conference Program Planner)

I am pleased to report a successful annual conference in Phoenix! The sessions we hosted and co-hosted were well received.

Our level of programming and award funding would not have been possible without the generous support of our sponsors. Please join me in thanking our 2017 sponsors:

- ACM
- ASCE
- ASME
- ASTM
- Elsevier
- IEEE
- IET
- IHS
- SPIE

If you were not able to attend the annual conference, you will find below summaries and photographs of selected sessions and events presented by the Engineering Division.

Tour of Frank Lloyd Wright's Taliesin West

Saturday, June 17, 2017

Session Reporter: Becca Smith



Taliesin West exterior

The forty-three attendees took a ninety-minute guided tour of the structures and gar-

dens of Taliesin West. The tour guide gave historical insights into the lives of those living on the grounds over the years working with Wright and the current projects of the Wright Foundation.

Library Applications for Wearable Technology and the Internet of Things

Sunday, June 18, 2017

Session reporter: Becca Smith

Session speaker, Tom Bruno, is a librarian and author of "Wearable Technology: Smart Watches to Google Glass for Libraries". He worked at Harvard and Yale and is currently the Director of Knowledge Curation and Innovation at the Westport Library. Bruno explored the history, present, and possible future of myriad wearable technologies from Perseus' winged sandals to the invention of eyeglasses in the 13th century. He continued with the introduction of Google Glass and smart watches along with the potentials of augmented reality, virtual reality, and blended reality. He deftly explained that wearable technologies should be "seen as a continuum of human progress and not thought of as a fad." The "fad factor" sees many users quick to adopt these new trends but then just as quickly rush to criticize them if expectations are set too high. His work with the Google Glass Library Project at Yale provided him with a unique first-hand experience with implementing wearable technologies within library programs. In this project, Google Glass devices were loaned on a project basis; library staff were trained to demonstrate the device to faculty, staff, and stakeholders. A "petting zoo" provided opportunities to utilize the technology.

Bruno detailed how some technologies are easier to provide within a library than oth-



Speaker Tom Bruno

ers. GoPros are great for libraries due to their relatively low cost and their durability. Smart watches, on the other hand, raise the question of whether this technology is a standalone item or more of a smart phone accessory.

QR codes, iBeacon, Blubeam, NFCs (near-field communications) can provide an interesting way for libraries to connect with their users. With the use of these technologies, libraries can become laboratories: “safe spaces for patrons to interact risk-free.”

Supporting Entrepreneurship and Innovation: Makerspaces and Beyond

Sunday, June 18, 2017

Session Reporter: Brian McCann

This panel included a professor and an administrator at Arizona State University and one public librarian from the Phoenix suburb of Buckeye. ASU has about 98,000 students—20,000 in the Engineering program alone, so the school is very well set to explore new tech options. ASU has been working on developing makerspaces to grow businesses and their own educational endeavors. Micah Lande noted that makerspaces often share key attributes including:

- A sharing ethos
- Practical ingenuity
- Personal investment (as when one chef combined his son’s love of robotics to build a pancake-making robot)
- Playful invention
- Community building
- Facing failure as a badge of courage

Speaker Ji Mi Choi added that entrepreneur-

ship is typically collaborative and inclusive which makes it an excellent fit with maker-spaces.

Janene Van Leeuwen is an outreach coordinator with the Buckeye Public Library System which heads up efforts to connect patrons with resources to start or run their own businesses. The city of Buckeye has grown tremendously in the last decade especially as startup cultures have grown so quickly around Phoenix, and the local economy needs more small businesses to keep the drive going. She reminded us that 90% of a city’s economic drive is from small businesses. Your greatest obstacles, Van Leeuwen said, are time, distance, and money.

The Frankenstein Bicentennial Project: Science Fiction as a Lens for Examining Science and Society Issues

Monday, June 19, 2017

Session reporter: Shazia Arif

This session was presented by Bob Beard and Peter Nagy from Arizona State University.

Arizona State University is acting as the network hub for the bicentennial celebrations and the speakers shared some of the initiatives and public programs that have been planned, such as art projects, festivals, scientific demonstrations and competitions.

This was one of my favourite sessions. As an undergraduate English Major, I studied Mary Shelley’s Frankenstein for my BA and I’m particularly interested in feminist interpretations of the novel. The recently published annotated edition includes seven essays on science and society, and I’m particularly looking forward to reading the one which looks at how gender influences the relationships in the novel.

After attending this talk, I have incorporated some of the themes and projects highlighted in this session for my information literacy instruction for first year engineering students at my workplace, Brunel University London.

Check out the links below to learn more

about the project and the novel's enduring legacy:

- <http://frankenstein.asu.edu/about/>
- ["I've Created a Monster! And so can you,"](#) *Slate - Future Tense*, May 22, 2017
- ["Mary Shelley's Frankenstein shows us how science fiction predicts the present and shapes the future,"](#) *Boing Boing*, May 22, 2017
- ["Science books we're keen to read in 2017,"](#) *The New Scientist*, January 4, 2017
- G. Pascal Zachary, ["What Mary Shelley's Frankenstein Can Teach Engineers,"](#) *IEEE Spectrum*, January 25, 2017
- Holly Else, ["Frankenstein comes back to life for new generation of scientists,"](#) *Times Higher Education*, April 19, 2017
- Philip Ball, ["Frankenstein' Reflects the Hopes and Fears of Every Scientific Era,"](#) *The Atlantic*, April 20, 2017
- ["Genetic testing; Pugs on treadmills; Frankenstein,"](#) *BBC Inside Science*, July 13, 2017

Standards Update

Monday, June 19, 2017

Session reporters: Becca Smith and Teresa Powell

It is a long-standing tradition at the annual conference to hear from SDOs (standards development organizations) and standards content aggregators regarding the new products and services they are offering. This year's update included representatives from ANSI, ASCE, ASME, ASTM, CSA Group, Document Center Inc., IEEE, IHS Markit, MADCAD, SAE, and Techstreet/Clarivate Analytics.

George Gulla from ANSI described their new Standards Connect product as having an intuitive interface and a powerful search filter. It offers cross references, the ability to add personal annotations, create alerts and watch lists, mark favorites, and permalinks to documents. The administrative module facilitates managing access and provides reporting capabilities. New standards are

forthcoming to address aging society, mobile health, dietary supplements, drones, wearable technologies, smart/additive manufacturing, smart sustainable cities, cyber-security, and the marijuana industry.

William Nara from ASCE reported that ASCE 7-16, Minimum Loads and Associated Criteria for Buildings and Other Structures was recently published. This standard was seven years in the making. Their new ASCE 7 online platform will be released in the summer of 2017 and provides access to both ASCE 7-10 and 7-16. Users will be able to view the Provisions and Commentary from each version of the standard side-by-side. It will also feature redline tracking and annotation and bookmarking tools. The new ASCE 7 Hazard Tool will also be available online, bringing all seven environmental hazards together.

Reporting from ASME was Warren Adams. He indicated new standards are forthcoming in the areas of thermal energy storage systems, aerospace & advanced engineering drawing (AED), nonmetallic pressure piping materials (NPPS), self-propelled motorized transporters, drones for inspection, and the Boiler Pressure Vessel Code (BPVC) section 13, 2019 edition. They are also offering a new platform for academic customers to introduce students to standards.

John Pall from ASTM discussed their new Compass platform for subscribers which includes PDF and HTML views and can be searched in 13 languages. Enhancements include the ability to redline on demand and a new spec builder. This allows the ability to create internal standards for an organization which can link to ASTM documents. They are focusing on standards as data, making standards machine-readable (RDF - resource description format), and semantic search. New standards in development include additive manufacturing standards (3D printing) and marijuana standards (medical safety).

Patti Ensor from the CSA group reported they have been working on improved search and content organization. They have increased the number of redline documents with the

help of Techstreet. They are moving to the ePub format which will allow highlighting and the ability to annotate text. They will be replacing their subscription platform in 2018. The new platform will offer new features including reports, usage insight, offline access, highlighting, and bookmarking. New standards topics include: home inspection standard, medical devices, well design, compressed gas exam prep, and the 2018 Canadian Electrical Code.

Representing Document Center Inc. was Claudia Bach. She discussed the new NISO Z39.102 Standards Tag Suite which will enable standards to be machine readable. As a standards aggregator and reseller, she indicated they are focused on the customer and their approach is to align with the customer's goals.

Michael Spada from IEEE reported that the 2017 National Electrical Safety Code is now available on the Xplore platform. They also offer an app for the code handbook which provides an overview of the NEC. On the Xplore platform, they have converted journal articles and conference papers to a more robust HTML format and are now working on converting standards. This will allow the ability to navigate and search within standards. Michael also discussed the IEEE Standards University which includes MOOCs, tutorials and webinars. Standards in development relate to artificial intelligence, Internet of Things (IOT), and virtual reality.

IHS Markit's representative was Jeff Cloutier who reported they have completed the merger. They are focusing on growing standards content and are now the exclusive partner with the American Welding Society (AWS). They have over 400 partners and offer access to 1.8 million standards. New standards topics include cyber, Internet of Things (IOT), and additive manufacturing. Their new product, Engineering Workbench, focuses on workflow integration.

Erdem Dedebras from MADCAD discussed their cloud-based platform. MADCAD focuses on construction and architecture engineer-

ing, offering 80,000 codes and standards. They have introduced new tools to integrate the research process into workflows. Users can create projects in their tool's eProjects module. The eNotes module allows users to place notes on codes and standards that can be personal or shareable. Their focus is to build institutional knowledge bases that connect resources together and create communities around content.

John Tintinalli represented SAE International. He reported that they launched the Mobilus platform last year. The platform also hosts their new knowledge hubs that focuses on topics like cybersecurity and powertrain. Standards under development include aerospace quality standards, counterfeit part detection, unmanned aerial vehicles, deicing, vehicle connectivity, 5G, active safety, road markings, and pedestrian detection. He also mentioned the new ISO/SAE revision of J3061 Cybersecurity Guidebook for Cyber-Physical Vehicle which covers wireless charging of electric vehicles.

Todd Fegan from Clarivate Analytics was the last speaker. He discussed the six flagship brands under Clarivate Analytics: CompuMark, Cortellis (life sciences), MarkMonitor (brand protection), Derwent (patent/IP research, replaces Thomson Innovation), Web of Science, and Techstreet. Their emphasis is on accelerating the innovation lifecycle. They are also focusing on enhancing content to include NATO, NASA, and UL standards. Their platform offers single sign-on, fully searchable content, and the ability to create a local document repository. Their goal is to balance digital rights management (DRM) and copyright. They do not require a plug-in to access documents.

It is always a pleasure to hear from these organizations, and we appreciate their support and continued participation in the annual conference Standards Update session.

Take Digital Notetaking to the Next Level

Tuesday, June 20, 2017

Session report: Becca Smith

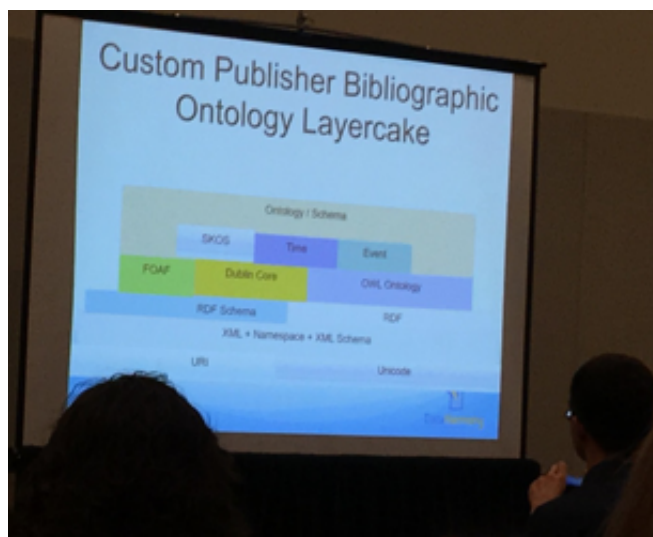
Quick Take session speaker Stacy Bruss is the Innovation and Reference Librarian at the National Institute of Standards and Technology (NIST) Research Library. The NIST Research Library Innovation Hub provides users with access to data visualization, 3D printing, and a Technology Bar with digital notetaking devices. Research has shown that handwritten notes will be retained longer than those typed. Digital notetaking has numerous benefits – providing portable access to journals and e-books, offering the freedom to naturally express complex concepts, and making the information more open and shareable. Some devices described were the PC digitizer, e-ink tablet, and the smart pen/smart pad combination. This technology can be incorporated into many existing library services including training, literature searches, user collaboration, e-resources, and can increase library space use. Bruss explained that in offering these tools, the library needs to ensure (1) space for sign displays, (2) staff have experience with the devices, and (3) a solid partnership with IT.

Linked Data: What's New with Knowledge Organization on the Web?

Tuesday, June 20, 2017

Session reporter: Becca Smith

This master class brought together three speakers to describe the value and importance of linked data in discovery services. Ashleigh Faith is the Semantic Enrichment Manager at EBSCO Information Services; David Stern is the Library Director at Saint



Linked Data slide

Xavier University; and Marjorie Hlava is an information engineer at Access Innovations. Session moderator Stacy Bruss is the Innovation and Reference Librarian at the NIST Research Library. Current metadata only provides general information on content with whole record level structure and granularity but provides little depth in regards to semantics. The RDA triplet is a relational tool that provides new linking associated with meaningful semantics to integrate disparate materials into one knowledge database, helping connect users to the knowledge they seek and “facilitate serendipity.” Through map terminologies and models and ontologies the user can access domains for a better knowledge transfer and search. LD4PE (Linked Data for Professional Educators) was recommended to further education in this more dynamic tool.

Engineering Division award winners reflect on their conference experience

Kristin Petersheim is a Technical Information Specialist at Caterpillar, where she currently acts as Document Delivery and Acquisitions Librarian and consults on projects related to knowledge management, instruction and outreach, and E-resource selection.

Petersheim graduated with her MLIS from the University of Illinois at Urbana-Champaign in 2015, where she received the Library School Alumni Association Student Award, served as Research Coordinator for Business Intelligence Group, and held two graduate assistant positions in special libraries. As an early-career librarian, Kristin is humbled to have received the IEEE Continuing Education Stipend, which enabled her to attend SLA for the first time.



My first SLA Conference was a superb experience that went beyond my expectations, which I owe to the generosity of IEEE and the Engineering Division of SLA. As the recipient of the IEEE Continuing Education Stipend presented by the Engineering Division, I am pleased to be able to share my conference experience with my peers and colleagues in science and technology librarianship.

My advice for anyone attending SLA for the first time, or for anyone looking to build new connections, is to attend a no-host dinner or dine around. I participated in the former, and met a small group engineering librarians

for dinner on Saturday night. Because the dinner was the night before CE sessions began, I found myself seeing familiar and welcoming faces the rest of the week during CE sessions and other vendor and division-specific events. This made SLA all the richer for me, because I had a built-in group of people to discuss session content, receive helpful pointers, or just say "hello!" which is heartening at a large conference.

One rewarding part of the conference was attending an organized breakfast bright and early each morning! As a non-morning person, I can see how they may not appeal to everyone, but strong coffee was available in abundance at each one. Conversations held during the Engineering Division Breakfast, IEEE Breakfast, and the Leadership and Management Division's Content Buying Breakfast were invaluable to me, because each shared diverse insights on issues that are common across info centers. The Engineering Division Breakfast was another place for me to meet fellow engineering librarians and discuss challenges and opportunities facing a variety of engineering and technical libraries. I was humbled and grateful to receive my stipend from IEEE during the breakfast and meet and congratulate the other Engineering Division award winners Jay Bhatt and Erica Saito.

As an NPR listener and someone familiar with Lulu Miller's journalism, I was intrigued to hear what she would have to say about the information profession. Her keynote was clever and full of librarian-centered quips, but also centered upon the meaningful message of "disobeying" our patrons' requests for information by sprinkling in random or semi-related extras. The idea is that the inclusion of this extra content will help inspire innovation and new paths that our patrons hadn't considered. Miller used her own experiences in journalism to give context, professing that many of her richer stories were stumbled upon by accident, while in pursuit of other information. To round off her talk,

she introduced a fun and empowering new hashtag: #SLAy.

Choosing from concurrent conference sessions was my biggest challenge. With so many intriguing topics and speakers, I was not able to attend every session I wanted. However, several stood out to me. During "Unlocking Government Information: Tips for Access to Restricted Databases," Megan Santa Ana of the Defense Technical Information Center and Barbara Williams of MIT gave tips and tricks for accessing DTIC and NTRS database content. Another noteworthy session was facilitated by JP Ratajczak, called "Emerging Tools in CI." I found this session to be very helpful in connecting CI with innovation, and introducing what could be expected out of CI technology in the next ten years. Overall, this session was helpful in connecting principles in innovation, and some of the technology used by my own customers in product development with the future technology of the information center.

While I could go into great detail about each session I attended, the session "'They Don't Know We're Here;' Promoting your library and performing in-house outreach," was the perfect session for one of my info center's own challenges: marketing to a global and diverse customer base. I walked away with goals I hadn't expected, like finding a venue to give away a giant Toblerone, and encouraging my customers to interrupt my work. Thanks to Brian McCann and Erin Campbell for making this session informative and applicable!

Attending as a branded "first-timer," I was not completely sure what to expect when I stepped into the Phoenix Convention Center. I thought I was prepared for the 119 degree weather, but as a Midwesterner I was not equipped to linger outside for long in the afternoons. I did, however, leave the conference with a long list of lessons learned and ideas for future initiatives and practices to incorporate into my work. Overall, I was very impressed by the navigability of the venue, the quality of the content, and the excellent SLA staff! Thank you again to IEEE, the En-

gineering Division and Awards Committee, and the SLA staff for enabling a wonderful educational experience.

Erica Saito is Master of Information student at Rutgers University. She holds a Library Science undergraduate from the University of São Paulo (Brazil) and has two Master's degrees in Libraries (Documentary Heritage and Digital Information Services) from the University Carlos III of Madrid (Spain). She started her career as a librarian at the University of São Paulo, and now she is a library consultant in Washington D.C.

Firstly, I want to thank the SLA Engineering Division for awarding me the SPIE Student Travel Stipend. I have no words to express what this means to me. I was born and raised in Brazil. To be a librarian there, you need to hold an undergraduate degree in Library Science. In 2006, I received my undergraduate degree in Library Science from Sao Paulo University, and when I was looking for my first job as a librarian, I received a job offer of R\$1,300.00 (at that time, around USD 650.00 per month). So I never thought one day I would be able to attend SLA Conference.

After I participated in the conference some friends that are not librarians asked me what I was doing in Phoenix and, I told them that I attended the SLA Conference. It was funny because people want to know why we are



Will Goodman (SPIE) and Erica Saito



special! The easiest way I found to explain them was telling that special librarians have cool jobs like Rosanna Lindquist, an Information Research Scientist at Hershey Company or Scott Brown, a Senior Cybrarian at Oracle Inc. The reaction was always the same: I never imagined that librarians are working in these companies and performing these jobs!

My advice for future attendees is to go to the First Timers and New Member Orientation where you will be able to meet other first timers attendants, but also have the chance to meet experienced SLAers that would share relevant tips about how to take advantage of the conference. Bring business cards to network: these connections can help you to find your next job!

I was impressed with the programs and presenters. I enjoyed the presentation of Sally Gore named ["Show me a story: storytelling using familiar tools"](#). It was a productive session where she asked the audience about good visualization options and why. She also provided a bibliography for those who want to learn more, and I already purchased a book called [Dear Data](#). I also attended the session ["Trends and tools from the greater library field \(and how special libraries can apply them\)"](#). One project mentioned by Teri DeVoe uses games for people to play and contribute to enhance metadata. I think this makes sense because many libraries are understaffed, so it is a creative way to engage volunteers.

Another session that called my attention was the Dream Jobs for Infos Pros on Monday (June 19th). I was glad to hear Robin Dodge, Rosanna Lindquist, and Brendan Thompson and their professional experience. Brennan Thompson mentioned during the Dream Jobs for Infos Pros that we cannot accept low paid jobs because if someone accepts, others will need to accept too. I was happy that I did the right thing when I did not accept the job offer when I finished my undergraduate school. These professionals showed me how versatile the career of information professionals is. The best takeaway from this session is that when I look for jobs, I need to look at the job description because sometimes I will not find a position with the title librarian, but if I read the job description it is a job that I can perform.

About the conference organization, I enjoyed that the Educational Sessions were centralized in the same area. I also liked the Exhibition. It was also an excellent opportunity to learn about new products and services relevant to my professional career. I was able to visit the SPIE and learn more about [SPIE Digital Library](#). I also visited Dow Jones booth and find out more about [Factiva](#), a Global News Database and Licensed Content. I also stopped at Altarama booth to understand better how [RefTracker](#) works. The conference app was helpful to plan the sessions I wanted to attend, and after the event, it is convenient to access the presentations.

I am preparing two presentations for undergraduate students in Brazil, and I will share things that I learned during this experience.

Finally, I must say that even for a Brazilian girl, the weather in Phoenix was challenging. It did not affect the lovely memories I take from the SLA conference. Amy Lestition Burke mentioned in one presentation that SLA is like family, and I felt this welcoming environment. See you next year!

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.

It was a joy to see so many familiar faces in Phoenix. As always it was wonderful to meet a bunch of new people who so graciously shared their stories of successes and of failures. I had the privilege to present the Mandel Award during the Engineering Division's annual breakfast to Betty Edwards, a long-time active SLA member. The heart of these conference experiences is the one-on-one learning opportunities with colleagues from all corners of the world.

The session the Aerospace Section co-sponsored with the Military and Government Information Divisions, called, "Unlocking Government Information: Tips for Access to Restricted Databases" sparked an informative discussion. The focus of the two presentations was the comparison between the Defense Technical Information Center's (DTIC) Public collection to the DTIC Unclassified Limited (DTIC UL) Collection; and of the NASA Technical Report Server's (NTRS) Public collection to the NTRS Registered (NTRS-R) collection.

Megan Santa Ana, lead librarian of DTIC Reference, explained the differences between DTIC public, <http://www.dtic.mil> and DTIC Unlimited. She outlined the unique features of DTIC Unlimited, reviewed the criteria needed to gain access, and walked us through the step-by-step registration process. Her presentation was enriched with black and white pictures that illustrated the story she so eloquently told. That story included the history of DTIC from its humble beginnings to its current stature. A helpful overview was understanding the A-E distribution levels: Distribution A publicly available, Distribution B federal government only, Distribution C federal government & federal contractors, Distribution D DoD & DoD contractors and

Distribution E DoD only.

A comparison between NTRS Public and NTRS-R was presented by yours truly. To summarize, NTRS is a collection of scientific and technical information covering a range of topics on aerospace research and development. NTRS is one collection with two interfaces, NTRS Public and NTRS-R. Nothing in NTRS public is limited, anyone with the URL, <https://www.sti.nasa.gov> can access its content. Whereas NTRS-R is a restricted database that permits access to individuals who are NASA employees, contractors, and grantees; registrants must be U.S. citizens or U.S. lawful permanent residents.

27% of the material in NTRS-R is limited. If NTRS-R is a restricted database how then can 73% of its content be classified as unlimited? Good question! Material not owned by NASA but housed in the NTRS Scientific & Technical Information collection is automatically restricted in its distribution. For example, information owned by DTIC may be publically accessible in a DTIC database but restricted in NTRS-R because NASA does not determine the distribution status of information it does not own. Therefore, such material is considered limited within NTRS-R and only accessible to registrants of the database.

During the discussion portion of the session it became apparent that there are some inconsistencies around the interpretation of what constitutes "direct involvement with a contract." Several corporate librarians acknowledged that they have access to NTRS Registered as librarians although they are not officially listed on any contract; a criterion that academic librarians have been told they have to meet. The good news is that

if you do not qualify for access to NTRS-R, email the STI information desk at help@sti.nasa.gov, and they can help you locate known items. They, however, cannot accommodate fishing expeditions.

NASA Documents in NTRS-R may be unavailable for public distribution because they have not undergone a sensitivity review. Some of you may recall that the NTRS database went dark in March of 2013. Unfortunately, when the database came back online a large number of its documents were still inaccessible as many await an official export control review to confirm them for public release. This is why the STI information desk encourages people to email NASA's helpdesk when they cannot find a NASA document. A request for a document in NTRS-R prompts a review process to determine if the document can be moved to NTRS Public. If it is not a NASA document, the NASA helpdesk may be able to point you to the agency that holds the copyright.

For me, the conference ended on a high note. On the day I was schedule to depart Phoenix for Massachusetts, I discovered my 3:10 p.m., flight was cancelled because af-

ternoon temperatures at Sky Harbor airport were projected to hit 119 degrees Fahrenheit. The American Airline Bombardier CRJ airplane I was scheduled to fly out on has a maximal operating temperature of 118 degrees Fahrenheit. The events that caused my flight to be rescheduled created a teachable moment. Teachable, because people wanted to know what role the high temperatures played in my flight being cancelled.

The air density was too low for the small Bombardier CRJ airplanes to take off. I learned that low density has an adverse effect on aircraft engines. Engines need enough thrust to takeoff, quickly climb to clear its immediate landscape, and land. Apparently, during takeoff, an airplane can compensate for the decreased air density by increasing its speed but the size of the plane will dictate the size of the runway needed. This gif explains it all: https://twitter.com/grant_gilmore/status/877110235823054848

Mark your calendars for next year; SLA 2018 Annual will be in Baltimore, Maryland, from Monday, June 11th until Wednesday, June 13th, 2018. Teresa Powell, our Chair-elect is likely already thinking of program ideas.

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 *SciTech News* readers,

It's been over a month since many of us beat the extreme heat in Phoenix, but it seems like it was only yesterday! Time does go very quickly! As a tradition for the *SciTech News* post-conference issue, there are many reflections on the association-wide or division-wide conference programs and events from other contributors. Therefore, my column highlights just a few sessions that were either co-hosted by ABCD Section or more pertinent to the ABCD Section members' interest.

First of all, the ABCD Section co-hosted a tour of Frank Lloyd Wright's Taliesin West in Scottsdale, and it was a great success. The event took place on Saturday, June 17. More than 40 SLA members attended the tour, despite the near-record high temperature in Arizona. Built in 1937 this spacious area served as Wright's winter home and the center of the Taliesin Fellowship. The campus also includes a cabaret theater, a mu-

sic pavilion, and Wright's private office, as well as many of the unique shelters built by Wright's students as their personal living quarters. This site was designated as a National Historic Landmark in 1982.



Photo Credit: Becca Smith



Photo Credit: Becca Smith

A special thank-you goes to Andrew Shimp, the Engineering Division 2017 Conference Program Planner, and Becca Smith, ABCD Section 2017 Past Chair for organizing the wonderful tour.

The Engineering Division's breakfast and awards was held on Sunday, June 18, 7:15am- 8:45am. Congratulations to all the award recipients!

The Standards Update session once again had a great turnout. Representatives from various Standards Development Organiza-

tions such as ANSI, ASCE, ASME, ASTM, CSA, etc. gave presentations about their new products. The long awaited ASCE 7-16 had just become available before the SLA Conference so the session attendees were among the first groups to know the availability of the ASCE 7-16. The Standards Update session has been part of the SLA annual conference for nearly 30 years!

For those members who were unable to attend this year's Conference, you might have already seen the *SLA 2017 Highlights* via email. There were many positive changes at this year's Conference. In addition to the excellent programs and events, having all conference sessions in one central location and setting the Main Street kiosks up at the Info-Expo floor were just so convenient for the conference attendees. SLA divisions, chapters, and caucuses also got opportunities

to showcase their resources. SLA 2017 was certainly an unforgettable one! The Conference photos are viewable on [Flickr](#). The papers presented at the Conference are accessible from the following link:

<https://www.sla.org/learn/research/sla-contributed-papers/2017-contributed-papers/>

The ABCD Section is seeking a "Chair-Elect". If you are interested in serving the Section and playing a leadership role, please contact me at: gwang@cement.org.

Thank you, and I look forward to seeing many of you in Baltimore next June!

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

Sci-Tech Book News Reviews Susan Fingerman, Selector



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

PRODUCTION, INDUSTRY, LABOR

HD39 9780749476991

Strategic Sourcing Management: Structural and Operational Decision-Making

Olivier Bruel

Kogan Page, ©2017 707 p. \$85.00 (pa)

Bruel collects into a single volume knowledge from the various facets of the strategic and operational management of procurement. His goal is to provide company professionals with a permanent working tool that examines all major professional themes at all levels, and to offer a comprehensive reference to methodology for student specialization courses and high-level continuous learning programs for executives and managers. He covers strategic decisions and supplier policies, the operational management of procurement, the organization and management of resources, and performance and change management.

HD45 9789813207264

Managing Technological Innovation: Tools and Methods

Edited by Turgrul U Daim (World Scientific Series in R&D Management; Volume 1)

World Scientific, ©2017 387 p. \$148.00

Daim invited authors who have published papers that demonstrate the use of an effective method or tool for managing innovation, to contribute chapters revised and updated from the papers. After looking at technology policy: determining effects of incentives for industry and competitiveness using system dynamics, they cover technology assessment, research and development management, new product development, and technology diffusion. Among specific topics are managing risks for disruptive technologies, the intellectual property scorecard, performance management, design risk assessment, and computational fluid dynamics for flow simulation in greenhouses.

HD2336 9781522519188

Remote Work and Collaboration: Breakthroughs in Research and Practice; 2 volume set

Edited by Information Resources Management Association

Business Science Reference, ©2017 752 p.
\$360.00

In this two-volume set, international contributors present guidelines, research, theory, and cases on collaboration and remote work in various industries and countries. Volume 1 presents material on business and enterprise perspectives, addressing topics such as collaboration in a cross-cultural environment, fostering social innovation through e-collaboration, Internet-based collaboration tools, and using collaboration technology to manage diversity in global virtual teams. Volume 2 contains sections on collaboration and remote work in education, health, human services, and the nonprofit sector, and discusses policy and legal issues. Some subjects examined are using Google Docs to collaborate in online teacher education, e-collaboration in biomedical research, collaborative cross-border security infrastructure and systems, and communication in virtual teams. The book contains b&w charts and diagrams. Its audience includes students, scholars, researchers, and policy makers.

MATH, COMPUTERS

QA166 9783110476699

Topological Theory of Graphs

Yanpei Liu

De Gruyter, ©2017 357 p. \$149.99

Drawing mostly on his own findings and those of his collaborators, Liu presents a topological approach to combinatorial configurations, in particular graphs, by introducing a new pair of homology and cohomology through polyhedra. He then uses this new approach to solve a number of problems. His topics are polyhedra, surfaces, homology on polyhedra, polyhedra on the sphere, automorphisms of a polyhedron, Gauss crossing sequences, cohomology on graphs, embeddability on surfaces, embeddings on spheres, orthogonality on surfaces, net embeddings, extremality on surfaces, matroidal graphicness, and knot polynomials. For the English edition, he has incorporated developments since the 2008 Chinese original.

QA251 9781470436940

Quantum Cluster Algebras Structures on Quantum Nilpotent Algebras

K. R. Goodearl and M. T. Yakimov (Memoirs of the American Mathematical Society; Volume 247, Number 1169)

American Mathematical Society, ©2016 119 p. \$75.00 (pa)

Goodearl and Yakimov prove that all algebras in a very large, axiomatically defined class of quantum nilpotent algebras possess quantum cluster algebra structures under mild conditions. Furthermore, they show that these quantum cluster algebras always equal the corresponding upper quantum cluster algebras. Previous approaches to these problems for constructing (quantum) cluster algebra structures on (quantum) coordinate rings arising in Lie theory were done on a case-by-case basis, relying on the combinatorics of each concrete family, they say, and these findings will make that unnecessary.

QA274 9781470436957

Intersection Local Times, Loop Soups, and Permanent Wick Powers

Yves Le Jan, Michael B. Marcus, and Jay Rosen (Memoirs of the American Mathematical Society; Volume 247, Number 1171)

American Mathematical Society, ©2017 78 p. \$75.00 (pa)

Jan, Marcus, and Rosen define and examine several stochastic processes related to transient Lévy processes with potential densities $u(x,y) = u(y-x)$, that need not be symmetric nor bounded on the diagonal. The processes include n-fold self-intersection local times of transient Lévy processes and permanental chaoses, which are "loop soup n-fold self-intersection local times" constructed from the loop soup of the Lévy process. They also use loop soups to define permanental Wick powers, which generalize standard Wick powers, a class of the n-th order Gaussian chaoses.

QA360 9780821843604

An Introduction to the Theory of Higher-Dimensional Quasiconformal Mappings

Frederick W. Gehring, Gaven J. Martin, and Bruce P. Palka (Mathematical Surveys and Monographs; Volume 216)

American Mathematical Society, ©2017 430 p. \$116.00

In a fairly comprehensive account of the modern theory of quasiconformal mappings in Euclidean n-space for n equal to or larger than two, Gehring, Martin, and Palka begin with the elementary theory of conformal mappings, and build towards the more general aspects by carefully develop-

ing the necessary analytic and geometric tools. They write primarily for graduate students and researchers who seek to understand quasiconformal mappings, particularly in three or more dimensions, perhaps after having seen applications of the two-dimensional theory in Teichmüller spaces of Riemann surfaces, or in conformal dynamical systems and elsewhere. They develop most of the necessary analytic theory, so assume only a basic background course in multi-dimensional real analysis.

QA403 9783110481099

Wavelet Analysis on the Sphere: Spheroidal Wavelets

Sabrine Arfaoui, Imen Rezgui, and Anouar Ben Mabrouk

De Gruyter, ©2017 144 p. \$114.99

Discussing aspects of the theory of harmonic analysis and its applications, Arfaoui, Rezgui, and Mabrouk contribute to the reference on orthogonal polynomials, homogenous polynomials, and wavelet spheroidal analysis. They focus on a special class of wavelets and their applications, and develop special wavelet bases that are related to special functions in one part and adapted to spherical geometry in another. The applications they describe are numerical solutions of partial differential equations, integro-differential equations, image and signal processing, and time-series processing.

QA643 9781522525318

Probabilistic Nodes Combination (PNC) for Object Modeling and Contour Reconstruction

Dariusz Jacek Jakobczak (Advances in Systems Analysis, Software Engineering, and High Performance Computing)

Information Science Reference, ©2017 312 p. \$175.00

Writing for researchers and practitioners interested in decision making models and business functions, Jakobczak explores the combination of probabilistic modeling with operations research, pointing out that both of them straddle the distance between pure mathematics and applied sciences. His topics include probabilistic nodes combination: formulas and examples, probabilistic nodes combination in two-dimensional modeling: interpolation and extrapolation, probabilistic nodes combination in four-dimensional objects and multi-dimensional data modeling, and applying probabilistic nodes combination in numerical methods and in artificial intelligence.

QA865 9781470423247

The Mathematics of Superoscillations

Yakir Aharonov, Fabrizio Colombo, Irene Sabadini, Daniele C. Struppa, and Jeff Tollaksen (Memoirs of the American Mathematical Society; Volume 247, Number 1174)

American Mathematical Society, ©2017 107 p. \$75.00 (pa)

Aharonov and colleagues offer a self-contained survey of the existing literature in order to present a systematic mathematical approach to superoscillations. They also obtain some new and unexpected results by showing that superoscillating sequences can be seen as solutions to a large class of convolution equations and can therefore be treated within the theory of analytically uniform spaces. In particular, they discuss the persistence of the superoscillatory behavior when superoscillating sequences are taken as initial values of the Schrödinger equation and other equations.

ASTRONOMY

QB843 9781583819029

20th European White Dwarf Workshop: Proceedings of a Conference Held at University of Warwick

Edited by Pier-Emmanuel Tremblay, Boris Gänsicke, and Tom Marsh (Astronomical Society of the Pacific Conference Series; Volume 509)

Astronomical Society of the Pacific, ©2017 579 p. \$88.00

The 97 oral presentations and 53 poster papers in this collection cover white dwarf samples, surveys, and luminosity functions; SN Ia connection; white dwarfs with planetary systems; atmospheres: composition and evolution; pulsating and variable white dwarfs; structure, stellar evolution, and fundamental physics; and white dwarfs in binaries, cataclysmic variables. Among specific topics are the dusty accretion of polluted white dwarfs, whether the DO-type white dwarf FE 0503-289 is a unique object, recent developments in the theoretical modeling of pulsating low-mass helium-core white dwarfs, fundamental physics from observations of white dwarf stars, and binarity in the central stars of planetary nebulae and its relationship to stellar evolution: an observational perspective.

PHYSICS

QC174 9781786343093

The Wigner Transform

Maurice de Gosson (Advanced Textbooks in Mathematics)

World Scientific, ©2017 229 p. \$58.00 (pa)

Gosson presents a comprehensive and mathematically rigorous treatment of the Wigner transform and its twin brother the ambiguity function at a level that should be accessible to upper-level undergraduate students in mathematics or mathematical physics. He especially emphasizes applications to quantum mechanics, some of them at a rather advanced level. The material might also interest mathematicians and engineers working in signal analysis and time frequency analysis, because he has assembled information from widely scattered sources.

QC176 9781510607552

Plasmonic Optics: Theory and Applications

Yongqian Li (Tutorial Texts in Optical Engineering; Volume TT110)

SPIE, ©2017 235 p. \$66.00 (pa)

Combining electronics, photonics, and nanostructures, explains Li, plasmonics studies interactions between electromagnetic waves and matter at the nanoscale. He describes the prominent feature of plasmonic optics as the coupling of electromagnetic waves into collective electron oscillations, which enables the localization and enhancement of electromagnetic energy in a novel family of nanodevices, nanoelectronics, and nanosensors. Among his topics are surface plasmon polaritons at planar interfaces, extraordinary transmission through sub-wavelength apertures, optical nano-antennas, and nanostructure fabrication and optical characteristics. He writes for graduate students and researchers with at least some background in electromagnetism.

QC355 9781510608313

Optics Using MATLAB

Scott W. Teare (Tutorial Texts in Optical Engineering; Volume TT111)

SPIE, ©2017 233 p. \$66.00 (pa)

Teare ties a number of optical topics into programming activities with MATLAB in a tutorial that readers can use as a supplement to other textbooks or on its own. He begins with the basic programming in MATLAB, then focuses on matters specific to optics, and ends with advanced material. His topics include curve fitting and statistics, ray optics and glass equations, modulation transfer function and contrast, Zernike polynomials and wavefronts, metals and complex index of refraction, and completing and packaging programs.

QC446 9783110417258

Computational Strong-Field Quantum Dynamics: Intense Light-Matter InteractionsEdited by Dieter Bauer (De Gruyter Graduate)
De Gruyter, ©2017 278 p. \$80.99 (pa)

Physicists explain computational methods to simulate the interaction of strong laser fields with matter. Strong in this context means that the electric field of the laser brings the state of the target system far away from the initial, typically ground-state, configuration, they say, which means that the standard textbook quantum mechanical perturbation theory is not applicable, and interesting non-perturbative phenomena appear, such as high-order above-threshold ionization or high-harmonic generation. Among their topics are calculating typical strong-field observables, time-dependent relativistic wave equations: numerics of the Dirac and the Klein-Gordon equation, time-dependent configuration interaction singles, and the microscopic particle-in-cell approach.

QC585 9781945291128

Contemporary Dielectric Materials

Edited by R. Sarvanan (Materials Research Foundations; Volume 7)

Materials Research Forum LLC, ©2017 148 p.
\$100.00 (pa)

Physicists describe the experimental growth and characterization of several important dielectric materials using such experimental tools as X-ray diffraction, dielectric measurements, magnetic measurements using a vibrating sample magnetometer, and optical measurements using an ultraviolet-visible spectrometer. Among the topics are the synthesis and structural characteristics of gallium oxide powders, the sol-gel synthesis and characterization of samarium and manganese substituted calcium hydroxyapatite, intrinsic defects in zinc oxide nanoparticles synthesized by the sol-gel and combustion techniques, the effect of sintering temperature on the microstructure and optical properties of zinc oxide ceramics, and the structural characterization of beryllium and indium oxide powders.

QC611 9781522523123

Transport of Information-Carriers in Semiconductors and Nanodevices

Muhammad El-Saba (Advances in Computer and Electrical Engineering)

Engineering Science Reference, ©2017 677 p.
\$225.00

El-Saba here begins the three-volume textbook *Semiconductor Nanodevices: Physics, Modeling and Simulation Techniques* for a course develop-

ing an appreciation and a deep understanding of the conceptual foundations underlying the operation of emerging nanoelectronic devices. In this first volume, he considers transport models of information carriers--electrons and photons--in semiconductors and nanodevices. The material is suitable for engineers and researchers in solid-state physics and nanodevices, he says, and for students in nanoelectronics and nanotechnology.

QC718 9789814699075

Diagnostics of Laboratory and Astrophysical Plasmas Using Spectral Lineshapes of One-, Two-, and Three-Electron Systems

Eugene Oks

World Scientific, ©2017 347 p. \$78.00

In other areas of physics, determining parameters is called measurement, says Oks, but in plasma research, the same observed signal could correspond to many different sets of parameters of the plasma and/or fields in it. Therefore, scientists borrow the term diagnostics from medicine, where it refers to similar uncertainty. Looking in turn at non-turbulent plasmas and plasmas containing oscillatory electric fields, he covers electron density, temperature, magnetic field, effective charge of ions, low-frequency electrostatic turbulence, principles of spectroscopic diagnostics of plasmas containing quasi-monochromatic electric fields, Langmuir waves, and transverse microwave, laser, and/or laser-induced fields.

CHEMISTRY

QD172 9783110365238

Handbook of Rare Earth Elements: AnalyticsEdited by Alfred Golloch (De Gruyter Reference)
De Gruyter, ©2017 401 p. \$280.00

Analytical chemists and materials scientists summarize the most important tools of instrumental analysis of rare Earth elements, and report on special applications. The combination of information on analysis and application is to help analytic chemists find solutions for problems that might arise in the ever-increasing use of these elements in high-technology devices. Their topics include separation/preconcentration techniques for rare Earth element analysis, inductively coupled plasma optical emission spectrometry, neutron activation analysis with an emphasis on geological materials, automated quantitative rare Earth element mineralogy by scanning electron microscopy, lanthanoides in glass and glass ceramics, and recycling rare Earth elements.

QD341 9781945291302

Elemental Graphene Analogues

David J. Fisher (Materials Research Foundations; Volume 14, 2017)

Materials Research Forum LLC, ©2017 372 p. \$150.00 (pa)

Fisher profiles some of the monolayer forms in other elements besides carbon that scientists have discovered (or predicted from computer models) during the half decade since graphene was experimentally fabricated. These include group-IV elements that yield silicene, germanene, and stanene (tinene), a group-V element that yields phosphorene, and transition-metal dichalcogenides. Scientists predict that group-IV monolayers will be topological insulators, and the transition-metal dichalcogenides will be useful for valleytronics, says Fisher, while monolayer materials generally can be used as field-effect transistors and play a key role in future nano-electronic devices.

QD549 9783110486780

Suspension Concentrates: Preparation, Stability and Industrial Applications

Tharwat F. Tadros (De Gruyter Graduate)

De Gruyter, ©2017 345 p. \$80.99 (pa)

Tadros provides a comprehensive text on the methods that can be used to prepare suspension concentrates, control their colloid and physical stability, and assess their stability. He also discusses their applications. The material could be of interest to formulation chemists, pharmacists, chemical engineers, and researchers. Among his topics are preparing suspensions using the top-down process, the electrostatic stabilization of suspensions, sedimentation of suspensions and preventing the formation of dilatant sediments, non-aqueous suspension concentrates, and applications of suspensions in paints and coatings.

QD716 9781786342188

Photochemical Processes in Continuous-Flow Reactors: From Engineering Principles to Chemical Applications

Edited by Timothy Noël

World Scientific, ©2017 271 p. \$118.00

Bridging the fields of fundamental chemical engineering and organic synthesis, chemists summarize the important engineering aspects of photochemical processes in flow, and provide some relevant examples in the field of organic chemistry and material science. Among their topics are a general introduction to transport phenomena in continuous-flow micro-reactors for photochemical transformations, photon transport phenomena: radiation absorption and scattering effects

on photoreactors, efficiency versus productivity in photoreactions: a case study, heterogeneous photoreactions in continuous flow, and industrial photochemistry: from laboratory scale to industrial scale.

QD921 9781945291203

Optical Furnaces for Crystal Growth

Gerhard Kloos (Materials Research Foundations; Volume 9)

Materials Research Forum LLC, ©2017 101 p. \$85.00 (pa)

The monograph introduces the optical floating zone method for producing single crystals of high quality, and describes experimental set-ups for crystal growth based on direct illumination of the melting zone using one or more ellipsoidal optical reflectors. Two-color ray tracings and representations of caustics illustrate the ray paths inside the apparatus. Imaging furnaces with intermediate focus where the focal point is shared by two neighboring optical reflectors are also discussed briefly.

GEOLOGY

QE515 9780939950973

Highly Siderophile and Strongly Chalcophile Elements in High-Temperature Geochemistry and Cosmochemistry

Edited by Jason Harvey and James M. D. Day (Reviews in Mineralogy and Geochemistry; Volume 81)

Mineralogical Society of America, ©2016 774 p. \$62.00 (pa)

Mineralogists and geochemists explore highly siderophile elements, which strongly prefer metal, and chalcophile elements, which strongly prefer sulfide, relative to silicate or oxide phases, at very high temperatures. Among their topics are experimental results on fractionation of the highly siderophile elements at variable pressures and temperatures during planetary and magmatic differentiation, nucleosynthetic isotope variations of siderophile and chalcophile elements in the solar system, the distribution and processing of highly siderophile elements in cratonic mantle lithosphere, chalcophile and siderophile elements in mantle rocks: trace elements controlled by trace minerals, petrogenesis of the platinum-group minerals, and highly siderophile and strongly chalcophile elements in magmatic ore deposits.

TECHNOLOGY (GENERAL)

T57 9783110443769

Systems, Automation & Control

Edited by Nabil Derbel (Advances in Systems, Signals and Devices; Volume 1)

De Gruyter Oldenbourg, ©2016 156 p.
\$84.00 (pa)

Beginning a peer-reviewed international series on aspects of electrical engineering related to smart systems, electrical engineers consider systems, automation, and control from the perspectives of research, development, and applications of the science and technology. Their topics include the graphical modeling of networked architectures and real-time requirements for analyzing networked automation systems, track estimation: high-gain observer versus algebraic derivative methods, improving high gain observer design for nonlinear systems using the structure of the linear part, an optimal pattern generator for dynamic walking in humanoid robotics, and a discrete Hamiltonian approach to optimal targeting in chaos control.

T173 9781522525899

Smart Technologies: Breakthroughs in Research and Practice

Edited by Information Resources Management Association

Information Science Reference, ©2018 602 p.
\$345.00

Information Resources Management Association presents a collection of articles focusing on recent research on smart technologies. Sections cover assistive and wearable technology; corporate innovation; culture, society, and the arts; educational technology; and urban spaces and energy optimization. Among the topics are the design and evaluation of vision-based head and face tracking interfaces for assistive input, technology-enabled experiential marketing: promotional strategies towards new service opportunities, upgrading society with smart government: the use of smart services among federal offices of the United Arab Emirates, second language learner's spoken discourse: practice and corrective feedback through automatic speech recognition, and optimized energy consumption and demand-side management in smart grids.

T210 9781413324099

Patent Searching Made Easy: How to Do Patent Searches Online and in the Library, 7th Edition

David Hitchcock

Nolo, ©2017 259 p. \$39.99 (pa)

Hitchcock, a physicist, engineer, and inventor who has worked as a computer consultant and on patent searching and new technology, explains how to do a patent search with only a small amount of effort and cost. He details how the Patent and Trademark Office classifies different types of inventions, how to assign an idea to the right class, how to compare it to similar ideas in the same class, and how to decide whether it is new enough to qualify for a patent. He covers the basics of patents, patent searching, and patent databases, including how to come up with keywords to describe an invention; how to perform simple and advanced internet patent searches through the Patent and Trademark Office website, European Patent Office, Google, and additional sources; and how to use resources at the nationwide network of Patent and Trademark Resource Centers, including the Index to the US Patent Classification System, Manual of Classification, Classification Definitions, CASSIS (Classification and Search Support Information System), WEST (West-based Examiner Search Tool), and EAST (Examiner Automated Search Tool).

ENGINEERING (GENERAL, CIVIL)

TA158 9780784414729

Public Speaking for Engineers: Communicating Effectively With Clients, the Public, and Local Government

Christopher A. "Shoots" Veis

American Society of Civil Engineers, ©2017

159 p. \$40.00 (pa)

Some of the reasons engineers should learn to become effective public speakers, says Veis, are that it makes their job easier, makes them look good, lends an engineering voice and sound engineering judgment to policy decisions, is good for engineering jobs, and raises the prestige of the engineering profession. Without actually saying so, he also hints that his service on the Billings city council would be more pleasant if the engineers who addressed the council were better speakers. He recognizes that public speaking may not come naturally to engineers, so make the book fun and easy to read, with tips and tricks and a lot of examples and case studies. His topics are planning, design, delivery, and local government.

TA168 9781522524984

Handbook of Research on Applied Cybernetics and Systems Science

Edited by Snehanshu Saha, Abhyuday Mandal, Anand Narasimhamurthy, Sarasvathi V. , and

Shivappa Sangam (Advances in Computational Intelligence and Robotics)
Information Science Reference, ©2017 463 p.
\$245.00

Outlining recent trends in cybernetics and systems science, contributors in computer science, information technology, and mathematics present expository articles that include a number of open problems and identify directions for needed research. They cover signal processing and communications, systems and computational biology, machine learning and data sciences, statistical models and designs in computing, and scientometrics and cybernetics. Among specific topics are towards the automation of Information of Things analytics: an ontology-driven approach, graph-based semi-supervised learning with big data, patient de-identification: a conditional random-field-based supervised approach, measuring the complexity of chaotic systems with cybernetics applications, and the design of an assistive speller machine based on brain-computer interfacing.

TA169 9789813141254

Optimum Accelerated Life Testing Models With Time-Varying Stresses

Preeti Wanti Srivastava

World Scientific, ©2017 405 p. \$158.00

Reliability engineer Srivastava here deals exclusively with different aspects of time-varying, fully and partially accelerated life test models for non-repairable systems not only with step-stress and ramp-stress settings, but also with different combinations of stress loadings involving one stress factor. She assumes knowledge of statistics at the undergraduate level. Among her topics are optimum step-stress accelerated life test models, optimum ramp-stress fully accelerated life test plans under type-I censoring, optimum time-censored step-stress fully accelerated life testing with competing risks for failure, product control and accelerated life testing, and optimum time-censored step-stress partially accelerated life test sampling plans with competing causes of failure using a tampered failure rate model.

TA455 9781945291029

Novel Ceramic Materials

Edited by R. Saravanan (Materials Research Foundations; Volume 2)

Materials Research Forum LLC, ©2016 216 p.
\$125.00 (pa)

Physicists experimentally determine properties of some novel ceramic materials being developed for such applications as microwave devices, communication equipment, and memory devices.

Their topics include chemical bonding and charge density imaging in Ba_{0.2}Sr_{0.8}TiO₃ ceramics by iterative entropy maximization, electronic bonding analysis on the dilute doping of iron in nickel oxide nanocrystals, the charge density of aluminum-doped lanthanum orthoferrites, structural and optical properties of lithium-doped zirconia nanoparticles, and synthesis and charge density analysis of BaTiO₃.

MECHANICAL ENGINEERING & MACHINERY

TJ213 9781522523857

Large-Scale Fuzzy Interconnected Control Systems Design and Analysis

Zhixiong Zhong and Chih-Min Lin (Advances in Systems Analysis, Software Engineering, and High Performance Computing)

Information Science Reference, ©2017 223 p.
\$175.00

Zhong and Lin explore control theories for large-scale interconnected systems at a level suitable for researchers and engineers in the system and control community, and as supplemental reading for studying large-scale system theories at the graduate level. They present all their developed results as LMIs, which can be solved easily with Matlab's LMI Toolbox. They cover the stability and stabilization of large-scale fuzzy interconnected systems, sampled-data control, event-triggered control, sliding-mode control, practical applications, and recommendations for further research.

ELECTRICAL ENGINEERING, ELECTRONICS, NUCLEAR ENGINEERING

TK5 9783110446159

Power Systems & Smart Energies

Edited by Faouzi Derbel, Nabil Derbel, and Olfa Kanoun (Advances in Systems, Signals and Devices; Volume 3)

De Gruyter Oldenbourg, ©2017 113 p. \$68.99 (pa)

Scientists and engineers from a number of countries consider power systems and smart energy systems from the perspectives of the synthesis of a power gyrator based on the sliding mode control of two cascading boost converters using a single sliding surface, evaluating power converters using a wind-system simulator, the online improvement of power system dynamic stability using adaptive network-based fuzzy inference systems (ANFIS) and non-dominated sorting genetic algorithms (NSGA II), a sliding mode control approach applied to a photovoltaic system oper-

ated in maximum power point tracking (MPPT), comparing the IGCT and IGBT for the modular multilevel converter in high-voltage direct current applications, modeling a double star induction machine including magnetic saturation and skin effect, and increasing the torque density of permanent-magnet synchronous machines using innovative materials and winding technologies.

TK2897 9781510604902

Energy Harvesting for Low-Power Autonomous Devices and Systems

Jahangir Rastegar and Harbans S. Dhadwal (Tutorial Texts in Optical Engineering; Volume TT108) SPIE, ©2017 165 p. \$66.00 (pa)

Rastegar and Dhadwal restrict their treatment here to generating small amounts of electrical energy on a local scale and to converting mechanical potential and kinetic energy to electrical energy. The information could be useful for application engineers working on specific problems, but could also serve as a introduction to principles of energy harvesting in general. They cover energy harvesting, mechanical-to-electrical energy conversion transducers, mechanical-to-electrical energy transducer interfacing mechanisms, collection and conditioning circuits, and case studies.

TK2950 9781945291005

Charge Density and Structural Characterization of Thermoelectric Materials

R. Saravanan (Materials Research Foundations; Volume 1)

Materials Research Forum LLC, ©2016 172 p. \$125.00 (pa)

Saravanan presents the results of the growth and structural characterization of a number of thermoelectric materials to determine their suitability for use in thermoelectric devices such as solid state coolers, power generators, sensors, and detectors. The materials are Mg₂Si, PbTe, Bi_{1-x}Sb_x, Bi₂Te₃, Sb₂Te₃, Sn_{1-x}GexTe, and InSb. He covers thermoelectric basics, results and discussion based on Rietveld refinements, results and discussion on charge densities derived from the maximum entropy method, and results and discussion based on the pair distribution function.

TK3441 9781522523093

Accelerating the Discovery of New Dielectric Properties in Polymer Insulation

Boxue Du (Advances in Computer and Electrical Engineering)

Engineering Science Reference, ©2017 388 p. \$210.00

This volume details trends in the properties, appli-

cations, and development of polymer dielectrics. It describes the insulation of new power energy, polymer properties in wind generator winding and the effect of radiation in nuclear power stations on polymers, silicone rubber insulators in high-speed railway systems that require new dielectric properties different from traditional power systems, polymer insulation exposed to multi-field HVDC (high-voltage, direct current) power systems, the effects of fluorination on surface charge behavior and the effect of boron nitride nanoparticles on the high thermal conductivity of transformer oil, epoxy resin for gas insulated switchgear disc-type insulators, and polymer dielectrics with better thermal behavior and insulation applied in a superconducting environment.

TK6592 9781630810252

Meter-Wave Synthetic Aperture Radar for Concealed Object Detection

Hans Hellsten (Artech House Radar Library)

Artech House, ©2017 353 p. \$179.00

Exploring in detail the physics and technology necessary to analyze and understand meter-wave synthetic aperture radar and its applications, Hellsten focuses on targets screened by forests or underground, for which the experimental data and theoretical development are more advanced than for building penetration and ground topography. He covers meter wavelength scattering from natural ground and targets, meter wavelength synthetic aperture radar (SAR), meter wavelength SAR system design, meter wavelength SAR processing, and multi-data target detection.

TK7871 9781945291043

Nano Semiconducting Materials

R. Saravanan (Materials Research Foundations; Volume 3)

Materials Research Forum LLC, ©2016 172 p. \$125.00 (pa)

Saravanan presents the results of experimental X-ray studies of electron density distribution in a number of promising semiconducting material in both nano-particle and nano-wire form. Electron density analysis on nano semiconducting materials provides information about their physical and chemical properties, he says, but has not been performed on several new species. He discusses sample preparation and X-ray analysis of nano semiconductors, size analysis, optical properties, and electron density analysis.

**MOTOR VEHICLES, AERONAUTICS,
ASTRONAUTICS**

TL621 9780768084054

Additive Manufacturing of Aerospace Composite Structures: Fabrication and Reliability

Edited by Rani Elhajjar

SAE International, ©2017 79 p. \$95.00 (pa)

Engineers introduce readers to the current state of technologies involved in processing and designing polymer-reinforced fiber composites using automated fiber placement methods of additive manufacturing. Among their topics are the production implementation of multiple machine, high speed fiber placement for large structures; enhanced robotic automated fiber placement with accurate robot technology and modular fiber placement head; composite design optimization for automated fiber placement process; and a status of acceptance criteria and process requirements in advanced composite manufacturing, and whether they are fit for purpose.

MINING ENGINEERING

TN686 9781878068361

59th Annual Technical Conference Proceedings

Edited by Carl M. Lampert, Joyce Lampert, and Karen Marken

Society of Vacuum Coaters, ©2016 524 p.

\$65.00 (pa)

The May 2016 vacuum coating conference in Indianapolis generated 71 papers on high-performance films for tomorrow's products; coatings and processes for biomedical and environmental applications; coatings for energy conversion and related processes; emerging technologies; post-deadline recent developments; high power impulse magnetron sputtering; large area coatings; optical coatings; plasma processing; protective, tribological, and decorative coatings; webtech roll-to-roll coatings for high-end applications, fundamentals of interface design, and poster papers.

CHEMICAL TECHNOLOGY

TP156 9781910242896

Polymers and Nanomaterials From Liquid-Liquid Interfaces: Synthesis, Self-Organization and Applications

Panagiotis Dallas

Smithers Rapra, ©2017 242 p. \$130.00

This book reviews the synthesis, self-organization, and applications of polymers and nanomaterials from liquid-liquid interfaces. It describes the evolution of interfaces in natural and biological systems; the physicochemical aspects of interfaces; the synthesis and self-organization of nanoparticles and polymers through interfacial systems; and the potential applications of liquid-liquid interfaces and surfactants in catalysis, enhanced oil recovery with supercritical fluids, and other energy-related applications.

TP245 9781945291265

Recent Advances in Energy Storage Materials and Devices

Edited by Li Lu and Ning Hu (Materials Research Foundations; Volume 12)

Materials Research Forum LLC, ©2017 229 p.

\$125.00 (pa)

Contributors in the physical sciences review recent research into electrical energy storage materials and devices. Among their topics are lithium ion batteries: fundamentals and developments, improvements of Li₄Ti₅O₁₂ anode material for lithium ion batteries, nanostructured materials for lithium ion battery anodes, garnet-type lithium ion conductive ceramics and its applications for an all-solid-state lithium battery, and advanced supercapacitors using carbon nanotubes.

TP261 9781945291104

Radiation Effects in Silicon Carbide

A. A. Lebedev (Materials Research Foundations; Volume 6)

Materials Research Forum LLC, ©2017 161 p.

\$100.00 (pa)

Lebedev (St. Petersburg Electrical Engineering University) summarizes available data on radiation effects formed in 6H-, 4H-, and 3C-SiC under irradiation with electrons, neutrons, and some kind of ions, and the effects of intrinsic defects and radiation defects in the SiC crystal lattice on the properties of the epitaxial layers themselves, such as their doping level and polytype homogeneity. Investigations of wide-gap semiconductors take into account how the rate of removal of mobile charge carriers depends on the temperature.

TP858 9781945291142

Current Trends on Lanthanide Glasses and Materials

Edited by Sooraj Hussain Nandayala (Materials Research Foundations; Volume 8)

Materials Research Forum LLC, ©2017 193 p.

\$125.00 (pa)

Presenting findings from their research on lanthanide glasses and materials, physicists and

material scientists cover tunable and white light generation in lanthanide doped novel fluorophosphate glasses, lanthanides co-doped phosphate glasses for broadband applications, lanthanum doped borophosphate glasses for nuclear waste immobilization, crystallization studies of cerium containing iron borophosphate glasses/glass-ceramics, spectroscopic properties and energy transfer parameters of Nd³⁺ and Sm³⁺ doped lithium borate glasses, the relationship between the structural modification and luminescence efficiencies of ZnF₂-Mo-TeO₂ glasses doped with Ho³⁺ and Er³⁺ ions, and luminescence and energy transfer phenomena in lanthanide ions doped phosphor and glassy materials.

TP1087 9781945291081

New Polymeric Composite Materials: Environmental, Biomedical, Actuator, and Fuel Cell Applications

Edited by Inamuddin, Ali Mohammad, and Abdullay M. Asiri (Materials Research Foundations; Volume 5)

Materials Research Forum LLC, ©2016 191 p. \$125.00 (pa)

Eleven chapters review recent advances and new applications of polymeric and composite materials in shape memory polymers, artificial organs, safe disposal of waste, removing heavy metals and dyes, fuel cells, sensors and actuators, and adhesives. The contributors discuss the properties of geomembranes for landfill liners, enzymatic biofuel cells implanted in animals, the synthesis of sodium dodecyl sulphate intercalated zirconium phosphate, a grafted alginic acid copolymer adhesive, titanium oxide nanocomposite membranes for water treatment, and electrochemical cholesterol nanosensors.

PUBLISHING, LIBRARY SCIENCE, BIBLIOGRAPHY

Z682 9780838915578

Learner-Centered Pedagogy: Principles and Practice

Kevin Michael Klipfel and Dani Brecher Cook ala editions, ©2017 197 p. \$60.00 (pa)

This plain-language guide for instruction librarians offers an introduction to theory and research on learner-centered teaching practices and provides practical suggestions for implementing these practices. The book outlines six principles from cognitive psychology that librarians can use to organize their information literacy instruction and to inspire and motivate students through learner-centered pedagogy. The book begins with a

definition of learner-centered pedagogy, drawing on ideas from the education literature, counseling psychology, and learner-centered teaching; in particular, it relies on the ideas of humanistic psychologist Carl Rogers and his vision of empathy as central to humanistic education. Discussion ranges from findings in cognitive science on learning and empathy, to student autonomy, relationships between learners and educators, and cultivating a growth mindset. The final chapter gives tips on becoming a learner-centered pedagogy technologist. The book includes many b&w process diagrams and algorithms for deciding whether and how to use various technologies.

Z699 9781440843822

Optimizing Discovery Systems to Improve User Experience: The Innovative Librarian's Guide

Bonnie Imler and Michelle Eichelberger (The Innovative Librarian's Guide)

Libraries Unlimited, ©2017 136 p. \$55.00 (pa)

This guide for librarians explains how to retool the library's discovery systems to enhance user experiences and meet user expectations for ease of use. The book provides usability testing methods to evaluate the library's discovery system and gives advice on how to make it effective for patrons and how to improve library instructions for using the discovery systems. The book also provides best practices for publicizing and marketing the system. An appendix lists discovery system products, usability software, education software, library software, publicity software and vendors, and presentation tools. A glossary is also included.

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 informa-

tion 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.

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