



SPEC *Sheet*

SOCIETY OF PLASTICS ENGINEERS – CLEVELAND SECTION

April 2012 Vol. 55 No. 8

www.specleveland.org

Editor: Bruce Bille

Technical Meeting

**Printable Polymer Photovoltaic Cells
For “Plastic” Electronics
By Xiong Gong**

**AGPA Outreach
By Carin A. Helfer**

Monday, April 16, 2012

Martin University Center

105 Fir Hill Street

East Side of University of Akron Campus

Agenda:

5:00 Cash Bar
6:00 Dinner
7:00 Presentation after dinner

Price: Member and/or guest \$25.00
Retired \$20.00
Student and/or guest \$5.00

Quick Clicks:

[About the Programs](#)
[About the Speakers](#)
[Directions to the Meeting](#)
[President’s Message](#)

Reservations must be in by noon on Friday, Apr. 13th
with Mark Holtman at holtman@uakron.edu or 330-972-6008.

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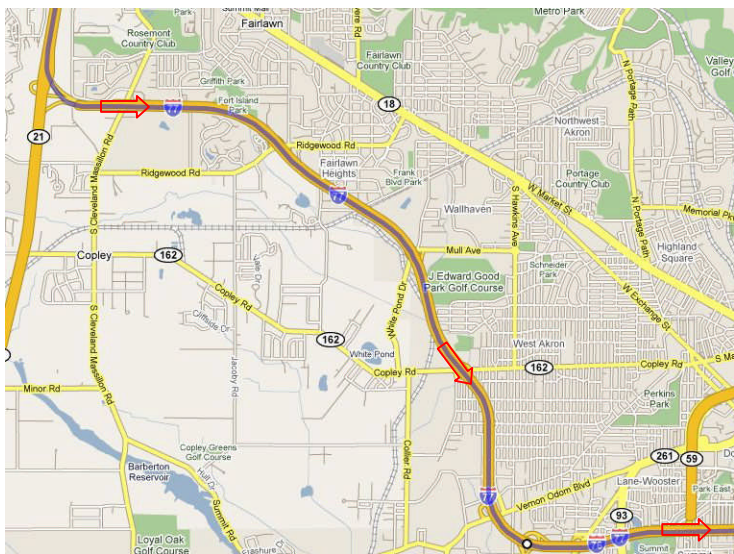
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Directions to Apr 16th meeting:

From Cleveland, take I-77 South.
 Rte 21 will merge with I-77S at Exit 145 near Richfield.
 At Exit 136, I-77 and Rte. 21 split. Stay on I-77 South towards Akron.
 I-76 will merge with I-77S at Exit 129. Stay on I-77S.
 Exit LEFT at Exit 23B, Rte. 8 North.
 In 0.2 miles, exit right for Carroll St/Buchtel Ave.
 Turn left (west) on Buchtel Ave.
 In 0.2 miles, turn right on Fir Hill Street.
 Martin University Center is at 105 Fir Hill Street.
 Parking lot is on the north side of Martin University Center.



Upcoming Events

Date	Event	Location
May 14	Awards Night Penn State Behrend Campus Overview Brad Johnson	TBD
Aug 26-29 th	 Global Polymer Innovation Expo	Battelle Hall, Columbus, Ohio

*Have something newsworthy at your company?
 Submit it for inclusion in the SPECsheet!*

President's Message

By Robert Koch

Dear Fellow Members:

My new expanded job responsibilities will necessitate a relocation from the Cleveland area, so I can no longer have the honor of serving as your Cleveland SPE Section President. My final meeting will be in May. I'll try to attend future meetings when my job permits. Meanwhile, it is very important that each of you consider serving on the Cleveland board. Those that are currently serving have done so for many years and need help. The future of the section will depend on whether some of you choose to serve.



I have enjoyed serving and wish all of you good health and a prosperous 2012 and beyond. See you at the May meeting.

Local Plastics News

A. Schulman to move headquarters

A. Schulman is moving its corporate headquarters into a “more modern, efficient space” just two miles from its current location in Fairlawn.

The plastics compounder and resin distributor will occupy a 34,000-square-foot space in the new Fairlawn Corporate Park, where it will employ approximately 130.

“Our new headquarters will serve as our global base to support the strategic expansion of our business in markets around the world,” Joseph M. Gingo, chairman, president and CEO of the company, said in a news release.

The company also intends to relocate workers from its nearby Akron Product Technology Center into the new facility. The firm plans to sell the Product Technology Center building in the future. Proceeds from the sale will support A. Schulman’s growth initiatives, such as capital investments.

A. Schulman sold its existing headquarters building to Landridge Development and will lease its new building with the same developer.

The new facility will serve as the company’s global and U.S. headquarters. The move will take place in 2013.

A. Schulman employs 3,100 in 36 facilities worldwide. It reported net sales of \$2.2 billion for fiscal year ended Aug. 31, 2011.

(Editor's Note: A. Schulman CEO Joseph Gingo spoke to SPE Akron and Cleveland Sections at the joint meeting on January 20, 2011.)

Latest News from NPE 2012 and ANTEC

[Click Here](#) for the latest news and information from the ANTEC@NPE 2012 meeting held April 2-5. Next year, ANTEC 2013 will be held in Cincinnati from April 21-25. Put it in your calendar now!

About the Programs

Printable Polymer Photovoltaic Cells For "Plastic" Electronics

Semiconducting polymer optoelectronic and electronic devices have evolved as promising cost-effective alternative to silicon-based devices. These devices include light emitting diodes, field-effect transistors, solar cells, photodetectors, lasers, sensors, etc. This presentation will focus on our recent progress in polymer solar cells and polymer photodetectors.

Polymer solar cells: both novel materials and novel device structures for approaching high performance of polymer solar cells, the insight of physics of polymer solar cells and the guidance on next steps to improve device performance will be presented. Our discovery demonstrated that polymer solar cells should be as good as inorganic solar cells.

Polymer photodetectors: solution-processed ultrasensitive polymer photodetectors with spectral response from the UV-visible to the infrared range will also be presented. Our results demonstrated that polymer photodetectors are comparable to or even better than the photodetectors fabricated from any inorganic materials.

AGPA Outreach Details of the Akron Global Polymer Academy

(AGPA) outreach initiatives will be provided with suggested possible involvement of SPE with AGPA. The mission of the AGPA at The University of Akron is to assist the College of Polymer Science and Polymer Engineering in creating and disseminating knowledge about polymer science, polymer engineering, and Science, Technology, Engineering and Mathematics (STEM) education by supporting initiatives in P-16 education and other distributive education ventures. AGPA, which started 10 years ago with funding from the State of Ohio, accomplishes this mission through an extensive website for teachers and students of all ages (<http://agpa.uakron.edu/p16/>), various face-to-face initiatives, and professional development for teachers.

The website, which receives over 10,000 visits/month, includes basic information on polymers, lesson plans, video demonstrations, best teaching practices, and other valuable information. Through face-to-face initiatives, AGPA interacts with over 2,000 students each year. These initiatives include visits by AGPA to local schools, visits from schools to the College of Polymer Science and Polymer Engineering, polymer family nights at local schools, and the Akron Regional Science Olympiad Tournament held at The University of Akron. To encourage creativity and innovation by students, the AGPA hosts a Rubber Band Contest. This contest challenges students to design and create a working invention that incorporates at least one rubber band. In addition, AGPA holds or participates in workshops for teachers to enhance their science content knowledge and science teaching methods. AGPA hopes that through these efforts the students will become more scientifically literate and view science favorably, which could lead to a higher number of students pursuing careers in science and engineering.

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About the Speakers



Dr. Xiong Gong, Asst. Professor of Polymer Engineering,
University of Akron Polymer Engineering

Education/Experience:

Manager of Advanced Materials and Devices, Cbrite Inc. (2006-2010)
Guest Professor, South China University of Technology (2007-present)
Senior Scientist, Cbrite Inc. (2005-2006)
Postdoc, UC, Santa Barbara, with Professor Alan J. Heeger, (2001-2004)
Alexander von Humboldt Research Fellowship (1999-2000)
Research Associate, Department of Chemistry, The University of Hong Kong (1997-1999)

Faculty, Department of Chemistry, Northwest Normal University (1986-1994)

Ph.D. Physics (Optics), Nankai University (1997)

M.S. Chemistry, Lanzhou University (1994)

B.S. Chemistry, Northwest Normal University (1986)

Selected Honors/Awards:

3M Nontenured Faculty Award (2011)

Overseas Outstanding Chinese Youngest Scientist Awards, The National Science Foundation of China (2008)

K.C. Wong Education Foundation Fellow (2009)

Alexander von Humboldt Research Fellowship (1999)

Research Interests:

Design, fabrication and characterization of organic/polymer electronic and optoelectronic devices (photovoltaic cells, white light emitting diodes and displays, thin film transistors, electrochemical cells and biosensors)

Chemistry and physics of semiconducting organic/polymeric materials

Chemistry and physics of inorganic quantum dots and nanoparticles

Chemistry, physics and applications of organometallic compounds

Materials characterization: optical and electrical properties



Carin A. Helfer is the Assistant Director Science Education Outreach for the Akron Global Polymer Academy in the College of Polymer Science and Polymer Engineering at The University of Akron and the Director of the Akron Regional Science Olympiad. Carin coordinates the outreach initiatives for the AGPA, which include generating science content for the P-16 section of the AGPA's website and developing various face-to-face activities for students and teachers. She also serves on the Board of the Women's Network of Northeast Ohio and chairs the Judith A. Resnik Scholarship Committee. Carin has received funding awards from the U.S. Department of Education, the Ohio Board of Regents, and Connect a Million Minds Initiative of Time Warner Cable for science education outreach. Carin

received a B.S. in Chemical Engineering from Case Western Reserve University. After working for 4 years at the Goodyear Tire & Rubber Company as a compounder in the Research Division, she earned a Ph.D. in Polymer Science from The University of Akron. Her graduate studies and a post-doctoral research position were completed under the supervision of Prof. Wayne L. Mattice at The University of Akron. Carin resides in Copley with her two daughters. Sarah is a 1st year student at Rensselaer Polytechnic Institute and is majoring in architecture. Emily is a junior at Copley High School.

SPE - Cleveland Section S03 Board Meeting Minutes

March 12, 2012

Bob Koch opened the meeting at 4:19 PM with 6 members present.

Present: Bob Koch, Brian Sarvas, Gary Petruska, Gary Casterline, Naresh Alle and Jerry Blayne.

Absent: Cheng Xiong, Don Haeske, Jack Dubsky, and John Sovis.

Treasurer's Report: Jerry Blayne distributed copies and reported. Beginning Balance = \$33,348.02, Income=325.00, Expenses = \$800.16, Ending Balance = \$33,872.86. Jerry motioned to charge all Board members \$200.00 annually for the 8 meetings. The motion was voted down. Gary Casterline motioned to accept the report, Gary Petruska seconded and the motion carried.

Secretary's Report: Gary Petruska motioned to accept as printed, Gary Casterline seconded and the motion carried.

National Councilor's Report: Naresh Alle reported he attended on line. Approximately 60 attended. Naresh reported R. Broom introduced the new CEO. National is discontinuing the investment program. Finances are doing well. There were 3 bylaw changes. National reviewed Antec and announced growth is mostly in Asia and Europe. Gary Petruska motioned to accept the report, Brian Sarvas seconded and the motion carried.

Program Report: Gary Casterline reviewed the remaining program, requested suggestions for next year's meetings and discussed the Case student section.

Advertising: It was suggested to invoice current advertisers.

SPEC Sheet / Web site Report: All submissions are due by April 6th.

Membership: Gary Petruska reported 270 current members.

House: Gary Casterline reported 21 reservations for the meeting.

Education: Gary Casterline reported the single scholarship application was a return from last year. Bob Koch motioned to award \$1,000.00 scholarship. All essay reviews are due by Monday, 3/19/12. Gary is requesting each Board member submit their ranked top 10 essays.

PIC: No report.

Awards: No Report.

Old Business: No old business.

New Business: Jerry Blayne requested a new budget for next fiscal year.

Gary Petruska motioned to adjourn the meeting, Naresh Alle seconded and the motion carried. The meeting ended at 5:22 PM.

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Global Polymer Innovation Expo

The Rubber and Plastics Research Association (RAPRA), announces the Global Polymer Innovation Expo (GPIE) to be held in Columbus, Ohio August 26-29th, 2012 at Battelle Hall.

GPIE is the platform for addressing the critical needs of the polymer industry:

- Accelerating innovations to market – thereby creating jobs through business growth
- Leveraging the unique capabilities of the region's supply chain
- Addressing the shortage of skilled workers available to the polymer industry by introducing Science, Technology, Engineering & Mathematics (S.T.E.M.) educators to the polymer industry
- Identifying prescriptive paths to careers in the polymer industry for veterans, displaced skilled workers and the under-employed

The conference and exposition will feature the six key areas of polymer growth from the Ohio Polymer Strategy Council's 2011 Roadmap: Conductive & Electronic Polymers, Polymer Nanocomposites, High Performance Polymers, Bio-based Polymers & Feedstocks, Degradable & Recyclable Polymers, and Direct Digital (Additive) Manufacturing.

Keynote speakers include Dr. Robert D. Atkinson, one of the country's foremost thinkers on innovation economics and the author of *The Race for Global Innovation Advantage* and Dr. (VG) Vijay Govindarajan, the Earl C. Daum 1924 professor of international business at the Tuck School of Business at Dartmouth College in New Hampshire. Dr. Govindarajan is one of the world's leading experts on strategy and innovation and was recently named #3 in the Thinkers50 list. Conference attendees include senior company executives, private and university researchers, economic development officials and educators from around the globe. Exhibitors will span the entire polymer value chain from raw materials suppliers and equipment design manufacturers, to research facilities, processors and end product manufacturing.

More information about the 2011 Roadmap is available at www.GlobalPolymerInnovationEXPO.com.

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