

Northeast Wisconsin Section

American Chemical Society

February 2013

Welcome 2013!

Happy New Year! I hope you had a wonderful holiday season, this year we finally had a white Christmas. As we returned to work or school, I am sure chemistry is once again on top of your mind. I am honored and excited to serve as the new chair of our local ACS section this year. Our ACS section has a broad membership base for chemistry with a number of universities and industries in the section. We have a dedicated section leadership team: Martin Rudd, Corey Cunningham, Bob Brylski, and me. The team is in the process of developing a robust speaker program and other events this year. We may call for volunteers from our membership to support some of the activities in the coming months.

Let me briefly introduce myself, I am a polymer chemist by training and have worked in the industry for the last 22 years. I am currently a Research Technical Leader at Kimberly-Clark Corporation located in Neenah, Wisconsin. My current research interests include sustainable materials and technologies including biopolymers, biodegradable materials, green chemistry and processes, and sustainable application development.

I am looking forward to meeting our section members to promote chemistry for better life and sustainability.



James Wang – Chair

February 2013 Section Meeting

“Sustainable Packaging Successes: Life Cycle Assessment Advantaged Packaging Materials for Consumer Product Applications”

Brent Thompson, Greg Wideman, and James Wang
Kimberly-Clark Corporation, Corporate Research & Engineering

Thursday, February 21st at 6:30 pm
Lawrence University, Steitz Hall Room 102

[Map](#)

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Abstract

Various types of plastic packaging materials are of industrial and economic importance to Northeast Wisconsin. The concept of sustainable packaging and an overview of biodegradable and bio-based polymers will be discussed.

Utilizing bio-based or recycled plastics is an integral part of sustainable and responsible use of polymeric resources. Application of recycled polymers gave a second life to such materials and the environmental benefits by diverting the used plastics from landfill. Kimberly-Clark is a leader in developing and utilizing such recycled polymers for consumer product applications. However, one consequence of incorporating recycled polymers in packaging materials is the potential loss of strength, toughness, and tenacity or in general, perceived reduced quality packaging. In order to circumvent these concerns, physical properties of packaging materials containing such recycled plastics had to be thoroughly assessed to meet the stringent application requirement. Key performance properties of a number of resin formulations containing recycled polymers were quantitatively measured and compared to a control, which was a 100% virgin material. Additions of the recycled content "waste" materials, both internally and externally sourced, have been compared.

The development formed a basis for developing and commercializing the resin formulations used in the flexible packaging for HUGGIES® Pure & Natural diapers, Kimberly-Clark Professional stretch and overwrap packaging for towels, SCOTT® Naturals™ Flushable Moist Wipes primary packaging and injection molded tubs. Life Cycle Assessment (LCA) techniques have shown an average reduction of 0.35 kg eCO₂ (carbon equivalents) per kg of film using a 15% PCR addition. For injection molded tubs, a 40% addition of PP waste materials can contribute savings up to 30% fossil fuel energy usage and up to 38% less water used. It was found to be very important to use the correct balance of recycled and virgin polymers to maintain heat seal, printed graphics, and the appropriate stiffness for uninterrupted bag filling on the packaging equipment. The study also showed it is critical to achieve the correct balance of recycled and virgin polymers to maintain the heat seal initiation point, color, impact strength (Notched Izod), and the appropriate stiffness for uninterrupted tub filling.

Upcoming Events

Annual Awards Banquet

The banquet for 2013 has already been scheduled for Thursday May 9th at UW Fox Valley. We are working on securing a speaker. Awards will be given to our local college and high school students as well as their educators. If you have a nomination, please let us know [email](#).

Great Lakes Regional Meeting

The 2013 GLRM will take place in La Crosse, WI on June 5-8 at the La Crosse Convention Center. Registration is now open. See <http://qlrm-lax.sites.acs.org/> for more details.

Abstract submission is open and the deadline is April 12.

Let's have a good turn out to support our fellow WI local section!

Positive Entropy

Local Member Elected as PMSE Fellow

Our chair has been recently elected as a Fellow of the Division of Polymeric Materials: Science and Engineering (PMSE). [PMSE](#) is one of the two large polymer divisions in the ACS. Only a small number of distinguished polymer scientists are elected each year – only 4 last year. Congratulations to James!

Scientists take note: Women are key to best results

A brief, yet interesting story on the impact of gender in research; [click here for more](#).

Local Section Officers

We are always looking for new members to the Executive Committee. Please consider volunteering for Chair-Elect, Secretary, or Treasurer. We have experienced officers here to make your transition very smooth 😊 Elections will be in November. [Email](#) us with your interest!

Employment Opportunities

Lawrence University: Physical & General Chemistry

The Department of Chemistry at Lawrence University invites applications for a faculty position for the fall of 2013. [More](#)

UW Oshkosh: Assistant Professor Inorganic Chemistry

The Department of Chemistry at UW Oshkosh invites applicants for a faculty position for the fall of 2013. [More](#)

Kimberly-Clark: Materials Scientist

Experienced materials developer in the consumer products industry located in Neenah, WI. [More](#)

Kimberly-Clark: Senior Formulator

Formulator with experience in the home, institutional and personal care product categories located in Neenah, WI. [More](#)

Northeast Wisconsin Section Newsletter

Do you have items to share? Put it in the newsletter!
Send an [email](#) and we'll be glad to get it in print.