

MINNESOTA LOCAL SECTION

JANUARY 19TH: SUCCINIC ACID: A BIO-BASED BUILDING BLOCK FOR SUCCINATE POLYESTER POLYOLS IN MODIFIED THERMOPLASTIC URETHANES USING A URETHANE PRE-POLYMER PROCESS

Speaker: William D. Coggio, Ph.D., BioAmber Inc. Plymouth, MN

Location: Rojo Mexican Grill, 1602 West End Boulevard, St. Louis Park, MN 55416

Time: 5 pm - Executive Meeting; 6 pm - Dinner; 7 pm - Presentation

Cost: \$15 in advance, \$18 at the door; Students \$5

Menu: Taco Bar (chicken / beef / veggie options), Chips and Salsa, Rice, Beans, Southwest Cesar Salad, Dessert

Meal Ticket: Go to the "Web Store" link to purchase meal reservations through PayPal.

Deadline: Must register by Wednesday, January 13th

Abstract: Bio-based Succinic Acid (Bio-based SA) has emerged as one of the most competitive of the new bio-based chemicals. BioAmber's highly efficient yeast based fermentation process produces a high quality polymerization grade succinic acid (C₄H₆O₄) and does so in an efficient process that reduces the CO₂ emissions and saves energy. As a platform chemical, BioAmber's bio-based succinic acid can react with glycols to make succinate polyester polyols (SA-PEPs) useful in polyurethane (PU) chemistry. These polyols are comparable to adipic acid based polyester polyols (AA-PEPs) however, polyester based polyurethanes made using succinate polyester polyols tend to exhibit excellent strength and elongation profiles along with excellent solvent resistance compared to adipates and can generate PU with greater than 60% renewable carbon. In this study, we will present recent findings comparing polyurethanes made with different SA polyesters polyols and will describe the impact of the SA-PEP composition on viscosity, hydrolysis rate and TPU end physical properties. We will conclude by discussing how these properties can influence the performance window of these urethanes in elastomer applications. Bio-based SA and SA-PEPs provides formulation flexibility to polyurethanes and can enable thermoplastic urethane with differentiated properties and renewable carbon content, thus enabling a valuable tool for bringing sustainability and performance to the PU tool box.

Bio: Dr. William (Bill) D. Coggio is the Global Applications and Technology Support Manager for BioAmber. He earned his Ph.D. in chemistry from The Pennsylvania State University under the direction of Prof. Harry Allcock. Previously he was the Global Applications Development Lead for Silicone Elastomers with Cabot Corporation and was a Senior Research Scientist for 21 years with 3M Company in St. Paul, MN. He holds more than 25 issued US patents, has 12 peer reviewed journal publications and has given numerous professional seminars and lectures.

BioAmber is a sustainable chemicals company that has a proprietary biotechnology technology platform to convert renewable feedstocks into renewable chemicals for use in a wide variety of everyday products including plastics, resins, food additives and personal care products. BioAmber is a leading producer of Bio-based succinic acid with headquarters in Montreal Canada, a RD Center in Plymouth, MN and production facility in Sarnia, Ontario. See <http://www.bio-amber.com/> (<http://www.bio-amber.com/>) for more information.

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 **Chemists in the Library**

Saturday, Apr 27 at 1:30 PM - 3:30 PM

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Saturday, Jun 8 at 1:30 PM - 3:30 PM

 **Chemists in the Library**

Saturday, Jun 29 at 1:30 PM - 3:30 PM

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