101st Canadian Chemistry Conference and Exhibition 2018,
Edmonton, AB, CA, MAY 27-31, 2018
www.csc2018.ca

Tues. May 29, 2018
Pathways to Success for Green Fuels and Chemicals – Industry Speaks
One Day Industry Symposium
http://www.csc2018.ca/industrial-chemistry

Alberta Innovates, is a sponsor of this one-day symposium and will provide a **$100.00 discount for individuals from industry** attend.

- Be one of up to 25 companies to give a "2 Minute Company Pitch" during the symposium.
- For your discount code, contact Dr. Christine Murray Christine.murray@albertainnovates.ca or 403-382-7188.

Registration fees (www.csc2018.ca/node/10)

Registration Category	Registration
One-Day Registration Member CIC/CSC	**$325.00**
One-Day Registration Non-Member	**$410.00**

Program overview

There will be 2 concurrent industry sessions, open to all participants. This information focuses on the Pathways to Success for Green Fuels and Chemicals – Industry Speaks. Details about the Chemistry-Based Start-Ups and SME's are found on the conference website.

Chemistry-Based Startups and SME's	Pathways to Success for Green Fuels and Chemicals - Industry Speaks
Session Room CP2	***Session Room CP3***
8:00 AM Welcoming Remarks	
Invited Speaker - Ray W. Miller	

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<table>
<tr><td colspan="2">"2-Minute Company Pitch Session" - David Bressler</td></tr>
<tr><td colspan="2">Coffee Break</td></tr>
<tr><td>SR&ED Funding Opportunities for Industrial Research and Development" - Korey Conroy
"35 Years of Innovation in X-Ray Diffraction" - Nick Vukotic
"Importance of Intellectual Property" - Kazim Agha
Funding Climate for Startup and SME's in Canada (Panel Discussion)</td><td>Advances in Commercial Renewable Fuels (Panel Discussion)

Chris Tindal - Moderator
Laurel Harmon | LanzaTech , Vice President, Government Relations http://www.lanzatech.com
Steve Csonka, Executive Director, Commercial Aviation Alternative Fuel Initiative (CAAFI)
Bill Baum, Executive Chairman and Chief Business Development Officer</td></tr>
<tr><td colspan="2">Lunch</td></tr>
<tr><td colspan="2">Conference Plenary</td></tr>
<tr><td colspan="2"></td></tr>
<tr><td>"The Chemistry Behind Tattoos" - Chris Caputo
Developments Technology Transfer from Universities - TecEdmonton speaker TBD
"Developments of Online Benchtop NMR" - Susie Regel</td><td>Emerging and Advanced Sustainable Materials (Panel Discussion)

Gordon Giles - Moderator
Al-Pac
NORAM
West Fraser</td></tr>
<tr><td colspan="2">Coffee Break</td></tr>
<tr><td>"Accelerating the Commercialization of Chemical and Materials Technologies" - Matt Heuft
"The Chemical Professional Designation" -Kathy Janzen - ACPA
"Realizing Commercial Potential of Academic R&D" (Panel Discussion)</td><td>Emerging and Advanced Green Chemicals (Panel Discussion)

Ray Miller Moderator
David Lynch, Enerkem
Charity Callahan Zen Earth
John Slayter, Hexion</td></tr>
<tr><td colspan="2">5:00 PM

Invited Speaker - Chris Tindal</td></tr>
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Networking Event
At Craft Beer Market
10013 101A Ave NW (5 minute walk from Shaw)

Pathways to Success for Green Fuels and Chemicals – Industry Speaks

Plenary speaker - Ray W. Miller

Mr. Miller joined DuPont after earning his Chemical Engineering degree with highest honors from Georgia Tech in 1972. After numerous assignments in chemicals, polymer intermediates and downstream polymer businesses, in 1990 Mr. Miller was named Technology Manager, DuPont Nylon Enterprise. In 1995, Mr. Miller launched Sorona® Triexta, which later became the first DuPont polymer platform to use a bio-based raw material. He also initiated joint development programs with Genencor and Tate & Lyle, which led to commercialization of Bio-PDO™. In December 2002, Mr. Miller was appointed Program Director, Biorefinery Development. He led a consortium of partners in a $38MM DOE program which created the technology for the Nevada, Iowa cellulosic ethanol plant. In May 2005, Mr. Miller organized and launched a bio-based performance polyols business, DuPont Cerenol®. In June, 2010, Mr. Miller was named Global Business Development Manager, Biomaterials and Specialties, a position he held until his retirement from DuPont at the end of December, 2011.

On May 14, 2012, Mr. Miller was named Chief Business Officer at Verdeyzne, Inc., a small, innovative biomaterials company located in Carlsbad, California. At the end of 2015, he retired from that position. He launched a sole proprietorship consulting company, Verdecute Consulting, and he continues to serve as a strategic advisor on several boards, including the Delaware Sustainable Chemistry Alliance (DESCA) and the Center for Bioindustrial Renewable Chemicals (CBiRC).

Mr. Miller was inducted into the Georgia Tech Academy of Distinguished Engineering Alumni in 2001. He was part of the joint DuPont/Genencor team that received the 2003 EPA Presidential Green Chemistry Challenge award for "Microbial Production of 1,3-propanediol". He was recognized by DuPont with 5 corporate excellence awards, including the prestigious Bolton-Carothers Award for the development of Sorona® and the Sales and Marketing Excellence Award for successfully petitioning the FTC to obtain a new sub-generic "triexta" for PTT fibers. Mr. Miller is an inventor of 8 issued patents, has published 5 journal articles and has made numerous presentations to conferences on bio-based materials and bio fuels.

Growing Sustainably – Lessons Learned in Developing and <u>Launching New Bio-based Businesses in the Chemical Industry</u>

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The chemical industry needs to grow sustainably and profitably. The speaker has extensive experience in developing and launching new bio-based materials businesses both in a large company (DuPont) and in a startup company (Verdezyne). He will examine the underlying criteria for success in growing new businesses sustainably, and will illustrate these by citing examples from his past. The future role of biotechnology and renewable feed stocks will be examined, along with the impact of regulatory and societal pressures. He will provide insights from his experiences and finish with a check-list of learnings for managers to consider when engaging in the development of new bio-based additions to company portfolios.

Keynote speaker - Chris Tindal

Chris Tindal is the Assistant Director for the Commercial Aviation Alternative Fuels Initiative (CAAFI) whose goal is to promote the development and commercialization of alternative jet fuel options that offer equivalent levels of safety and compare favorably on cost with petroleum based jet fuel, while also offering environmental improvement and security of energy supply for aviation. He helps to manage the coalition of CAAFI stakeholders and provide leadership and strategic guidance to CAAFI's Work Teams, Federal government interagency initiatives, State and Regional programs, and International initiatives consistent with CAAFI priorities.

Chris is an Adjunct Professor on the faculty of the Queensland University of Technology (QUT) in Brisbane, Queensland. In that role, Professor Tindal assists in exploring research and development opportunities for QUT, as well as investigating potential opportunities to establish biorefineries in the State of Queensland.

Chris is also a member of the Board of Directors for Advanced Biofuels USA, a nonprofit educational organization that advocates for the adoption of advanced biofuels as an energy security, military flexibility, economic development and climate change mitigation/pollution control solution. Advanced Biofuels USA encourages public understanding, acceptance, and use of advanced biofuels by promoting research, development and improvement of advanced biofuels technologies.

Chris recently retired as the Director for Operational Energy underneath the Deputy Assistant Secretary of Navy for Energy, where he was in charge of setting energy policy and direction for the Department of the Navy and promoting the adoption of alternative fuels and renewable energy resources. Additionally, he developed intergovernmental, international, and industry relationships throughout the energy field. He was the Navy leader of the pioneering U.S. Department of Agriculture/ U.S. Department of Energy/ U.S. Navy Alternative Fuels Initiative which developed programs to launch the advanced biofuels industry. In his role, Chris successfully led the Great Green Fleet effort, in which the U.S. Navy acquired and used 77 million gallons of F-76 alternative fuel blend for their ships in the Great Green Fleet deployment in 2016.

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He has had the honor to be named in the peer-selected competition for the "Top 100 People in the Bioeconomy" Awards by the Biofuels Digest from 2013 through 2017.

Chris Tindal was a Navy man for over 40 years. He graduated from the U.S. Naval Academy in 1980 with a degree in Mechanical Engineering, and served on Active Duty on two ships in Charleston, South Carolina. He retired as a Captain in the Navy Reserves in 2010. Chris is a Professional Engineer and a Certified Energy Manager. Originally from Alabama, Chris currently lives in South Carolina.

Panelists from:

LanzaTech

LanzaTech is revolutionizing the way the world thinks about waste carbon by treating it as an opportunity instead of a liability. LanzaTech's novel gas-to-liquid technology has opened up vast new sources for making low-carbon chemicals and fuels that displace petroleum without the environmental concerns associated with crop- and land-based bioproducts.

LanzaTech's bioprocessing platform offers an economically robust route to carbon capture and re-use enabling the monetization of local gas sources with minimal capital investment, giving off-grid communities access to clean, cost competitive and reliable energy.

Enerkem

CELLULOSIC ETHANOL AND CHEMICALS FROM WASTE. Enerkem's disruptive technology converts non-recyclable municipal solid waste (i.e. garbage) into cellulosic ethanol, methanol and other renewable chemicals, with better economics and greater sustainability than other technologies relying on fossil sources.

Enerkem operates a full-scale commercial facility in Edmonton, Canada as well as both an innovation centre and a pilot facility in Quebec. The company is developing several cellulosic ethanol and methanol production facilities in North America and globally, based on its modular manufacturing approach.

HEXION

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Responsible Chemistry. We are pioneers of a higher chemistry. A chemistry designed to address the most pressing issues of our time. Forged from generations of invention and collaboration. Committed to safe manufacturing and community involvement. This powerful chemistry understands no boundaries, making it capable and responsible for shaping the future. This is the responsible path forward. This is what we call Responsible Chemistry.

Our legacy is all around you. For over 100 years, Hexion has been advancing specialty chemicals and performance materials. Everywhere you look, everything you touch, you can find our chemistry at work to make your world better, safer, and cleaner.

Zen Earth Corp.

Zen Earth Corp specializes in replacing the commercial use of toxic chemicals with providing green certified, well proven, state of the art biodegradable products for a wide variety of worldwide industrial applications. Thus significantly reducing and/or eliminating man made contaminants in our earth, water, and atmosphere. Our long list of industries we service includes: Oil & Gas, Hospitality, Agriculture, Military, Transportation, Government And Much More.