



*virtu*AIChE®

*This month's meeting:*

*Primary (with live discussion/live chat) Wednesday, Aug 26 at 9 pm ET (US) / 1 am GMT  
Alternate 1 (with live discussion/live chat) Thursday, Aug 27 at 6 am ET (US) / 10 am GMT  
Alternate 2 (with live discussion/live chat) Thursday, Aug 27 at 1 pm ET (US) / 5 pm GMT*

## **Modeling Better Chemicals from Models**

Presented by  
Dr. Kevin Joback

Refrigerants, shaving gels, light bulbs, inks, and fuels: these are just some of the chemical products we use each day. Exciting new chemical products such as artificial blood, energy efficient carbon dioxide absorption solvents, high performance rocket fuels, and enhanced heat transfer fluids are currently being researched. But what exactly are chemical products? How are these products designed? And how can we design even better chemical products?

Designing chemical products has always been a challenging task. Traditionally, the design process would require decades of product specific knowledge and a considerable amount of trial and error experimentation. Today we are developing more systematic, scientific approaches to chemical product design. Software tools can generate tens of thousands of candidate molecular structures and mixture formulations. Structure property relationships can be used to computationally predict the properties of each candidate and screen them against constraints on performance, safety, and environmental impact. Promising candidates can then be screened using additional tools to ensure they can be produced in an efficient and sustainable manner.

Many chemical engineers never think about how we can contribute to the design of chemical products. We know we can design the processes that make these chemical products, but what about designing the products themselves? I hope to show how basic chemical engineering knowledge, e.g., knowledge of thermodynamics, transport theory, safety, and environmental analyses and, most importantly, physical properties, is essential to the design of effective and efficient chemical products. Some examples will show how knowledge of rheology is used to design aircraft anti-icing fluids; how knowledge of phase equilibria is used to design shaving cream; how knowledge of emulsion stability is used to design blood substitutes.

For more than 30 years, Dr. Kevin Joback has worked in the areas of physical property estimation and chemical product design. He has developed several group contribution estimation techniques now widely used in industry. He has designed numerous chemical products including environmentally

friendly cleaning and separation solvents, new lubricants, enhanced thermal storage materials, improved jet and rocket fuels, and non-hazardous aircraft deicing fluids. Dr. Joback holds a bachelor's degree from Stevens Institute of Technology, a master's degree from MIT, and a PhD also from MIT. All his degrees are in chemical engineering. He is currently president of Molecular Knowledge Systems, Inc.

***Note that registration for VLS meetings is required.  
Our meetings are still free to attend and open to all.***

### Jul Meeting Registration Information

Primary	Alternate 1	Alternate 2
(Live Presentation/Live Chat)	(Recorded Presentation/Live Chat)	(Recorded Presentation/Live Chat)
Aug 26 at 9 PM EST / 1 AM GMT	Aug 27 at 6 AM EST / 10 AM GMT	Aug 27 at 1 PM EST / 5 PM GMT
Register in advance for the <a href="#">Primary Meeting</a>	Register in advance for the <a href="#">Alternate 1 Meeting</a>	Register in advance for the <a href="#">Alternate 2 Meeting</a>

After registering, you will receive a confirmation email containing instructions for joining the meeting, along with add-to-calendar links.

## AIChE News

The AIChE hosts technical conferences around the world. Check [www.aiche.org/conferences](http://www.aiche.org/conferences) for registration and presentation information for this year's events.

Dates	Event
Aug 3 – 5	International Congress on Sustainability Science & Engineering (ICOSSE '20)
Aug 3 – 5	RAPID@ICOSSE
Aug 4 - 5	2020 Chemours Sponsored Virtual CCPS Faculty Workshop
Aug 5	Process Intensification – Breakthrough in Design, Industrial Innovation Practices, and Education
Aug 5	RAPID Webinar: Process Intensification – Breakthrough in Design, Industrial Innovation Practices, and Education
Aug 6	Networking as virtual Conferences: What to do before, during and after grow collaborations
Aug 12 – 14	Solar Energy Systems Conference '20
Aug 16	The 32 <sup>nd</sup> Ethylene Producers' Conference
Aug 16	The Intersection Between Process Safety and Process Intensification: An interactive RAPID/CCPS Workshop
Aug 17 – 19	2020 Virtual Frontiers in Particle Science and Technology
Aug 17 – 21	2020 Virtual Spring Meeting and 16 <sup>th</sup> GCPS
Aug 18 – 20	RAPID@Spring 2020
Aug 20	CCPS Australia Regional TSC Meeting
Aug 23 – 27	CHISA 2020
Aug 24 – 25	The Intersection Between Process Safety and Process Intensification: An Interactive RAPID/CCPS Workshop
Aug 26	Chemical Process Electrification: An Overview

Aug 27	August 2020 TSC Meeting
Aug 28 – 30	2020 India Student Regional Conference
Sep 8 – 10	Commercializing Industrial Biotechnology 2020
Sep 10	CCPS Canada TSC Meeting
Sep 14 – 16	2020 Engineering Cosmetics and Consumer Products Conference
Sep 15 -17	Center for Hydrogen Safety US Conference 2020
Sep 15 – 17	Sustainable Waste Management Conference
Sep 17 – 18	8 <sup>th</sup> CCPS China Conference on Process Safety
Sep 22	CCPS India Regional TSC Meeting
Sep 23	Batch to Continuous Processing in the Pharmaceutical Industry
Sep 24	CCPS Middle East Regional TSC Meeting
Sep 28 – 30	2020 Process Development Symposium Europe – Postponed
Sep 28	5 <sup>th</sup> Bioengineering & Translational Medicine Conference
Sep 30 – Oct 1	Enterprise and Infrastructure Resilience Workshop

## Upcoming VLS Meetings

The VLS has monthly meetings. The following meetings have firm dates and speakers.

Dates	Topic
September 2020	Previous Student Presentation Competition Winners
October 2020	Chemical Incident Reporting Regulation
November 2020	Storage and Transport of hazardous materials
December 2020	State of the Section

## Past VLS Meetings

The VLS records its monthly meetings and archives them on the AIChE Academy website in case you missed a meeting or are looking for a particular topic. See below for current recordings.

Date	Event
Jun 2020	<a href="#">The Next Digital Leap to AI (An Interactive Webinar)</a>
May 2020	<a href="#">Challenges and Benefits of Remote Operator Training using Cloud-Deployed High-Fidelity, First-Principles Based Standard Operator Training Simulators (SOTS)</a>
Apr 2020	<a href="#">NASEM Chemical Engineering in the 21st Century Study: Give your input!</a>
Mar 2020	<a href="#">Is Your Focus Your Magic!</a>
Feb 2020	<a href="#">DIERS data/standards in HAZOPS of two phase flow</a>
Jan 2020	<a href="#">A Brief History of Measurement</a>
Nov 2019	<a href="#">Using Thermal Imaging to Guard Industrial Facilities</a>
Oct 2019	<a href="#">Python for chemical engineers: Getting started</a>
Aug 2019	<a href="#">Reactive Chemical Hazards</a>
Jul 2019	<a href="#">Should I Py or Should I Fortran?</a>
Jun 2019	<a href="#">Design Considerations for Organic Electronic Materials and Devices</a>
May 2019	<a href="#">Why Can't You Compete Without Virtual/Augmented Reality in Your Plant</a>
Apr 2019	<a href="#">The Chemistry of Bourbon: The "spirit" of molecules</a>
Mar 2019	<a href="#">Demystifying Professional Engineering Licensure and How to Put it to Work for you</a>
Feb 2019	<a href="#">Municipal Wastewater and Sludge Are a Resource, Not a Waste: Coping with Tightening Water Supplies and Limited Landfill Availability</a>

## Lock Down and self-improvement

Mario Arredondo

Maybe it has been a pretty hard time being away from all the things we used to do and even being away from our loved ones, but this time rather than being a time to miss the old behaviors this could be converted into an investment in ourselves to evolve into our next better version.

It has been amazing how many of the best-known institutes all around the globe have been able to share experiences, knowledge, webinars, readings and many other options to access resources that usually are not at hand.

AspenTech made available some user's certification programs for all of those who are Chemical Engineers related to simulation or are proficient in the use of AspenTech's software. Those certifications are totally free, just need to register in AspenTech's support website. [Review here.](#)

Harvard University shared some virtual courses in many topics. Being one of the most recognized universities around the globe the topics and knowledge shared is highly valuable. Trends are around Health and Medicine, but you can also learn some history, arts, science, social sciences, and humanities at the cost of nothing. [Review here.](#) MIT's open courses are available with graduate and undergraduate courses [Review here.](#) Stanford's free online programs [Review here.](#)

Louvre Museum made available many virtual tours. While it may not be the same experience and feeling of a trip to Paris and hanging around this amazing place, it is a good time to spend time reading all the stories behind those master works and taking time to appreciate at your own pace those works that maybe are not available with all the people around and a limited amount of time. [Review here.](#)

For those who are waiting to return to travel and explore new places, now is the time to plan and look for the better options. Some resorts are now offering high-class experiences at discounted costs just to pay ahead. Even some airlines and rental car agencies are offering discounts and better options to enjoy your next holidays once the vaccine is fully developed.

Maybe a different option is to look further into improving your health. Being restricted on going out does not necessarily means to turn off your batteries and stop doing thing that could benefit you. You may try new stuff as yoga or Pilates. The benefits you can get from this are amazing while recovering some movement, activate your body and getting flexibility. Same thing goes with food, there is no other opportunity like this to learn how to cook yourself healthy and delicious food and detoxicate your body.

These are only some thoughts that wanted to share with you, wishing the best until a working vaccine becomes available.

## We're in this Together

The ongoing COVID-19 situation has provided us with a reminder that even in uncertain times, AIChE is a diverse community of people who lead, create, inspire and learn—together. AIChE is here to help. Knowing that many of our members are working virtually, AIChE has created this page to act as a hub for online content, access to communities, and communication updates. [Learn more.](#)

## Inside Johnson & Johnson's 'lightning speed' effort to create a Covid-19 vaccine

Pharmaceutical companies are racing to find a way to prevent and treat Covid-19. They're forming new partnerships to accelerate R&D, leveraging new data to better understand the virus and its progression, and shifting priorities to hopefully bring a halt to the global pandemic. [Review here](#)

## Texas A&M study shows link between face masks and flattening COVID-19 curve

Renyi Zhang, a Texas A&M Professor of Atmospheric Sciences and the Harold J. Haynes Chair in the College of Geosciences, says the team of professors from the University of Texas, the California Institute of Technology, and UC San Diego, looked at the trends in the world's biggest initial hot spots. [Review here](#)

## The Virtual Local Section's Executive Committee

### Officers

Chair: [Dan Lambert](#)  
Senior Vice Chair: [Paul Adamson](#)  
Vice Chair Pro Tem: [Aaron Sarafinas](#)  
Immediate Past Chair: [Kirsten Rosselot](#)  
Secretary: [Laura Gimpelson](#)  
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## Did You Know?

You can visit [the VLS website](#) for more information on the Virtual Local Section's mission, activities, and membership. Also at this website, AIChE student members and VLS members can watch previous webinars for free.

## Subscription Information

Current fully paid members of the Virtual Local Section receive this newsletter. If you wish to update your email address, contact the AIChE's New York Office for Permanent Address Corrections at [xpress@aiiche.org](mailto:xpress@aiiche.org) or 1-800-242-4363

## Continuing Education Credits

Members of AIChE can receive 1 hour of continuing education/professional development credit for attending Virtual Local Section webinars. Send your name, the certificate number on your professional engineer's license, and the licensing entity (state or country) in which you are licensed to our Secretary, [Laura Gimpelson](#), to receive one hour of continuing education credit for attending this meeting.