Rocky Mountain AIChE News

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April Section Meeting: Zeolite Structure/Property Relationships for Catalysis and the Building of a Business Strategy from your Science

Acidic solids including zeolites are the base for many catalytic applications in today's world. Zeolites are aluminosilicate solids with well-defined crystallographic connectivity possessing permanent microporosity and used at scale, including for production of almost all gasoline. During the talk, I will discuss several zeolitic solids where we have exploited the unique structural features to enable novel selectivity patterns during catalysis. Among the materials, I will discuss the synthesis, structure solution, and catalytic properties of UZM-55. UZM-55 has a 1-dimensional pore containing both 10-membered and 12-membered delimiting rings, the first time this structure motif has been observed. We studied the catalytic properties of this material in methanol to olefins to understand how ring size affects reaction mechanism.

A second topic will be description of our recent work utilizing inorganic/organic composite Na-FAU based zeolite catalysts. Acrylic acid and the four primary acrylate derivatives are the cornerstone of a $10B market with broad application across super-absorbent polymers, paints, coatings, and adhesives industries. We focus on the

April Section Meeting

Topic: Zeolite Structure/Property Relationships for Catalysis and the Building of a Business Strategy from your Science

Speaker: Christopher P. Nicholas, Principal of C2P Sciences L3C

Date: Tuesday, April 19th

Time: 5:15 – Check-in/Dinner (DENVER WATCH PARTY)
6:00 – Online Zoom Meeting/Introduction
6:05 - Career Discussion
6:15 - Technical Presentation
7:15 – Q & A

OPTION 1: Online Zoom Meeting
Cost: Free, Registration Required

OPTION 2: Denver Watch Party with Dinner and Networking!
Cost: $20 Members
$25 Non-Members
$10 Students
Register & Pay by **Mon, 4/18**
Location: Clements Community Center, ABC Room, 1580 Yarrow St, Lakewood, CO 80214

More information can be found on our website.

conversion of feeds derived from lactic acid, a product sustainably fermented from a range of bio-derived sugar sources. Here, we use amines as inert and site-selective chemical titrants to suppress side reactions on in situ-generated Brønsted acid sites (BASs) during dehydration of lactates to methyl acrylate and acrylic acid.

Finally, I'll finish with a business focused discussion. Many of us have had the thought during difficult times that we'd love to be our own boss. But what does that really entail and is it for you? Among the keys to converting scientific potential into a growing chemical business is developing and then meshing the overall business strategy with the necessary R&D strategy to form a minimum viable product. I'll discuss what this means and how can you apply these strategies to your day-to-day work.

Chris is the Principal of C2P Sciences L3C, a small business for the advancement of science in the areas of chemistry and catalytic processes and the Co-Founder and President of Låkril Technologies, the startup he created in mid-2021 to commercialize a catalytic process for bio-based acrylic production. Prior to founding a business based on sustainable catalysis, he worked 15 years at Honeywell UOP in technical and managerial roles primarily focused on inventing and catalytically testing new materials and processes. Particular foci have included heterogeneous catalytic processes such as olefin oligomerization and alkylation, synthesis of inorganic materials (primarily metal oxides and zeolites), process engineering, molecular adsorption, and olefin metathesis. For this work, Chris was awarded the 2020 Herman Pines Award in Catalysis.

Chris earned his Bachelor of Arts from Kalamazoo College and a PhD in 2006 at Northwestern University. Chris is a 25-year ACS Member and an AIChE Senior member who is an inventor on more than 115 US and foreign patents and coauthor of 30+ peer-reviewed journal articles and a book chapter. Along with responsibilities as a member of the Editorial Advisory Boards of ACS Catalysis and Industrial & Engineering Chemistry Research, he has been involved with the Chicago Catalysis Club since graduate student days and has served as Director, Program Chair and President.

WE NEED VOLUNTEERS!

We are looking for officers for our next program year including Program Chair, Treasurer, Secretary and liaisons for every state we serve. Won't you consider being a part of the team? If you would like more information about the positions, please contact the current officer for a description of their duties.

We need your ideas and help to make next year's program another outstanding year! Please contact Marc Paffhausen, by April 18 if you are interested.

AIChE Meetings

2022

Apr 10-14	2022 Spring Meeting and 18th Global Conference on Process Safety San Antonio, TX
May 2-5	2022 Synthetic Biology; Evolution, Engineer and Design (SEED) Arlington, VA
June 1-3	Advanced Manufacturing and Processing Conference Bethesda, MD
June 7-9	Process Development Symposium Philadelphia, PA
June 26-28	NDEW-ChE: National Diversity Equity Workshop for Chemical Engineering Academic Leaders Baltimore, MD

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The objectives of AIChE are to advance chemical engineering in theory and practice, to maintain a high professional standard among its members, and to serve society, particularly where chemical, engineering can contribute to the public interest.

VOLUNTEER AS A YOUNG PROFESSIONAL LIAISON (YPL)

We are looking for Young Professional Liaisons for each state – CO, NM, WY, SD & MT. Please send nominations to any section officer listed above.

MEETING SCHEDULE

The Rocky Mountain Local Section (RMLS) of AIChE generally meets the second or third Tuesday of every month, September through May.