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Wednesday, December 7th, 2022 at 4:00pm EST
Virtual Meeting: Zoom

Dr. Beata Kilos-Réaume, Ph.D.



Senior Research Scientist/Technical Leader
Chemical Science, Core Research & Development, Dow

Untraveled roads to familiar destinations: exploring new pathways to produce classic chemicals

MMA is a specialty monomer to produce polymethylmethacrylate (PMMA) where increasing demand has motivated the industry to develop clean technologies based on leveraging abundant ethylene from inexpensive shale gas feedstock. The dominant commercial process utilizes highly toxic reagents such as hydrogen cyanide to produce MMA (ACH route). This has motivated processes based on C2 carbonylation as attractive technologies for MMA manufacture. In particular, efforts are underway to develop platforms for producing propionate intermediates through hydroxy- and methoxy-carbonylation, which in turn, can be used to produce methyl methacrylate monomers through condensation process with formaldehyde.

Iodide-promoted molybdenum hexacarbonyl has been reported to be active for carbonylation of ethylene and carbon monoxide into propionic anhydride or propionic acid. We will discuss the synthesis and characterization of novel heterogeneous catalytic systems for ethylene hydroxy- (Mo(CO)₆/support) and methoxy-carbonylation (Co_xS_y) and the relationships between

catalyst properties and catalyst performance. Remarkable catalysts were studied that facilitated significant steps forward in both the advancement of catalysis science and establishing the basis for new technologies. An emblematic example is represented by $\text{Mo}(\text{CO})_6$ on solid acid support for hydroxy-carbonylation and metal sulfide catalysts for methoxy-carbonylation process.

Speaker Bio

Dr. Beata Kilos-Réaume is a Senior Research Scientist and Technical Leader in Chemical Science, Core R&D at Dow. Beata is recognized as a leader in heterogeneous catalysis in the scientific community. Beata serves as treasurer of the North American Catalysis Society, sits on the advisory boards of *Reaction Chemistry & Engineering* journal and the *Journal of Catalysis*, and is a first industrial editor for the *ACS Catalysis* journal.

Beata began her Dow career in 2008. Since then she has worked on a wide array of projects with a focus on heterogeneous catalysis and materials science. Over the course of her career Beata has defined, led, and contributed to R&D projects spanning multiple Dow businesses including Industrial Solutions, Consumer Solutions, Construction Chemicals, Coating Materials, Hydrocarbons, Polyurethanes, Performance Silicones. Beata's technical contributions and leadership have enabled the advancement of numerous R&D projects and technologies throughout her career at Dow. Beata's past R&D work at Dow has included contributions toward the commercialization of UNIFINITY™ fluidized catalytic dehydrogenation process technology for on-purpose propylene, which has been recognized with a 2017 ICIS Best Process Innovation Award and a 2017 R&D 100 Award. In recognition of her scientific achievements, Beata was named a 2017 ACS Rising Star award recipient and 2018 ACS Early Career Fellow of the Industrial & Engineering Chemistry Division. She is also a recipient of a 2017 Dow Chemical Engaged for Impact Award and 2017 WIN champion award.

Beata also led a 5-year external collaboration with Northwestern University on C₂-carbonylation. Beata has 7 granted patents, 13 filed Patent Applications, and over 80 external publications and presentations.

Prior to joining Dow, Beata graduated from Adam Mickiewicz University in Poznan, Poland with a M.Sc. and Ph.D. in Chemistry. As one of Europe's few scholars selected for the prestigious Marie Curie Fellowship, Beata completed work toward the latter degree at the Institut de Recherches sur la Catalyse et l'Environnement de Lyon in Villeurbanne, France. Beata followed this with a joint appointment at the University of California, Berkeley's Chemical Engineering Department, and the Lawrence Berkeley National Laboratory.

Please refer to email announcement for login details.

Presentation **4:00 PM** **Annual Membership Dues** **\$35 (Students = \$15)**

Deadline for reservations is 4:00PM Monday, December 5th, 2022

To make your reservation, fill out the [online form](#).
