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Wednesday, April 18th, 2018
Clarion Hotel, 60 Cottontail Ln, Somerset, NJ 08873

Professor Alan S. Goldman



Department of Chemistry and Chemical Biology
Rutgers - The State University of New Jersey, 08854, USA

Catalysis by Pincer-Iridium Complexes. Breaking C-H Bonds, Making C-C Bonds, and Various Combinations Thereof

Iridium complexes have played a leading role in the organometallic chemistry of alkanes and unreactive C-H bonds since the inception of the field 30 years ago. We have found that “PCP”-pincer-ligated iridium complexes are particularly effective for the dehydrogenation of alkanes and have incorporated this reaction into tandem systems for several catalytic transformations based on dehydrogenation. A closely related class of reactions that we are exploring is dehydrogenative coupling. More recently we have turned attention to iridium Phebox complexes. Although the (PCP)Ir and (Phebox)Ir units are formally isoelectronic, the former operates via C-H activation by Ir(I) while the latter effects dehydrogenation via Ir(III) (as an acetate complex) and possibly Ir(V) intermediates. Such a high-oxidation-state catalytic cycle offers advantages for many potential applications of dehydrogenation. In parallel, however, we find that the low-oxidation-state (+I) chemistry of (Phebox)Ir offers its own novel hydrocarbon chemistry.

References

1. Gao, Y.; Guan, C.; Zhou, M.; Kumar, A.; Emge, T. J.; Wright, A. M.; Goldberg, K. I.; Krogh-Jespersen, K.; Goldman, A. S. *J. Am. Chem. Soc.* **2017**, *139*, 6338–6350.
2. Wilklow-Marnell, M.; Li, B.; Zhou, T.; Krogh-Jespersen, K.; Brennessel, W. W.; Emge, T. J.; Goldman, A. S.; Jones, W. D. *J. Am. Chem. Soc.* **2017**, *139*, 8977-8989.
3. Goldberg, K. I.; Goldman, A. S. *Acc. Chem. Res.* **2017**, *50*, 620-626.
4. Kumar, A.; Bhatti, T. M.; Goldman, A. S. *Chem. Rev.* **2017**, ASAP doi.org/10.1021/acs.chemrev.7b00247

Speaker Bio:

Alan Goldman received his B.A from Columbia University in New York in 1980 and his Ph.D. from Columbia in 1985, studying the mechanisms of photoinduced organometallic reactions in the laboratory of Prof. David R. Tyler. He then took an IBM Post-doctoral Fellowship in the lab of Prof. Jack Halpern at the University of Chicago. Goldman began his independent career as an assistant professor at Rutgers University in 1987 where he is currently Distinguished Professor of Chemistry. His research focuses on the development and mechanistic study of transition-metal-catalyzed transformations of small molecules and relevant fundamental chemistry. Goldman has received the Camille and Henry Dreyfus Distinguished New Faculty Award, the Union Carbide Innovation Recognition Award, an Alfred P. Sloan Fellowship, a Dreyfus Teacher-Scholar Fellowship and the inaugural ACS Catalysis Lectureship Award for the Advancement of Catalytic Science.

Dinner is a buffet, and includes a choice of beef, chicken or fish		Members	\$40
		Non-members	\$50
Social Hour (Cash Bar)	6:00 PM	Students	\$25 (Student Members = \$10)
Dinner	7:00 PM	Retired/Post-Doc/Unemp.	\$40 (Members = \$30)
Presentation	7:45 PM	Annual Membership Dues	\$35 (Students = \$15)

Deadline for dinner reservations is 4:00 p.m. Friday, April 13th, 2018

To make your reservation, fill out the [online form](#). With the exception of extreme circumstances, anyone not canceling reservations by the above deadline will be billed for dinner regardless of attendance.

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