

Titanium alkylidynes

C–H bond activation and beyond

Daniel J. Mindiola
University of Pennsylvania

31 de Octubre de 2013

10:00

Sala de Grados de la Facultad de Ciencias

CICLO CONFERENCIAS ISQCH 2013

iSQCH
Instituto de Síntesis Química y Catálisis Homogénea

Facultad de Ciencias, Universidad de Zaragoza - CSIC
C/ Pedro Cerbuna, 12. Zaragoza 50009. Spain



CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS



**Universidad
Zaragoza**



**Facultad de Ciencias
Universidad Zaragoza**

Titanium alkydines. C–H bond activation and beyond

Daniel J. Mindiola

Department of Chemistry, University of Pennsylvania, Philadelphia PA, USA

mindiola@sas.upenn.edu

<http://mindiolagroup.chem.upenn.edu/>

We will present the reactivity of a transient titanium alkyldyne (PNP)Ti≡C[†]Bu (PNP = N[2-P(CHMe₂)₂-4-methylphenyl]₂⁻), specifically how this species engages in intermolecular C-H activation and functionalization reactions. Such species can dehydrogenate methane, and C2-C8 alkanes (linear ones) selectively at the terminal position to form ethene, as well as the kinetic alpha-olefin product. The mechanism to this transformation as well as other new reactions such as the dehydrogenation of cyclohexane in addition to trapping reactions will be presented and discussed.



Daniel José Mindiola was born in San Cristóbal, a city located in the far southwest Andean region of Venezuela and approximately 45 minutes from the border with Colombia. He studied in Venezuela until his third year in high school, and then moved to Michigan (US) where he graduated and then completed a BS in chemistry at Michigan State University, East Lansing, Michigan. In 2000, he completed his Ph. D. degree from MIT with Professor Christopher C. Cummins and continued work in small molecule chemistry as an NIH and FORD post-doctoral fellow in the laboratories of Professor Gregory L. Hillhouse at the University of Chicago. In 2002 Daniel accepted an invitation to join the Chemistry Faculty at Indiana University in the city of Bloomington, Indiana. He rose through the ranks to become Full Professor in 2011. After 11 wonderful years at Indiana University, Daniel then moved to Philadelphia where he was appointed Presidential Term Professor at the University of Pennsylvania.

His research area is centered in synthesis of reactive and unsaturated compounds having metal-ligand multiple bonds, as well as understanding electronic structure and reactivity with small molecules, specifically C-H bond activation of alkanes and C-X bond activation of heterocycles. Daniel has published over 110 articles in refereed journals, presented over 120 invited lectures at universities, industries, and conferences worldwide. Since 2011 he has served as Associate Editor for Dalton Transactions (the Americas). Some notable accolades include the National Fresenius Award (Phi Lambda Upsilon) from the American Chemical Society, the Friedrich Wilhelm Bessel Research Award sponsored by the Humboldt Foundation, the Camille and Henry Dreyfus New Faculty Award and Teacher-Scholar Award, the National Science Foundation CAREER Award, the National Science Foundation Presidential Early Career Award for Scientists and Engineers (PECASE), a Alfred P. Sloan Research Fellowship, a Japan Society for the Promotion of Science Fellowship, and a National Science Council of Taiwan Fellowship.