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Organic Transformations Enabled by Small Molecule Evolution

ABSTRACT:

The synthetic manipulation of C—C bonds is a long-standing challenge in organic chemistry. Approaches to the generation of organometallics, reactive nucleophiles, radicals and carbocations via the evolution of small molecules (CO₂, H₂) will be discussed. These reactions harness the energy inherent in carboxylic acids to allow the conversion of acids to a wide variety of synthetically useful chemotypes.

BIO:

Jon A. Tunge received a B.S. in Chemistry from the University of Idaho where he worked with Prof. Ray von Wandruszka on the development of fluorescent probes for high explosives. From 1995-2000 he worked on developing asymmetric transformations of organozirconocenes under the direction of Prof. Jack R. Norton. After receiving his Ph.D. from Columbia University in 2000, he moved to the University of Wisconsin-Madison to study the mechanisms of organometallic transformations under the guidance of Prof. Charles P. Casey. In the fall of 2002 Dr. Tunge joined the faculty at the University of Kansas, where he has established a research program combining the topics of catalytic reaction development and green synthetic chemistry. He is the Richard S. Givens Chair in Chemistry and is the recipient of an NSF-CAREER Award (2005), the W. T. Kemper Fellowship for Teaching Excellence, and the University Scholarly Achievement Award.