Catalytic Hydroarylation of Carbon-Carbon Multiple Bonds

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DESCRIPTION

Filling a gap in the literature, this book comprehensively reviews catalytic C-H addition reactions of (hetero)aromatic hydrocarbons across carbon-carbon multiple bonds. In so doing, it summarizes both the scope as well as the limitations of different catalyst systems and building blocks, while highlighting their application to the synthesis of pharmaceuticals as well as commodity chemicals. Focusing on the latest developments, the team of authors comprising leaders in the field covers such topics as the hydroarylation of olefins, alkyne hydroarylation in the presence of transition metal catalysts, reaction of alkynes with arylboronic acids, and allene hydroarylation, as well as the synthesis of functionalized arenes and heteroaromatics. A must-have for synthetic chemists in academia and industry dealing with catalysis, organometallic chemistry, the synthesis of natural products, fine chemicals, pharmaceuticals, products of the chemical industry and organic materials.

ABOUT THE AUTHOR

Lutz Ackermann is Professor of Chemistry at Georg-August-University Göttingen, Germany. He obtained his Ph.D. under the supervision of Prof. Dr. A. Fürstner at the Max-Planck-Institut für Kohlenforschung in Mülheim/Ruhr, Germany, in 2001. He then was a postdoctoral fellow with Prof. R.G. Bergman at the University of California (Berkeley, USA), before initiating his independent career in 2003 at Ludwig-Maximilians-University in Munich, Germany. In 2007, he was promoted to full professor at the Georg August-University Göttingen. His research is focused on the development of novel concepts for sustainable catalysis, with a topical focus on C-H activations. He was awarded, among others, the Gottfried-Wilhelm-Leibniz Prize (2017), an ERC Grant (2012), the...
BASF Lecture at UC Berkeley (2014), and held visiting professorships in Milano, Perugia, Pavia (Italy), Wisconsin, Madison (USA), and Osaka (Japan). He is the editor of the book "Modern Arylation Methods" (Wiley-VCH) and has co-authored more than 8 book chapters and 240 referred journal publications.

T. Brent Gunnoe is the Commonwealth Professor of Chemistry at the University of Virginia, USA, since 2008. He received his Ph.D. from the University of North Carolina (USA) in 1997 under the director of Prof. J. Templeton and did postdoctoral work at the University of Virginia from 1997 to 1999. He began his independent career as an assistant professor at North Carolina State University in 1999. He was the recipient of a NSF CAREER Award, an Alfred P. Sloan Research Fellowship and the LeRoy and Elva Martin Award for Teaching Excellence. He currently serves as associate editor for "ACS Catalysis". From 2009 until 2015 he was the Director of the Center for Catalytic Hydrocarbon Functionalization (CCHF), which was an Energy Frontier Research Center funded by the United States Department of Energy. Currently, he leads the University of Virginia effort within MAXNET Energy, a consortium from the Max Planck Society that is focused on the develop and understanding of catalytic processes for energy production and use. He is co-inventor on three patents, co-author of four book chapters and more than 135 referred journal publications, and he has delivered over 100 invited lectures that are focused on fundamental aspects of catalyst technologies applied to the development of new energy resources as well as improved processes for the petrochemical industry and fine chemical synthesis.

Laurel Goj Habgood is an Associate Professor of Chemistry at Rollins College (USA). She obtained her Ph.D. from Duke University (USA) under the direction of Prof. R. Widenhoefer in 2004. She completed postdoctoral research in the group of Prof. T. B. Gunnoe at North Carolina University (USA) from 2004 to 2006 and a sabbatical project with the group at the University of Virginia (USA) in 2012. In 2006 she started her independent career at Rollins College. Her research with undergraduates utilizes metal-NHC complexes as catalysts for organic transformations. She was awarded the endowed D.J. and J.M. Cram Chair of Chemistry in 2014 and currently serves as chair of the Department of Chemistry at Rollins College.

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