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Recent progress in catalytic aromatic trifluoromethylation

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Trifluoromethylated aromatic compounds are the substances of considerable interest in various industrial fields. Owing to the increasing demands for fluoroaromatics, new methodologies for aromatic trifluoromethylation have been required from the viewpoints of cost, simplicity, efficiency, versatility and environmental benignity including a catalytic process. Herein, we present catalytic aromatic trifluoromethylation via β-carbon elimination. Fluoral (trifluoroacetaldehyde) and its derivatives are readily available compounds. Hemiaminals of fluoral are known to be convenient sources of trifluoromethyl anion. We developed a catalytic procedure for aromatic trifluoromethylation by the use of trifluoroacetaldehyde hemiaminal derivatives as a cross-coupling partner. Furthermore, the cross-coupling reactions employing trifluoromethylated carbinols will be disclosed.

Biography

Hideki Amii was graduated from Kyoto University, where he received his Doctorate degree in 1996 under the direction of Professor Yoshihiko Ito. During 1996-2003, he has worked as a Research Associate of the Department of Applied Chemistry, Faculty of Engineering, Okayama University (Prof. Kenji Uneyama's group). He carried out Postdoctoral work in France with Dr. Guy Bertrand at Université Paul Sabatier during 2000-2001. In 2003, he was appointed as an Associate Professor of Kobe University. In 2010, he moved to Gunma University, where he is currently a Professor of Chemistry. His research interest focuses in the synthesis of organofluorine compounds by the use of metal reagents.

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