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Tetrahedron 62 (2006) 7149

Tetrahedron

Preface

Stereoselective and catalyzed halogenation reactions

Halogenation reactions are among the most practical and historically significant processes in organic chemistry—literally thousands of papers over the years have been published on this topic in virtually every chemistry journal. As well, the products of organic halogenations have long been valued as useful synthetic intermediates. Traditionally, the use of diatomic halides has predominated, although their harsh nature and high reactivity have often presented a problem, often resulting in mixtures of desired (and undesired) products. The development of milder, and more sophisticated halogenating reagents that offer significantly greater chemoselectivity and stereocontrol than diatomic halides has been critical to the realization of recent advances in halogenation methodology. This Symposium-in-Print presents a compact, but wide-ranging overview of new developments in the area of stereoselective and catalyzed halogenation reactions that highlight the use of new-generation halogenating agents.

For example, Li et al. report a highly stereoselective approach to iodinated aza Morita–Baylis–Hillman adducts; the Chambers and Sandford labs discuss electrophilic fluorination under the influence of electron-withdrawing groups; and Mikami and Itoh present a radical trifluoromethylation of ketones. Romo et al. have published a personalized account of selective halogenations leading to alkaloid natural products; Tunge's group discusses a new strategy for selenium-catalyzed oxidative halogenation; Togni et al. report new aspects of the enantioselective halogenation of 1,3-dicarbonyl compounds; and Sodeoka's group relates highly enantioselective fluorination reactions catalyzed by chiral palladium complexes.

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doi:10.1016/j.tet.2006.05.035