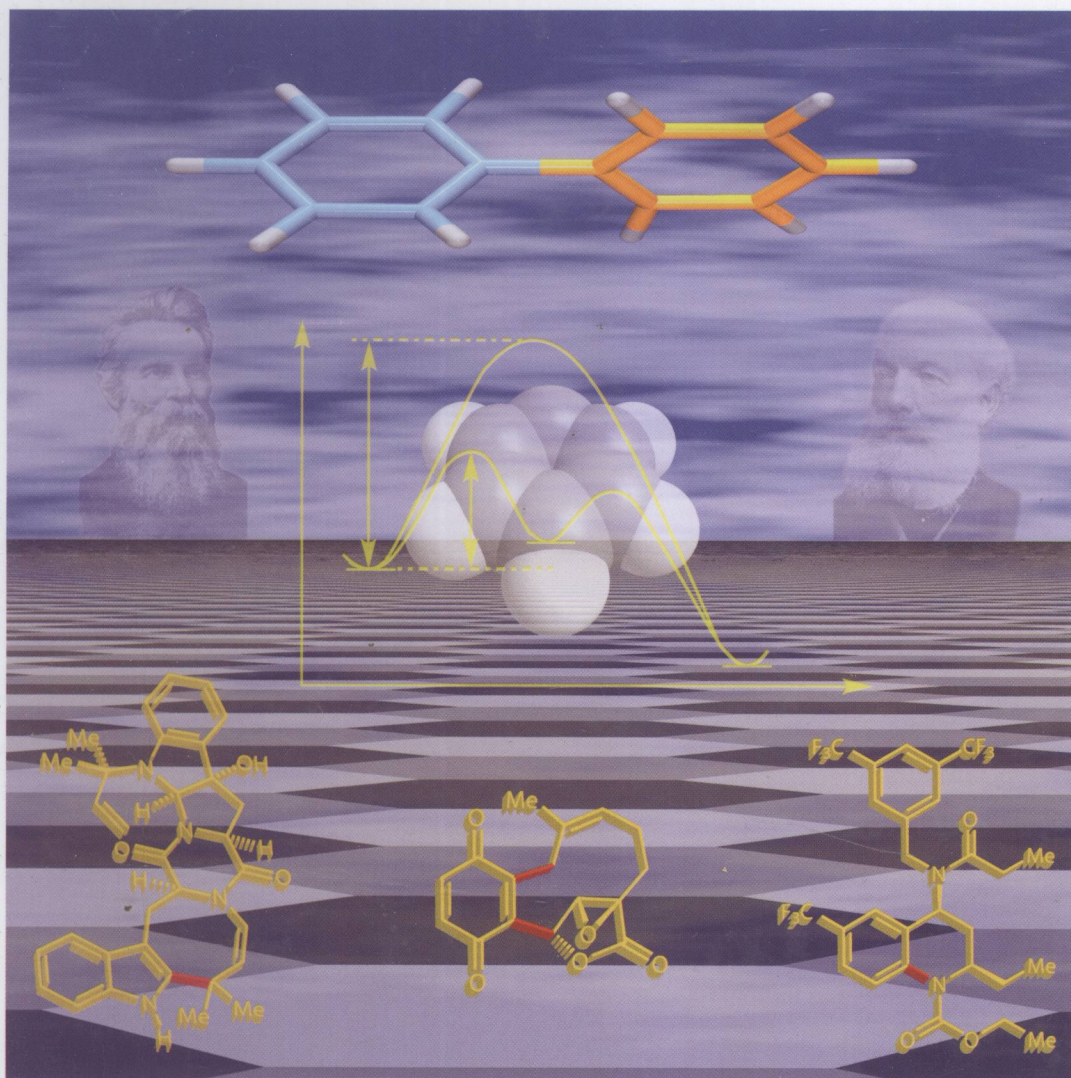


Edited by Lutz Ackermann

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# Modern Arylation Methods



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*Edited by*  
Lutz Ackermann



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## Preface

Arenes and heteroarenes are essential substructures of numerous compounds with activities that are relevant to a variety of important areas of research, ranging *inter alia* from medicinal chemistry and biology to materials sciences. As a result, the selective preparation of these omnipresent moieties is of the utmost relevance to synthetic chemists, both in industry and academia. The introduction of already existing aryl- or heteroaryl-groups—which we recognize today as ‘arylation chemistry’—arguably constitutes the most generally applicable approach to accomplish this task. Thus, the recent growing impact of—and also interest in—arylation chemistry is reflected by the increasing numbers of references that contain the term ‘arylation’ {SciFinder Scholar (October 2008): 41 (1968), 124 (1978), 178 (1988), 188 (1998), 755 (2007)}. Hence, *Modern Arylation Methods* summarizes the diverse aspects of arylation reactions, with a particular focus on recent developments in this area. Within the book, following a brief introduction, industrial practitioners review important transition metal-catalyzed cross-coupling reactions, as well as carbon–heteroatom bond-forming processes. The influence of catalytic strategies—and particularly of those that employ transition metal complexes—on arylation reactions with haloalkanes, alkenes, alkynes and carbonyl compounds as substrates is subsequently described. The next three chapters detail not only the experimental observations but also the mechanistic considerations of ecologically benign C–H bond functionalization reactions. Finally, the book concludes with two chapters on arylations, which involve arynes or radicals as key intermediates, and a summary of photochemically initiated transformations. I hope that this topical selection will be useful to the reader, and that it will serve as a stimulus for further exciting developments in this rapidly evolving research area.

The chapters of this book were written by internationally renowned authorities, to whom I am very thankful for such outstanding contributions. I also wish to express my gratitude to Elke Maase, Rainer Münz, Hans-Jochen Schmitt and the staff of the editorial team of Wiley-VCH for their continuous help during this project. Further, I gratefully acknowledge the assistance of my coworkers during

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Göttingen, December 2008

*Lutz Ackermann*

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