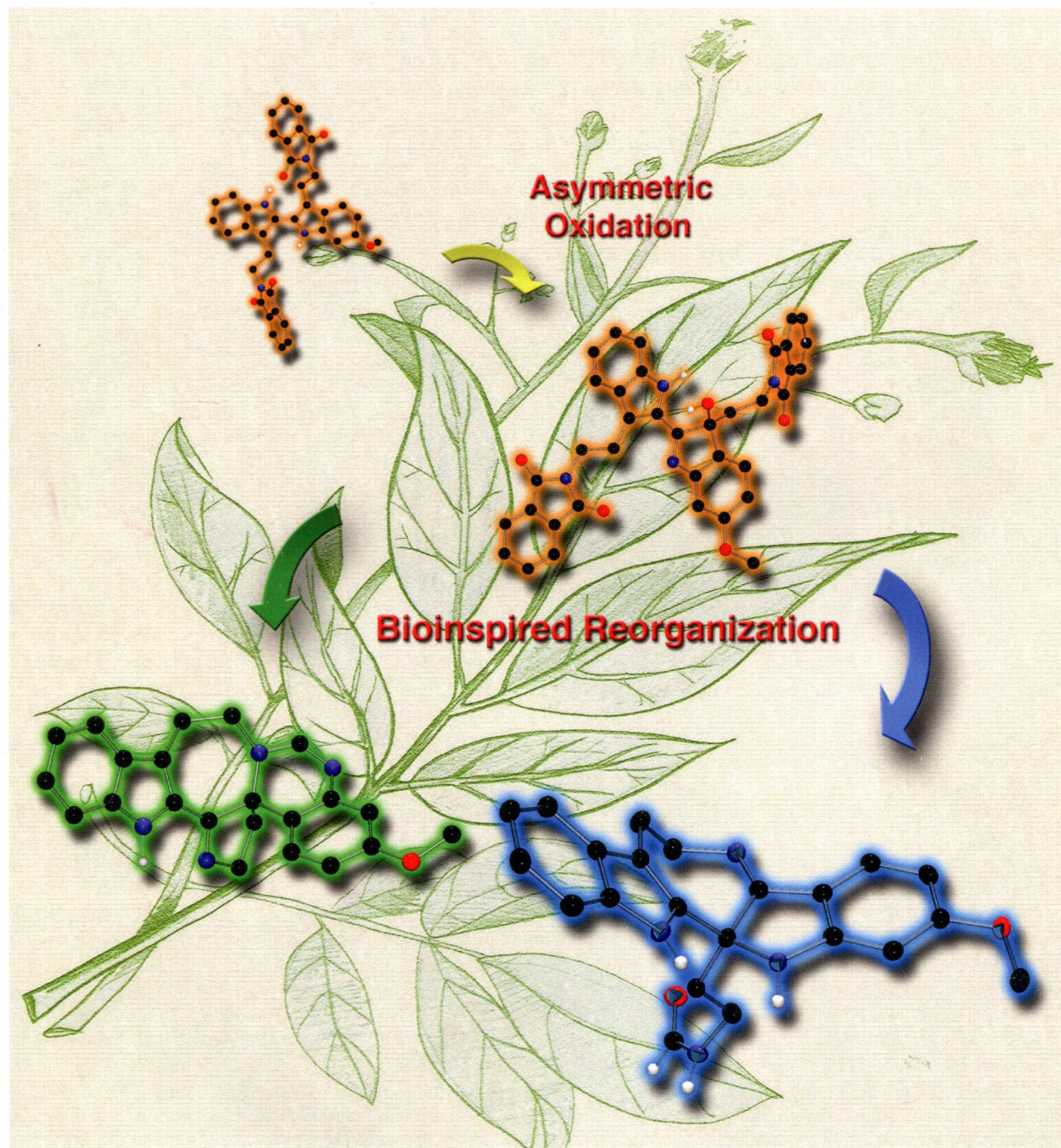


NU  
J30/0

# JOC

*The Journal of Organic Chemistry*

JANUARY 17, 2014 VOLUME 79, NUMBER 2 [pubs.acs.org/joc](http://pubs.acs.org/joc)



ACS Publications  
MOST TRUSTED. MOST CITED. MOST READ.

[www.acs.org](http://www.acs.org)

**ON THE COVER:** A biogenetically inspired approach provides access to all known trigonolimine alkaloids and many derivatives in enantiomerically enriched form. See Movassaghi and co-workers, p 473.

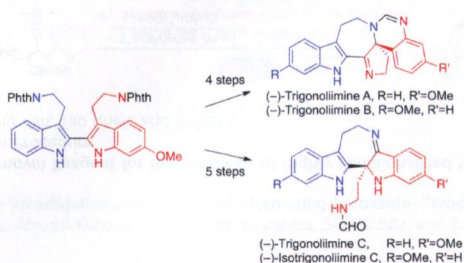
## Featured Articles

473



dx.doi.org/10.1021/jo4020358

**Total Synthesis, Stereochemical Assignment, and Biological Activity of All Known (–)-Trigonolimines**  
Sunkyu Han, Karen C. Morrison, Paul J. Hergenrother, and Mohammad Movassaghi\*

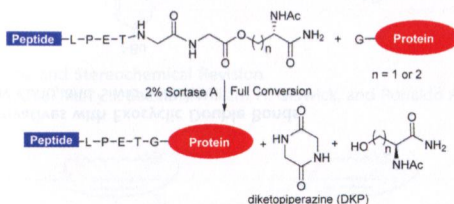


487



dx.doi.org/10.1021/jo4024914

**Irreversible Sortase A-Mediated Ligation Driven by Diketopiperazine Formation**  
Fa Liu,\* Ethan Y. Luo, David B. Flora, and Adam R. Mezo

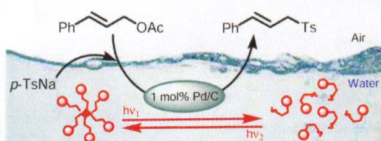


493

5

dx.doi.org/10.1021/jo401737t

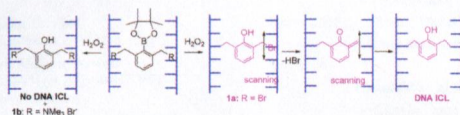
## Micellar Catalysis Using a Photochromic Surfactant: Application to the Pd-Catalyzed Tsuji–Trost Reaction in Water

Muriel Billamboz, Floriane Mangin, Nicolas Drillaud, Carole Chevrin-Villette, Estelle Banaszak-Léonard, and Christophe Len\*<sup>‡</sup>

501

5

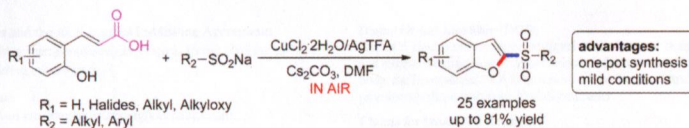
dx.doi.org/10.1021/jo401901x

The Leaving Group Strongly Affects H<sub>2</sub>O<sub>2</sub>-Induced DNA Cross-Linking by ArylboronatesSheng Cao, Yibin Wang, and Xiaohua Peng\*<sup>‡</sup>

509

5

dx.doi.org/10.1021/jo4024478

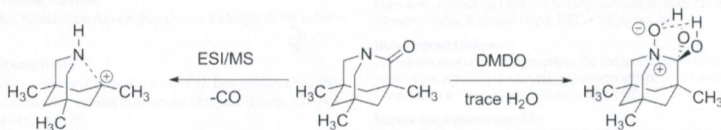
Copper/Silver-Mediated Cascade Reactions for the Construction of 2-Sulfonylbenzo[b]furans from *trans*-2-Hydroxycinnamic Acids and Sodium SulfinatesHong-Shuang Li and Gang Liu\*<sup>‡</sup>

517

5

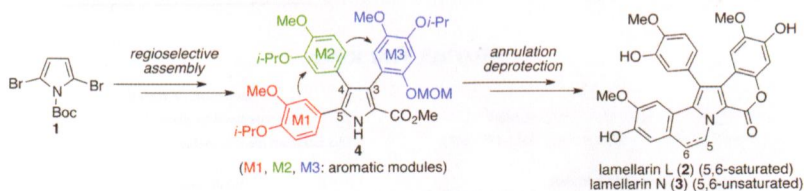
dx.doi.org/10.1021/jo402041u

## Electrospray Ionization (ESI) Fragmentations and Dimethyldioxirane Reactivities of Three Diverse Lactams Having Full, Half, and Zero Resonance Energies

Kathleen M. Morgan,\* David J. Ashline, Jessica P. Morgan, and Arthur Greenberg\*<sup>‡</sup>

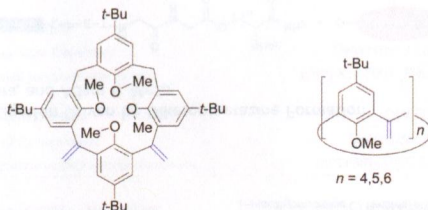
### Modular Synthesis of Lamellarins via Regioselective Assembly of 3,4,5-Differentially Arylated Pyrrole-2-carboxylates

Masashi Komatsubara, Teppei Umeki, Tsutomu Fukuda, and Masatomo Iwao\*



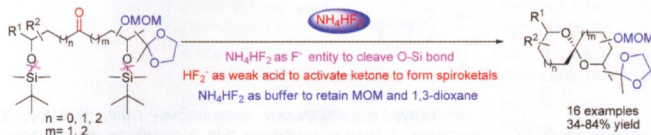
### Calixradialenes: Calixarene Derivatives with Exocyclic Double Bonds

David Poms, Norbert Itzhak, Lev Kuno, and Silvio E. Biali\*



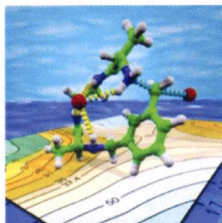
### $\text{NH}_4\text{HF}_2$ as a Selective TBS-Removal Reagent for the Synthesis of Highly Functionalized Spiroketal via Tandem Deprotection/Spiroketalization Procedure

Hui Lu, Fu-Min Zhang,\* Jin-Long Pan, Tao Chen, and Yi-Fan Li



## The Role of the Amino Acid-Derived Side Chain in the Preorganization of $C_2$ -Symmetric Pseudopeptides: Effect on $S_N2$ Macrocyclization Reactions

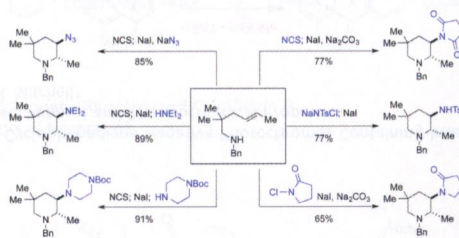
Vicente Marti-Centelles, M. Isabel Burguete, Carlos Cativiela,\* and Santiago V. Luis\*



Minimalistic pseudopeptides

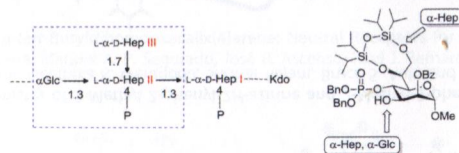
## One-Pot Synthesis of 3-Azido- and 3-Aminopiperidines by Intramolecular Cyclization of Unsaturated Amines

Gerardo X. Ortiz Jr., Bora Kang, and Qiu Wang\*

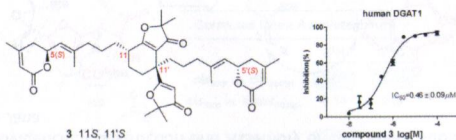


## Convergent Synthesis of 4-O-Phosphorylated L-glycero-D-manno-Heptosyl Lipopolysaccharide Core Oligosaccharides Based on Regioselective Cleavage of a 6,7-O-Tetraisopropylidene-1,3-diyl Protecting Group

Christian Stanetty, Martin Walter, and Paul Kosma\*

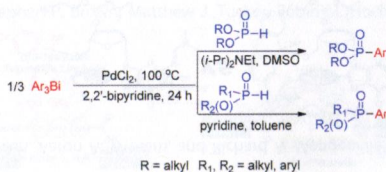


**Aphadilactones A–D, Four Diterpenoid Dimers with DGAT Inhibitory and Antimalarial Activities from a Meliaceae Plant**  
 Jia Liu, Xiu-Feng He, Gai-Hong Wang, Emilio F. Merino, Sheng-Ping Yang, Rong-Xiu Zhu, Li-She Gan, Hua Zhang, Maria B. Cassera, He-Yao Wang, David G. I. Kingston, and Jian-Min Yue\*



**Experimental and Theoretical Study on Palladium-Catalyzed C–P Bond Formation via Direct Coupling of Triarylbi-muths with P(O)–H Compounds**

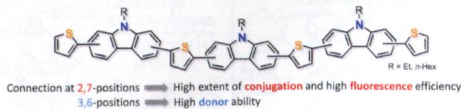
Tao Wang, Shuai Sang, Liu Liu, Hongwei Qiao, Yuxing Gao,\* and Yufen Zhao



**Systematic Structure–Property Investigations on a Series of Alternating Carbazole–Thiophene Oligomers**

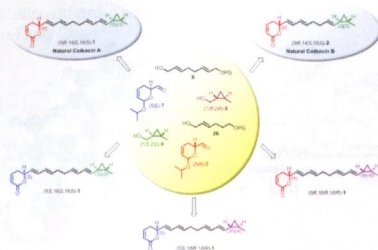
Shin-ichiro Kato, Satoru Shimizu, Atsushi Kobayashi, Toshitada Yoshihara, Seiji Tobita, and Yosuke Nakamura\*

**Alternating Carbazole–Thiophene Oligomers**



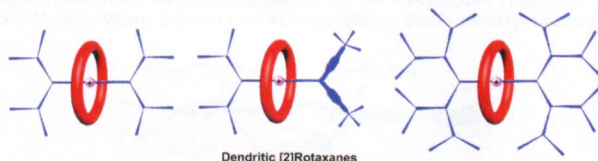
**Coibacins A and B: Total Synthesis and Stereochemical Revision**

Vânia M. T. Carneiro, Carolina M. Avila, Marcy J. Balunas, William H. Gerwick, and Ronaldo A. Pilli\*



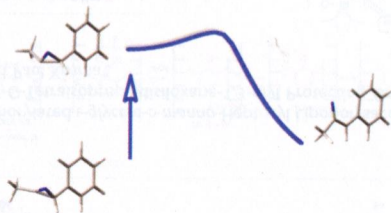
## Dendritic [2]Rotaxanes: Synthesis, Characterization, and Properties

Guoxing Liu, Ziyong Li, Di Wu, Wen Xue, Tingting Li, Sheng Hua Liu,\* and Jun Yin\*



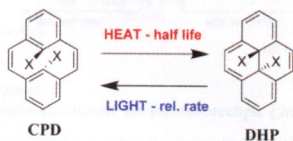
## Comparison of the Photochemistry of 3-Methyl-2-phenyl-2H-azirine and 2-Methyl-3-phenyl-2H-azirine

Xiaoming Zhang, Sujan K. Sarkar, Geethika K. Weragoda, Sridhar Rajam, Bruce S. Ault, and Anna D. Gudmundsdottir\*



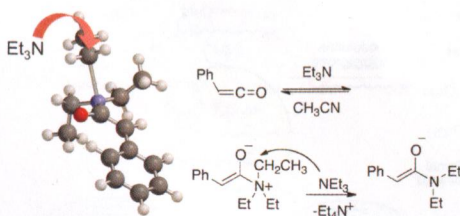
## Syntheses of Dihydropyrene–Cyclophanediene Negative Photochromes Containing Internal Alkenyl and Alkynyl Groups and Comparison of Their Photochemical and Thermochemical Properties

Khurshid Ayub and Reginald H. Mitchell\*

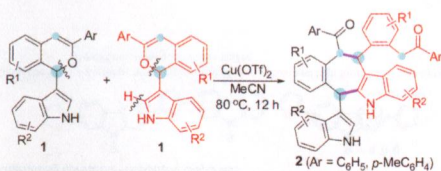
X = -CH=CH<sub>2</sub>  $\tau_{1/2}(20^\circ\text{C}) = 56\text{days}$ ; rel. rate = 1X = -CH=CHMe  $\tau_{1/2}(20^\circ\text{C}) = 10\text{years}$ ; rel. rate = 200

## Ketene Reactions with Tertiary Amines

Annette D. Allen, John Andraos, Thomas T. Tidwell,\* and Sinisa Vukovic

Synthesis of Benzocyclohepta[b]indoles by Lewis Acid Catalyzed Annulation of Two 3-(1*H*-Isochromen-1-yl)-1*H*-indoles

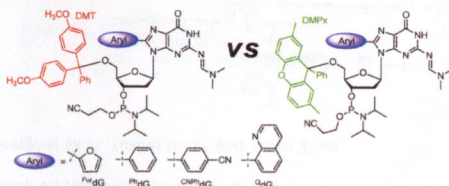
Ye-Xiang Xie, Ri-Yuan Tang,\* Ren-Jie Song, Jian-Nan Xiang, and Jin-Heng Li\*



- New annulation strategy for constructing the cyclohepta[b]indole core, a seven-membered carbocyclic ring system
- 13 examples, up to 75% yield

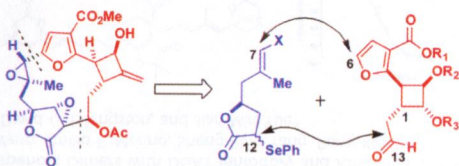
Utility of 5'-*O*-2,7-Dimethylpixyl for Solid-Phase Synthesis of Oligonucleotides Containing Acid-Sensitive 8-Aryl-Guanine Adducts

Michael Sproviero, Katherine M. Rankin, Aaron A. Witham, and Richard A. Manderville\*



## Studies of the Synthesis of Providencin: Construction and Assembly of Two Major Subunits

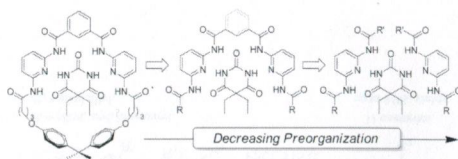
James D. White\* and Somnath Jana





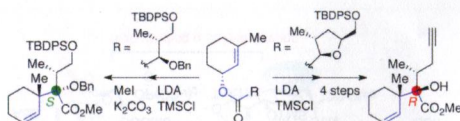
### Understanding the Effects of Preorganization, Rigidity, and Steric Interactions in Synthetic Barbiturate Receptors

Jacqueline M. McGrath and Michael D. Pluth\*



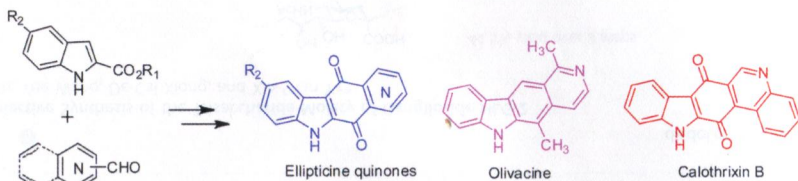
### Synthesis of Chiral Building Blocks for Oxygenated Terpenoids through a Simultaneous and Stereocontrolled Construction of Contiguous Quaternary Stereocenters by an Ireland–Claisen Rearrangement

Yoshihiro Akahori, Hiroyuki Yamakoshi, Yuki Sawayama, Shunichi Hashimoto, and Seichi Nakamura\*



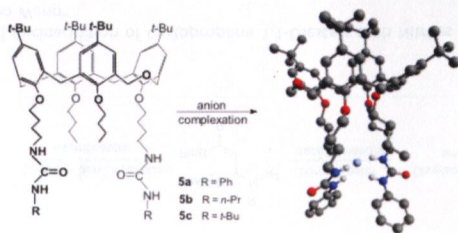
### Total Synthesis of Ellipticine Quinones, Olivacine, and Calothrixin B

Nagarajan Ramkumar and Rajagopal Nagarajan\*



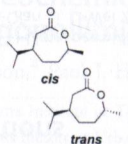
### Bidentate Urea Derivatives of *p*-*tert*-Butyldihomoxalix[4]arene: Neutral Receptors for Anion Complexation

Paula M. Marcos,\* Filipa A. Teixeira, Manuel A. P. Segurado, José R. Ascenso, Raul J. Bernardino, Sylvia Michel, and Véronique Hubscher-Bruder



## Analysis of Seven-Membered Lactones by Computational NMR Methods: Proton NMR Chemical Shift Data are More Discriminating than Carbon

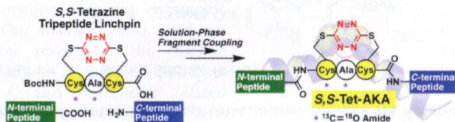
Daniel J. Marell, Susanna J. Emond, Aman Kulshrestha, and Thomas R. Hoye\*



	Corrected Mean Absolute Errors	
	$\delta^1\text{H}$	$\delta^{13}\text{C}$
<i>cis</i> <sub>exp</sub> vs. <i>cis</i> <sub>comp</sub>	0.05	1.1
<i>cis</i> <sub>exp</sub> vs. <i>trans</i> <sub>comp</sub>	0.14	2.8
<i>trans</i> <sub>exp</sub> vs. <i>trans</i> <sub>comp</sub>	0.05	1.3
<i>trans</i> <sub>exp</sub> vs. <i>cis</i> <sub>comp</sub>	0.19	1.2

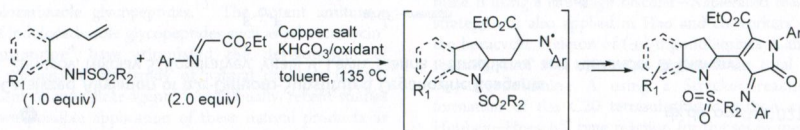
## The Design and Synthesis of Alanine-Rich $\alpha$ -Helical Peptides Constrained by an *S,S*-Tetrazine Photochemical Trigger: A Fragment Union Approach

Joel R. Courter, Mohannad Abdo, Stephen P. Brown, Matthew J. Tucker, Robin M. Hochstrasser, and Amos B. Smith III\*



## Cu(OAc)<sub>2</sub>-Promoted Cascade Carboamination/Oxidative Cyclization of *C*-Acylimines with Alkenes

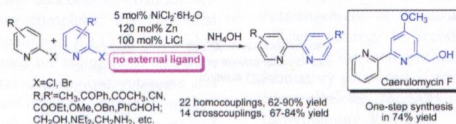
Ling Dang, Libo Liang, Cheng Qian, Meiqin Fu, Tongmei Ma,\* Dingguo Xu,\* Huanfeng Jiang, and Wei Zeng\*



## Notes

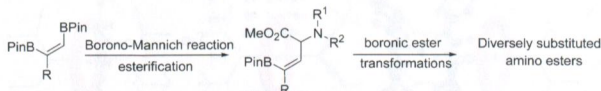
## Reductive Couplings of 2-Halopyridines without External Ligand: Phosphine-Free Nickel-Catalyzed Synthesis of Symmetrical and Unsymmetrical 2,2'-Bipyridines

Lian-Yan Liao, Xing-Rui Kong, and Xin-Fang Duan\*



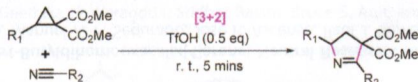
### Regio- and Stereocontrolled Access to $\gamma$ -Boronated Unsaturated Amino Esters and Derivatives from (Z)-Alkenyl 1,2-Bis(boronates)

Tailor Sridhar, Fabienne Berrée, Gangavaram V. M. Sharma,\* and Bertrand Carboni\*



### TfOH-Catalyzed Formal [3 + 2] Cycloaddition of Cyclopropane 1,1-Diesters with Nitriles

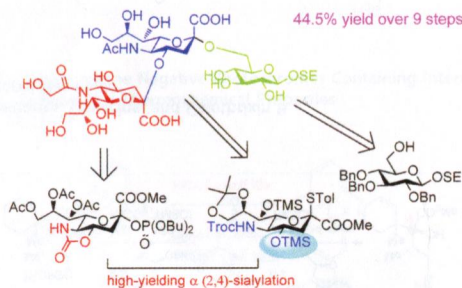
Bo Cui, Jun Ren, and Zhongwen Wang\*



- Efficient (excellent yields, run within 5 mins, r.t.)
- 20 examples (with broad scope of substituents)

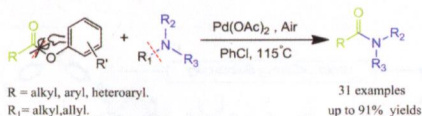
### Stereoselective Synthesis of the Trisaccharide Moiety of Ganglioside HLG-2

Fei-Fei Xu, Yue Wang, De-Cai Xiong, and Xin-Shan Ye\*

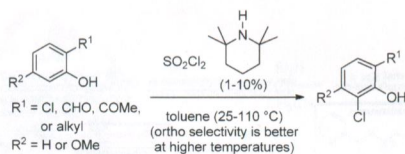


### Aminolysis of Aryl Ester Using Tertiary Amine as Amino Donor via C–O and C–N Bond Activations

Yong-Sheng Bao,\* Bao Zhaorigetu, Bao Agula, Menghe Baiyin, and Meilin Jia

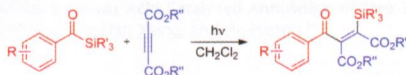


**2,2,6,6-Tetramethylpiperidine-Catalyzed, Ortho-selective Chlorination of Phenols by Sulfuryl Chloride**  
Noam I. Saper and Barry B. Snider\*



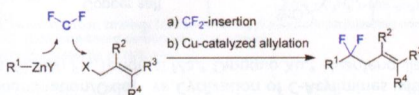
**Photochemical Intermolecular Silylacylations of Electron-Deficient Internal Alkynes**

Peter Becker, Daniel L. Prieppenow, Hui-Jun Zhang, Ramona Pirwerdjan, and Carsten Bolm\*



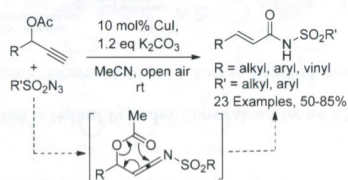
**Copper-Catalyzed Allylation of  $\alpha,\alpha$ -Difluoro-Substituted Organozinc Reagents**

Artem A. Zemtsov, Nikolay S. Kondratyev, Vitalij V. Levin, Marina I. Struchkova, and Alexander D. Dilman\*



**Cu-Catalyzed Conversion of Propargyl Acetates to  $E$ - $\alpha,\beta$ -Unsaturated Amides via Ketenimine Formation with Sulfonyl Azides**

Yalla Kiran Kumar, Gadi Ranjith Kumar, and Maddi Sridhar Reddy\*



## Additions and Corrections

**Enantioselective Total Synthesis of (–)-Limaspermidine and Formal Synthesis of (–)-1-Acetylaspidobidine**  
Shao-Xiong Zhang, Xiao-Lei Shen, Ze-Qian Li, Li-Wei Zou, Feng-Qun Wang, Hong-Bin Zhang, and Zhi-Hui Shao\*