

New Reactions and Catalysts: Development and Applications

Tetrahedron Prize for Creativity in Organic Chemistry 2006

H. Yamamoto

Guest editor: Stephen F. Martin

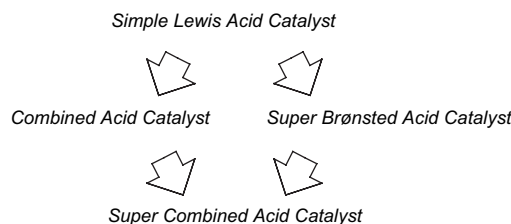
Chemistry and Biochemistry Department, The University of Texas, 1 University Station A5300, Austin, TX 78712-0165, USA

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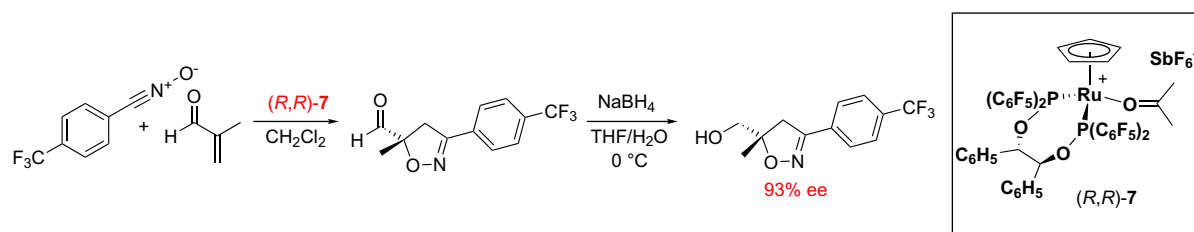
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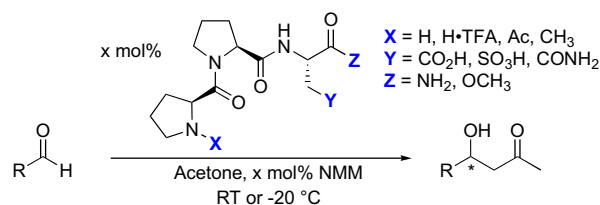
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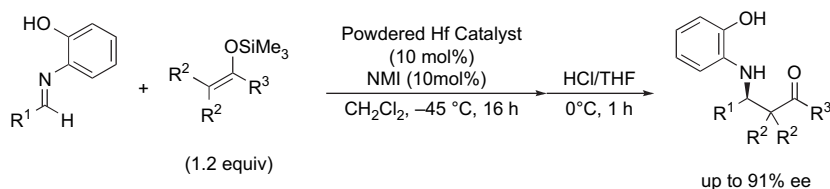
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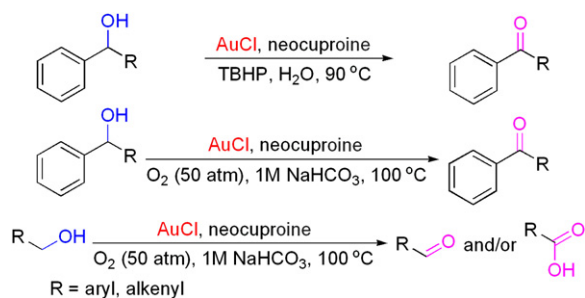
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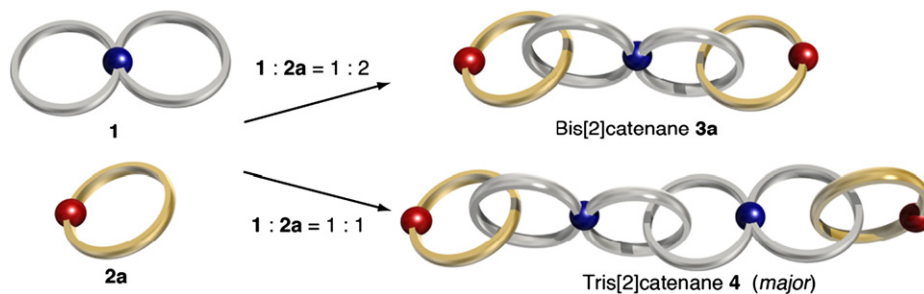
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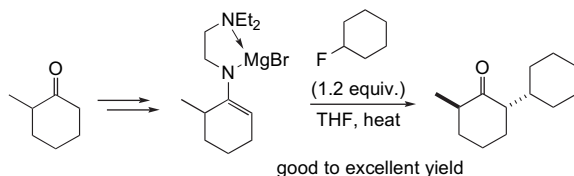
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Ken-ichi Yamashita, Akiko Hori and Makoto Fujita*



Regioselective α -alkylation of ketones with alkyl chlorides and fluorides via highly nucleophilic magnesium enamides

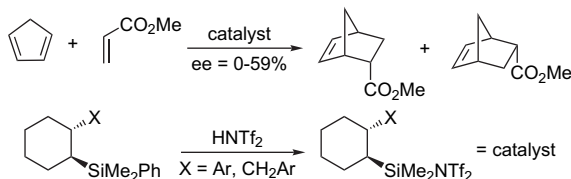
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Takuji Hatakeyama, Shingo Ito, Hiroaki Yamane, Masaharu Nakamura* and Eiichi Nakamura*

**The search for tolerant Lewis acid catalysts. Part 2: Enantiopure cycloalkyldialkylsilyl triflimide catalysts**

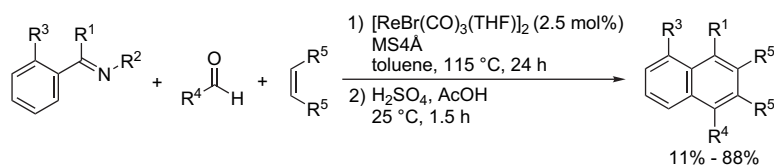
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Zilong Tang, Benoit Mathieu, Bernard Tinant, Georges Dive and Léon Ghosez*

**Rhenium-catalyzed synthesis of naphthalene derivatives via insertion of aldehydes into a C–H bond**

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Yoichiro Kuninobu,* Yuta Nishina and Kazuhiko Takai*



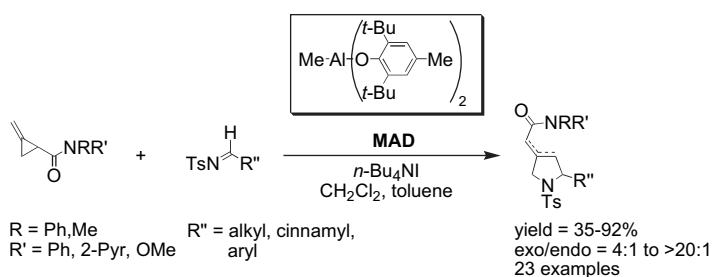
A rhenium complex, $[\text{ReBr}(\text{CO})_3(\text{THF})_2]$, catalyzed reactions between aromatic ketimines, aldehydes, and dienophiles, with successive dehydration, resulting in naphthalene derivatives.

Use of a sterically demanding Lewis acid to direct ring expansion of monoactivated methylenecyclopropanes

pp 8469–8477

Catherine Taillier, Yann Bethuel and Mark Lautens*

A novel synthetic route for the preparation of functionalized alkylidene pyrrolidines via a MAD/ $n\text{-Bu}_4\text{NI}$ -mediated ring expansion of monoactivated MCP was developed.



R = Ph, Me
R' = Ph, 2-Pyr, OMe

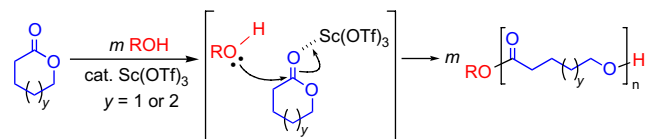
R'' = alkyl, cinnamyl,
aryl



Ring-opening polymerization of lactones by rare-earth metal triflates and by their reusable system in ionic liquids

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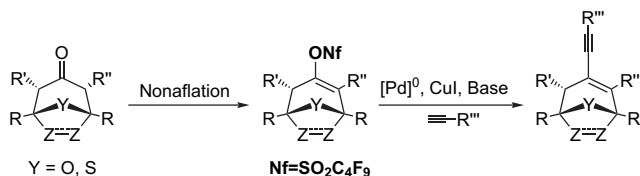
Nobuyoshi Nomura,* Atsuko Taira, Ayumi Nakase, Takashi Tomioka and Masahiko Okada



Mild and efficient Sonogashira couplings of 8-oxa- and 8-thiabicyclo[3.2.1]octanone derived alkenyl nonaflates

pp 8485–8491

Jens Högermeier and Hans-Ulrich Reissig*



Development of a convoluted polymeric nanopalladium catalyst: α -alkylation of ketones and ring-opening alkylation of cyclic 1,3-diketones with primary alcohols

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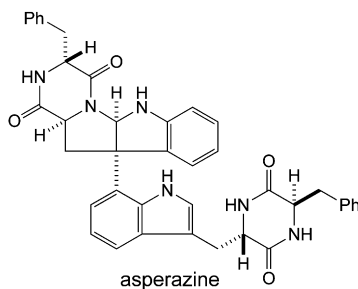
Yoichi M. A. Yamada and Yasuhiro Uozumi*



Total synthesis of (+)-asperazine

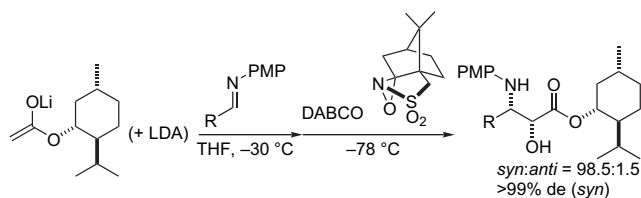
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Steven P. Govek and Larry E. Overman*



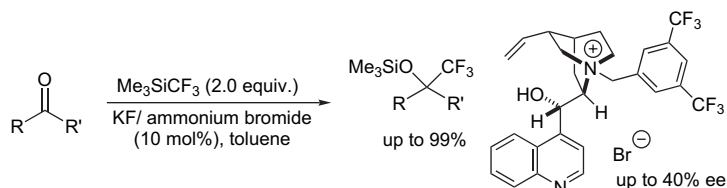
Asymmetric synthesis of 3-amino-2-hydroxyalkanoates by Mannich reaction of menthyl acetate with imines and subsequent oxidation

Seiji Hata and Kiyoshi Tomioka*



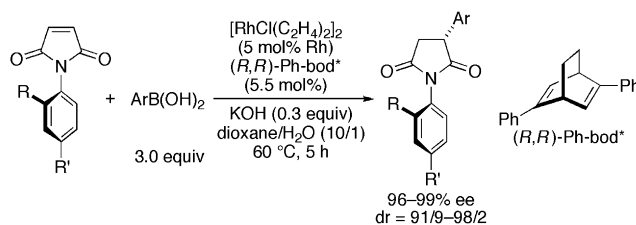
Ammonium bromides/KF catalyzed trifluoromethylation of carbonyl compounds with (trifluoromethyl)trimethylsilane and its application in the enantioselective trifluoromethylation reaction

Satoshi Mizuta, Norio Shibata,* Motoki Hibino, Shinichi Nagano, Shuichi Nakamura and Takeshi Toru*



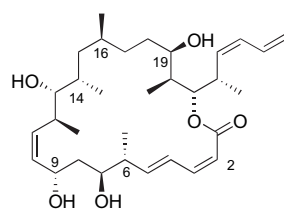
Asymmetric construction of chiral C–N axes through rhodium-catalyzed 1,4-addition

Wei-Liang Duan, Yusuke Imazaki, Ryo Shintani* and Tamio Hayashi*



Synthesis and biological evaluation of (–)-dictyostatin and stereoisomers

Youseung Shin, Jean-Hugues Fournier, Arndt Brückner, Charitha Madiraju, Raghavan Balachandran, Brianne S. Raccor, Michael C. Edler, Ernest Hamel, Rachel P. Sikorski, Andreas Vogt, Billy W. Day* and Dennis P. Curran*



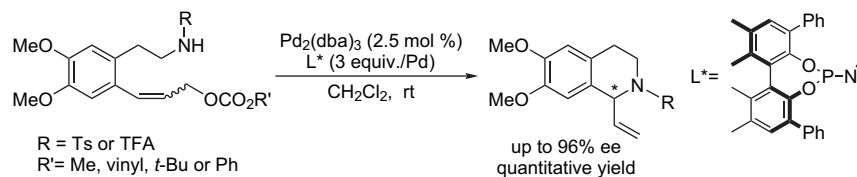
dictyostatin, and isomers at C2/3, C6, C9, C14, C16 and C19



Asymmetric synthesis of 1-vinyltetrahydroisoquinoline through Pd-catalyzed intramolecular allylic amination

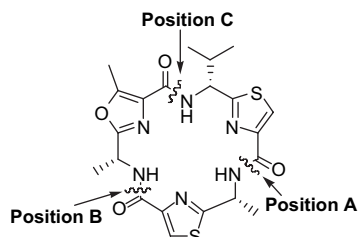
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Ce Shi and Iwao Ojima*


Investigation of macrocyclization sites for the synthesis of dendroamide A—an approach from a conformational search

pp 8571–8575

Takatoshi Matsumoto,* Eiichi Morishita and Takayuki Shioiri

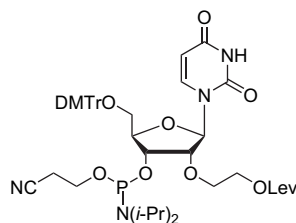


From a detailed conformational analysis, three precursors of dendroamide A have the distance between the N- and C-terminal in the range of 3.43–3.93 Å, which suggests the possibility of macrocyclization.


A modified uridine for the synthesis of branched DNA

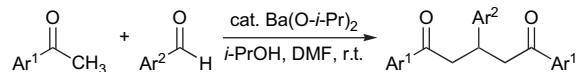
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Madhavaiah Chandra, Sascha Keller, Yan Luo and Andreas Marx*


One-pot synthesis of 1,5-diketones catalyzed by barium isopropoxide

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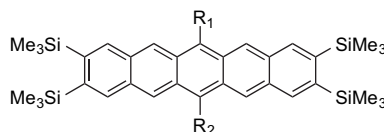
Akira Yanagisawa,* Hiroshi Takahashi and Takayoshi Arai



Synthesis, characterization, and reactions of 6,13-disubstituted 2,3,9,10-tetrakis(trimethylsilyl)pentacene derivatives

pp 8586–8597

Yu-Man Wang, Nan-Yan Fu, Siu-Hin Chan, Hung-Kay Lee and Henry N. C. Wong*

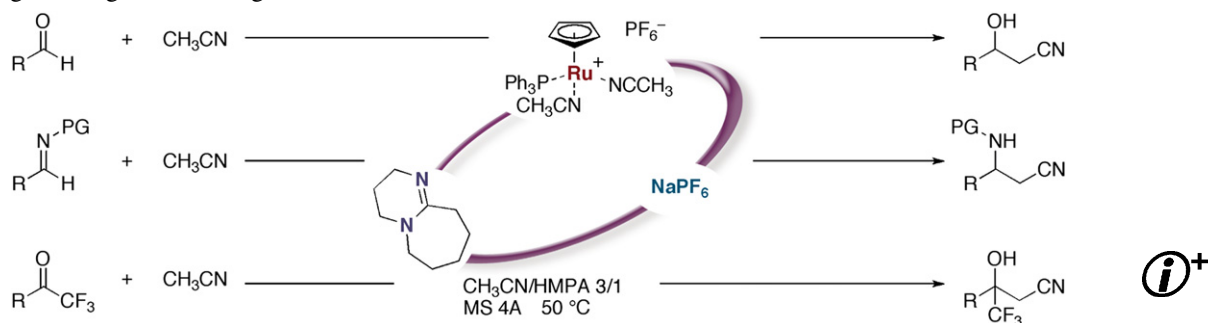


A series of 6,13-disubstituted 2,3,9,10-tetrakis(trimethylsilyl)pentacene derivatives were synthesized and characterized. Their reactions, structures, and physical properties were also studied.

Catalytic nucleophilic activation of acetonitrile via a cooperative catalysis of cationic Ru complex, DBU, and NaPF₆

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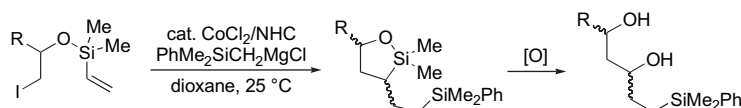
Naoya Kumagai,* Shigeki Matsunaga and Masakatsu Shibasaki*



Cobalt-catalyzed sequential cyclization/cross-coupling reactions of 6-halo-1-hexene derivatives with Grignard reagents and their application to the synthesis of 1,3-diols

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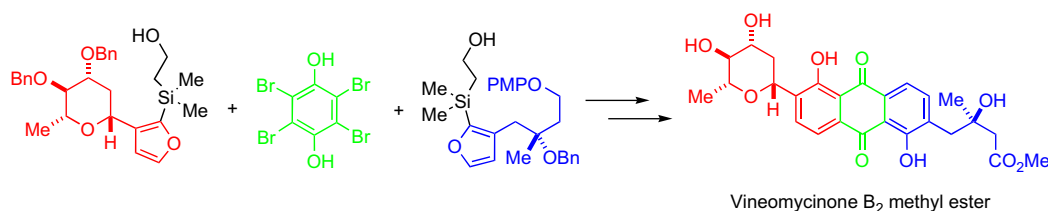
Hidenori Someya, Hirohisa Ohmiya, Hideki Yorimitsu* and Koichiro Oshima*



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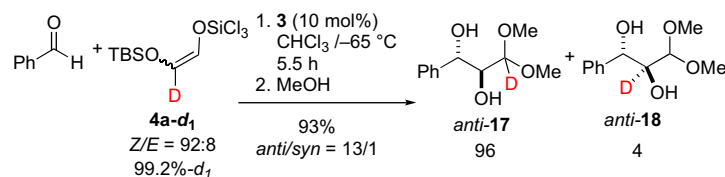
Steven M. Sparks, Chi-Li Chen and Stephen F. Martin*



Unexpected ambidoselectivity in crossed-aldol reactions of α -oxy aldehyde trichlorosilyl enolates

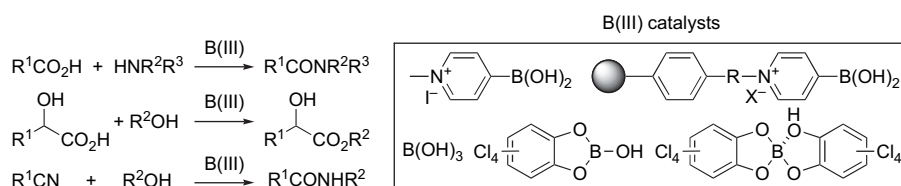
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Scott E. Denmark* and Sunil K. Ghosh

**New boron(III)-catalyzed amide and ester condensation reactions**

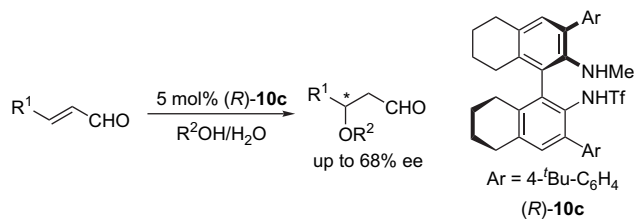
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Toshikatsu Maki, Kazuaki Ishihara* and Hisashi Yamamoto*

**Asymmetric organocatalytic oxy-Michael addition of alcohols to α,β -unsaturated aldehydes**

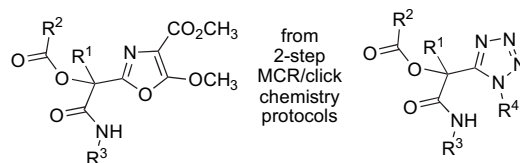
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Taichi Kano, Youhei Tanaka and Keiji Maruoka*

**Tandem multicomponent/click reactions: synthesis of functionalized oxazoles and tetrazoles from acyl cyanides**

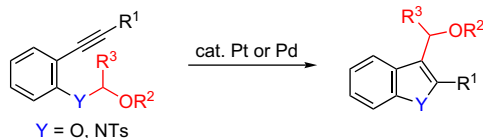
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Isabelle F. Cléménçon and Bruce Ganem*



Synthesis of 2,3-disubstituted benzofurans and indoles by π -Lewis acidic transition metal-catalyzed cyclization of *ortho*-alkynylphenyl *O,O*- and *N,O*-acetals pp 8670–8676

Itaru Nakamura,* Yuya Mizushima, Uichiro Yamagishi and Yoshinori Yamamoto



*Corresponding author

Supplementary data available via ScienceDirect

COVER

Two of our new catalysts in front of sensu (fan) of shinte-isshou written by Mr. Kozo Masuda.

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