

March 27, 2013
Volume 135, Issue 12
Pages 4575-4900
Order Print Issue

Spotlights

Spotlights on Recent *JACS* Publications

pp 4575–4575

Publication Date (Web): March 27, 2013 (Spotlights)

DOI: 10.1021/ja402799z

Communications

Highly Enantioselective Rhodium-Catalyzed [2+2+2] Cycloaddition of Diynes to Sulfonimines

Muriel Amatore, David Lebœuf, Max Malacria, Vincent Gandon, and Corinne Aubert
pp 4576–4579

Publication Date (Web): March 4, 2013 (Communication)

DOI: 10.1021/ja309301n

 Section:

Heterocyclic Compounds (One Hetero Atom)

Caged Mono- and Divalent Ligands for Light-Assisted Disruption of PDZ Domain-Mediated Interactions

Matthieu Sainlos, Wendy S. Iskenderian-Epps, Nelson B. Olivier, Daniel Choquet, and Barbara Imperiali
pp 4580–4583

pp 4580–4583

Publication Date (Web): March 8, 2013 (Communication)

DOI: 10.1021/ja309870q

 Section:

Biochemical Methods


Ligand Conjugation of Chemically Exfoliated MoS₂

Stanley S. Chou, Mrinmoy De, Jaemyung Kim, Segi Byun, Conner Dykstra, Jin Yu, Jiaying Huang, and Vinayak P. Dravid
pp 4584–4587

pp 4584–4587

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja310929s

Section:
Surface Chemistry and Colloids

The Isolation of [Pd{OC(O)H}(H)(NHC)(PR₃)] (NHC = N-Heterocyclic Carbene) and Its Role in Alkene and Alkyne Reductions Using Formic Acid

Julie Broggi, Václav Jurčík, Olivier Songis, Albert Poater, Luigi Cavallo, Alexandra M. Z. Slawin, and Catherine S. J. Cazin

pp 4588–4591

Publication Date (Web): January 14, 2013 (Communication)

DOI: 10.1021/ja311087c

Section:
Organometallic and Organometalloidal Compounds


Direct Measurement of Electron Transfer through a Hydrogen Bond between Single Molecules

Tomoaki Nishino, Nobuhiko Hayashi, and Phuc T. Bui

pp 4592–4595

Publication Date (Web): March 14, 2013 (Communication)

DOI: 10.1021/ja311463b

Section:
Electric Phenomena

Artificial Z-Scheme Constructed with a Supramolecular Metal Complex and Semiconductor for the Photocatalytic Reduction of CO₂

Keita Sekizawa, Kazuhiko Maeda, Kazunari Domen, Kazuhide Koike, and Osamu Ishitani

pp 4596–4599

Publication Date (Web): March 7, 2013 (Communication)

DOI: 10.1021/ja311541a

Section:
Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes


The Critical Role of Phosphate in Vanadium Phosphate Oxide for the Catalytic Activation and Functionalization of *n*-Butane to Maleic Anhydride

Mu-Jeng Cheng and William A. Goddard, III

pp 4600–4603

Publication Date (Web): February 24, 2013 (Communication)

DOI: 10.1021/ja3115746

Section:
Physical Organic Chemistry

Lab in a Tube: Ultrasensitive Detection of MicroRNAs at the Single-Cell Level and in Breast Cancer Patients Using Quadratic Isothermal Amplification

Ruixue Duan, Xiaolei Zuo, Shutao Wang, Xiyun Quan, Dongliang Chen, Zhifei Chen, Lei Jiang, Chunhai Fan, and Fan Xia

pp 4604–4607

Publication Date (Web): February 27, 2013 (Communication)

DOI: 10.1021/ja311313b

 Section:

Biochemical Genetics

Impact of Molecular Clustering inside Nanopores on Desorption Processes

Manuel Tsotsalas, Pavel Hejcik, Kenji Sumida, Ziya Kalay, Shuhei Furukawa, and Susumu Kitagawa

pp 4608–4611

Publication Date (Web): March 7, 2013 (Communication)

DOI: 10.1021/ja312115x

 Section:

Surface Chemistry and Colloids

Postsynthesis Modification of a Porous Coordination Polymer by LiCl To Enhance H⁺ Transport

Satoshi Horike, Yusuke Kamitsubo, Munehiro Inukai, Tomohiro Fukushima, Daiki Umeyama, Tomoya Itakura, and Susumu Kitagawa

pp 4612–4615

Publication Date (Web): March 14, 2013 (Communication)

DOI: 10.1021/ja3122872

 Section:

Inorganic Chemicals and Reactions

The Fumagillin Biosynthetic Gene Cluster in *Aspergillus fumigatus* Encodes a Cryptic Terpene Cyclase Involved in the Formation of β -*trans*-Bergamotene

Hsiao-Ching Lin, Yit-Heng Chooi, Sourabh Dhingra, Wei Xu, Ana M. Calvo, and Yi Tang

pp 4616–4619

Publication Date (Web): March 14, 2013 (Communication)

DOI: 10.1021/ja312503y

 Section:

Microbial, Algal, and Fungal Biochemistry

Redox-Activated Manganese-Based MR Contrast Agent

Galen S. Loving, Shreya Mukherjee, and Peter Caravan

pp 4620–4623

Publication Date (Web): March 19, 2013 (Communication)

DOI: 10.1021/ja312610j

 Section:

Biochemical Methods

Role of Sodium Doping in Lead Chalcogenide Thermoelectrics

Jiaqing He, Li-Dong Zhao, Jin-Cheng Zheng, Jeff W. Doak, Haijun Wu, Hui-Qiong Wang, Yeseul Lee, Chris Wolverton, Mercouri G. Kanatzidis, and Vinayak P. Dravid

pp 4624–4627

Publication Date (Web): February 27, 2013 (Communication)

DOI: 10.1021/ja312562d

 Section:

Electric Phenomena

Re/Mg Bimetallic Tandem Catalysis for [4+2] Annulation of Benzamides and Alkynes via C-H/N-H Functionalization

Qiuzheng Tang, Dexin Xia, Xiqing Jin, Qing Zhang, Xiao-Qiang Sun, and Congyang Wang

pp 4628–4631

Publication Date (Web): March 7, 2013 (Communication)

DOI: 10.1021/ja400020e

 Section:

Heterocyclic Compounds (One Hetero Atom)

Forming Cross-Linked Peptidoglycan from Synthetic Gram-Negative Lipid II

Matthew D. Lebar, Tania J. Lupoli, Hirokazu Tsukamoto, Janine M. May, Suzanne Walker, and Daniel Kahne

pp 4632–4635

Publication Date (Web): March 12, 2013 (Communication)

DOI: 10.1021/ja312510m

 Section:

Amino Acids, Peptides, and Proteins

Detection of Living Anionic Species in Polymerization Reactions Using Hyperpolarized NMR

Youngbok Lee, Gyu Seong Heo, Haifeng Zeng, Karen L. Wooley, and Christian Hilty

pp 4636–4639

Publication Date (Web): March 5, 2013 (Communication)

DOI: 10.1021/ja4001008

 Section:

Silver-Catalyzed Radical Aminofluorination of Unactivated Alkenes in Aqueous Media

Zhaodong Li, Liyan Song, and Chaozhong Li

pp 4640–4643

Publication Date (Web): March 18, 2013 (Communication)

DOI: 10.1021/ja400124t

Section:

Heterocyclic Compounds (One Hetero Atom)

Imaging of Nonuniform Motion of Single DNA Molecules Reveals the Kinetics of Varying-Field Isotachophoresis

Shengquan Liu, Bailin Zhao, Dapeng Zhang, Cuiping Li, and Hailin Wang

pp 4644–4647

Publication Date (Web): March 12, 2013 (Communication)

DOI: 10.1021/ja400126b

Section:

Biochemical Methods

Mild Copper-Mediated Fluorination of Aryl Stannanes and Aryl Trifluoroborates

Yingda Ye and Melanie S. Sanford

pp 4648–4651

Publication Date (Web): March 13, 2013 (Communication)

DOI: 10.1021/ja400300g

Section:

Organometallic and Organometalloidal Compounds

Transannulation of 1-Sulfonyl-1,2,3-triazoles with Heterocumulenes

Stepan Chuprakov, Sen Wai Kwok, and Valery V. Fokin

pp 4652–4655

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja400350c

Section:

Heterocyclic Compounds (More than One Hetero Atom)

Linear Side Chains in Benzo[1,2-*b*:4,5-*b'*]dithiophene–Thieno[3,4-*c*]pyrrole-4,6-dione Polymers Direct Self-Assembly and Solar Cell Performance

Clément Cabanetos, Abdulrahman El Labban, Jonathan A. Bartelt, Jessica D. Douglas, William R. Mateker, Jean M. J. Fréchet, Michael D. McGehee, and Pierre M. Beaujuge
pp 4656–4659

Publication Date (Web): March 8, 2013 (Communication)

DOI: 10.1021/ja400365b

 Section:

Electrochemical, Radiational, and Thermal Energy Technology

Synthesis of Large Dendrimers with the Dimensions of Small Viruses

Jongdoo Lim, Mauri Kostianen, Jan Maly, Viviana C. P. da Costa, Onofrio Annunziata, Giovanni M. Pavan, and Eric E. Simanek

pp 4660–4663

Publication Date (Web): February 12, 2013 (Communication)

DOI: 10.1021/ja400432e

 Section:

Chemistry of Synthetic High Polymers

Metal Ions To Control the Morphology of Semiconductor Nanoparticles: Copper Selenide Nanocubes

Wenhua Li, Reza Zamani, Maria Ibáñez, Doris Cadavid, Alexey Shavel, Joan Ramon Morante, Jordi Arbiol, and Andreu Cabot

pp 4664–4667

Publication Date (Web): March 7, 2013 (Communication)

DOI: 10.1021/ja400472m

 Section:

Crystallography and Liquid Crystals

Alkane C–H Insertion by Aryne Intermediates with a Silver Catalyst

Sang Young Yun, Kung-Pern Wang, Nam-Kyu Lee, Phani Mamidipalli, and Daesung Lee

pp 4668–4671

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja400477r

 Section:

Physical Organic Chemistry

Uncovering the Mechanism of the Ag(I)/Persulfate-Catalyzed Cross-Coupling Reaction of Arylboronic Acids and Heteroarenes

Niki R. Patel and Robert A. Flowers, II

pp 4672–4675

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja400712g

Section:

Physical Organic Chemistry

A GTP Affinity Probe for Proteomics Highlights Flexibility in Purine Nucleotide Selectivity

Elizabeth A. George Cisar, Nhan Nguyen, and Hugh Rosen
pp 4676–4679

Publication Date (Web): March 8, 2013 (Communication)

DOI: 10.1021/ja400839e

Section:

Biochemical Methods

A New Strategy for Efficient Synthesis of Medium and Large Ring Lactones without High Dilution or Slow Addition

Wanxiang Zhao, Zigang Li, and Jianwei Sun
pp 4680–4683

Publication Date (Web): March 8, 2013 (Communication)

DOI: 10.1021/ja400883q

Section:

Heterocyclic Compounds (One Hetero Atom)

Photoclickable Dendritic Molecular Glue: Noncovalent-to-Covalent Photochemical Transformation of Protein Hybrids

Noriyuki Uchida, Kou Okuro, Yamato Niitani, Xiao Ling, Takayuki Ariga, Michio Tomishige,
and Takuzo Aida
pp 4684–4687

Publication Date (Web): March 12, 2013 (Communication)

DOI: 10.1021/ja401059w

Section:

Biochemical Methods

A New Nanotechnology Technique for Determining Drug Efficacy Using Targeted Plasmonically Enhanced Single Cell Imaging Spectroscopy

Lauren A. Austin, Bin Kang, and Mostafa A. El-Sayed
pp 4688–4691

Publication Date (Web): March 7, 2013 (Communication)

DOI: 10.1021/ja4011145

Section:

Pharmacology

Catalytic Asymmetric Diaziridination

Lennart Lykke, Kim Søholm Halskov, Bjørn Drejø Carlsen, Victor X. Chen, and Karl Anker Jørgensen

pp 4692–4695

Publication Date (Web): March 14, 2013 (Communication)

DOI: 10.1021/ja401150m

 Section:

Heterocyclic Compounds (One Hetero Atom)

Application of In Situ-Generated Rh-Bound Trimethylenemethane Variants to the Synthesis of 3,4-Fused Pyrroles

Erica E. Schultz and Richmond Sarpong

pp 4696–4699

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja401380d

 Section:

Heterocyclic Compounds (One Hetero Atom)

Building Biologics by Chemical Synthesis: Practical Preparation of Di- and Triantennary *N*-Linked Glycoconjugates

Maciej A. Walczak, Joji Hayashida, and Samuel J. Danishefsky

pp 4700–4703

Publication Date (Web): March 5, 2013 (Communication)

DOI: 10.1021/ja401385v

 Section:

Carbohydrates

A Nanospheric Polyhydrido Copper Cluster of Elongated Triangular Orthobicupola Array: Liberation of H₂ from Solar Energy

Rajendra S. Dhayal, Jian-Hong Liao, Yan-Ru Lin, Ping-Kuei Liao, Samia Kahlal, Jean-Yves Saillard, and C. W. Liu

pp 4704–4707

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja401576s

 Section:

Inorganic Chemicals and Reactions

Synthesis of Substituted Pyridines from Cascade [1 + 5] Cycloaddition of Isonitriles to *N*-Formylmethyl-Substituted Enamides, Aerobic Oxidative Aromatization, and Acyl Transfer Reaction

Chuan-Hu Lei, De-Xian Wang, Liang Zhao, Jieping Zhu, and Mei-Xiang Wang
pp 4708–4711

Publication Date (Web): March 12, 2013 (Communication)

DOI: 10.1021/ja401701x

 Section:

Heterocyclic Compounds (One Hetero Atom)

N-Heterocyclic Carbene Ligands as Modulators of Luminescence in Three-Coordinate Gold(I) Complexes with Spectacular Quantum Yields

Renso Visbal, Isaura Ospino, José M. López-de-Luzuriaga, Antonio Laguna, and M. Concepción Gimeno

pp 4712–4715

Publication Date (Web): March 13, 2013 (Communication)

DOI: 10.1021/ja401523x

 Section:

Organometallic and Organometalloidal Compounds

Rhodium-Catalyzed Conversion of Furans to Highly Functionalized Pyrroles

Brendan T. Parr, Samantha A. Green, and Huw M. L. Davies

pp 4716–4718

Publication Date (Web): March 11, 2013 (Communication)

DOI: 10.1021/ja401386z

 Section:

Heterocyclic Compounds (One Hetero Atom)

Synthesis and Self-Assembly of Photonic Materials from Nanocrystalline Titania Sheets

Jian Zhu, Jinguo Wang, Fujian Lv, Shengxiong Xiao, Colin Nuckolls, and Hexing Li

pp 4719–4721

Publication Date (Web): March 18, 2013 (Communication)

DOI: 10.1021/ja401334j

 Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Articles

Formation of a Bifunctional Redox System Using Electrochemical Reduction of Platinum in Ferrocene Based Ionic Liquid and Its Reactivity with Aryldiazonium

Jalal Ghilane and Jean-Christophe Lacroix

pp 4722–4728

Publication Date (Web): March 7, 2013 (Article)

DOI: 10.1021/ja310889z

 Section:

Electrochemistry

Native States of Fast-Folding Proteins Are Kinetic Traps

Alex Dickson and Charles L. Brooks, III

pp 4729–4734

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja311077u

 Section:

General Biochemistry

Dynamics of Site Switching in DNA Polymerase

Rajan Lamichhane, Svitlana Y. Berezhna, Joshua P. Gill, Edwin Van der Schans, and David P. Millar

pp 4735–4742

Publication Date (Web): February 14, 2013 (Article)

DOI: 10.1021/ja311641b

 Section:

Enzymes

A Theoretical Investigation on the Mechanism and Stereochemical Course of the Addition of (*E*)-2-Butenyltrimethylsilane to Acetaldehyde by Electrophilic and Nucleophilic Activation

Larry M. Wolf and Scott E. Denmark

pp 4743–4756

Publication Date (Web): March 13, 2013 (Article)

DOI: 10.1021/ja311889v

 Section:

Organometallic and Organometalloidal Compounds

Tailor-Made Highly Luminescent and Ambipolar Transporting Organic Mixed Stacked Charge-Transfer Crystals: An Isometric Donor–Acceptor Approach

Sang Kyu Park, Shinto Varghese, Jong H. Kim, Seong-Jun Yoon, Oh Kyu Kwon, Byeong-Kwan An, Johannes Gierschner, and Soo Young Park
pp 4757–4764

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja312197b

 Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

A Supramolecular Janus Hyperbranched Polymer and Its Photoresponsive Self-Assembly of Vesicles with Narrow Size Distribution

Yong Liu, Chunyang Yu, Haibao Jin, Binbin Jiang, Xinyuan Zhu, Yongfeng Zhou, Zhongyuan Lu, and Deyue Yan

pp 4765–4770

Publication Date (Web): March 6, 2013 (Article)

DOI: 10.1021/ja3122608

 Section:

Chemistry of Synthetic High Polymers

Synthetic Control Over Photoinduced Electron Transfer in Phosphorescence Zinc Sensors

Hana Woo, Somin Cho, Yejee Han, Weon-Sik Chae, Dae-Ro Ahn, Youngmin You, and Wonwoo Nam

pp 4771–4787

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja3123202

 Section:

Biochemical Methods

Phosphoryl Transfer by Protein Kinase A Is Captured in a Crystal Lattice

Adam C. Bastidas, Michael S. Deal, Jon M. Steichen, Yurong Guo, Jian Wu, and Susan S. Taylor

pp 4788–4798

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja312237q

 Section:


Enzymes

Multifunctional Mesoporous Silica-Coated Graphene Nanosheet Used for Chemo-Photothermal Synergistic Targeted Therapy of Glioma

Yi Wang, Kaiyuan Wang, Jianfeng Zhao, Xingang Liu, Juan Bu, Xueying Yan, and Rongqin Huang
pp 4799–4804

Publication Date (Web): March 15, 2013 (Article)

DOI: 10.1021/ja312221g

Section:
Pharmaceuticals


Simultaneous Discrimination of Diameter, Handedness, and Metallicity of Single-Walled Carbon Nanotubes with Chiral Diporphyrin Nanocalipers

Gang Liu, Feng Wang, Songpol Chaunchaiyakul, Yukie Saito, Ajoy K. Bauri, Takahide Kimura, Yuji Kuwahara, and Naoki Komatsu

pp 4805–4814

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja312519s

Section:
Surface Chemistry and Colloids


Probing the Unique Dehydration-Induced Structural Modifications in Cancer Cell DNA Using Surface Enhanced Raman Spectroscopy

Sajanlal R. Panikkanvalappil, Megan A. Mackey, and Mostafa A. El-Sayed

pp 4815–4821

Publication Date (Web): March 7, 2013 (Article)

DOI: 10.1021/ja400187b

Section:
Biochemical Methods

Effects of the Protein Environment on the Spectral Properties of Tryptophan Radicals in *Pseudomonas aeruginosa* Azurin

Caterina Bernini, Tadeusz Andruniów, Massimo Olivucci, Rebecca Pogni, Riccardo Basosi, and Adalgisa Sinicropi

pp 4822–4833

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja400464n

Section:
General Biochemistry

Multiple Shape Transformations of Composite Hydrogel Sheets

Héloïse Thérien-Aubin, Zi Liang Wu, Zhihong Nie, and Eugenia Kumacheva

pp 4834–4839

Publication Date (Web): March 6, 2013 (Article)

DOI: 10.1021/ja400518c

 Section:

Plastics Manufacture and Processing

Absorption of CO₂ and CS₂ into the Hofmann-Type Porous Coordination Polymer: Electrostatic versus Dispersion Interactions

Milind Madhusudan Deshmukh, Masaaki Ohba, Susumu Kitagawa, and Shigeyoshi Sakaki

pp 4840–4849

Publication Date (Web): February 25, 2013 (Article)

DOI: 10.1021/ja400537f

 Section:

Inorganic Chemicals and Reactions

Axially Engineered Metal–Insulator Phase Transition by Graded Doping VO₂ Nanowires

Sangwook Lee, Chun Cheng, Hua Guo, Kedar Hippalgaonkar, Kevin Wang, Joonki Suh, Kai Liu, and Junqiao Wu

pp 4850–4855

Publication Date (Web): March 6, 2013 (Article)

DOI: 10.1021/ja400658u

 Section:

Electric Phenomena

On the Existence of Designer Magnetic Superatoms

Xinxing Zhang, Yi Wang, Haopeng Wang, Alane Lim, Gerd Gantefoer, Kit H. Bowen, J. Ulises Reveles, and Shiv N. Khanna

pp 4856–4861

Publication Date (Web): March 4, 2013 (Article)

DOI: 10.1021/ja400830z

 Section:

Magnetic Phenomena

Synthesis and Electronic Structure of Bis(imino)pyridine Iron Metallacyclic Intermediates in Iron-Catalyzed Cyclization Reactions

Jordan M. Hoyt, Kevin T. Sylvester, Scott P. Semproni, and Paul J. Chirik

pp 4862–4877

Publication Date (Web): February 28, 2013 (Article)

DOI: 10.1021/ja400895j


Section:
Organometallic and Organometalloidal Compounds

Origins of 1,6-Stereinduction in Torquoselective 6π Electrocyclizations

Ashay Patel, Gregg A. Barcan, Ohyun Kwon, and K. N. Houk
pp 4878–4883

Publication Date (Web): February 27, 2013 (Article)

DOI: 10.1021/ja400882y


Section:
Physical Organic Chemistry

Helix-Forming Propensity of Aliphatic Urea Oligomers Incorporating Noncanonical Residue Substitution Patterns

Nagendar Pendem, Céline Douat, Paul Claudon, Michel Laguerre, Sabine Castano, Bernard Desbat, Dominique Cavagnat, Eric Ennifar, Brice Kauffmann, and Gilles Guichard
pp 4884–4892

Publication Date (Web): February 27, 2013 (Article)

DOI: 10.1021/ja401151v


Section:
Physical Organic Chemistry

Improving the Charge Transport in Self-Assembled Monolayer Field-Effect Transistors: From Theory to Devices

Christof M. Jäger, Thomas Schmaltz, Michael Novak, Artoem Khassanov, Alexei Vorobiev, Matthias Hennemann, Andreas Krause, Hanno Dietrich, Dirk Zahn, Andreas Hirsch, Marcus Halik, and Timothy Clark
pp 4893–4900

Publication Date (Web): March 12, 2013 (Article)

DOI: 10.1021/ja401320n

Section:
Electric Phenomena