



April 10, 2013Volume 135, Issue 14
Pages 5229-5474

Order Print Issue

SPOTLIGHTS

Spotlights on Recent *JACS* **Publications**

pp 5229-5229

Publication Date (Web): April 10, 2013 (Spotlights)

DOI: 10.1021/ja403242v

COMMUNICATIONS

Tunable and Switchable Dielectric Constant in an Amphidynamic Crystal

Wen Zhang, Heng-Yun Ye, Robert Graf, Hans W. Spiess, Ye-Feng Yao, Run-Qiang Zhu, and Ren-Gen Xiong

pp 5230-5233

Publication Date (Web): March 21, 2013 (Communication)

DOI: 10.1021/ja3110335

Section:

Electric Phenomena

Probing the Mechanism of Cyanobacterial Aldehyde Decarbonylase Using a Cyclopropyl Aldehyde

Bishwajit Paul, Debasis Das, Benjamin Ellington, and E. Neil G. Marsh pp 5234-5237

Publication Date (Web): March 20, 2013 (Communication)

DOI: 10.1021/ja3115949

Section:

Enzymes

Quantitative Exploration of Electron Transfer in a Single Noncovalent Supramolecular Assembly

Phuc T. Bui, Tomoaki Nishino, Yojiro Yamamoto, and Hiroshi Shiigi pp 5238-5241

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

DOI: 10.1021/ja312019p

Section:

Physical Organic Chemistry

Intramolecular Oxyallyl-Carbonyl (3 + 2) Cycloadditions

Elizabeth H. Krenske, Shuzhong He, Jian Huang, Yunfei Du, K. N. Houk, and Richard P. Hsung

pp 5242-5245

Publication Date (Web): April 1, 2013 (Communication)

DOI: 10.1021/ja312459b

Section:

Physical Organic Chemistry

Efficient Isomerization of Glucose to Fructose over Zeolites in Consecutive Reactions in Alcohol and Aqueous Media

Shunmugavel Saravanamurugan, Marta Paniagua, Juan A. Melero, and Anders Riisager

pp 5246-5249

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

DOI: 10.1021/ja400097f

Section:

Industrial Organic Chemicals, Leather, Fats, and Waxes

Interfacial Energy Conversion in Ru^{II} Polypyridyl-Derivatized Oligoproline Assemblies on TiO₂

Da Ma, Stephanie E. Bettis, Kenneth Hanson, Maria Minakova, Leila Alibabaei, William Fondrie, Derek M. Ryan, Garegin A. Papoian, Thomas J. Meyer, Marcey L. Waters, and John M. Papanikolas pp 5250-5253

Publication Date (Web): March 20, 2013 (Communication)

DOI: 10.1021/ja312143h

Section:

Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes

A DNAzyme-Gold Nanoparticle Probe for Uranyl Ion in Living Cells

Peiwen Wu, Kevin Hwang, Tian Lan, and Yi Lu

pp 5254-5257

Publication Date (Web): March 17, 2013 (Communication)

DOI: 10.1021/ja400150v

Section: Toxicology

Single Particle Detection by Area Amplification: Single Wall Carbon Nanotube Attachment to a Nanoelectrode

Jun Hui Park, Scott N. Thorgaard, Bo Zhang, and Allen J. Bard

pp 5258-5261

Publication Date (Web): March 26, 2013 (Communication)

DOI: 10.1021/ja4000917

Section:

Electrochemistry

Double Helices of a Pyridine-Appended Zinc Chlorophyll Derivative

Yoshinao Shinozaki, Gary Richards, Keizo Ogawa, Akihito Yamano, Kazuaki Ohara, Kentaro Yamaguchi, Shin-ichiro Kawano, Kentaro Tanaka, Yasuyuki Araki, Takehiko Wada, and Joe Otsuki

pp 5262-5265

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja400493e

Section:

Inorganic Chemicals and Reactions

Photoluminescent Gold-Copper Nanoparticle Alloys with Composition-Tunable Near-Infrared Emission

Christopher M. Andolina, Andrew C. Dewar, Ashley M. Smith, Lauren E. Marbella, Michael J. Hartmann, and Jill E. Millstone pp 5266-5269

Publication Date (Web): April 2, 2013 (Communication)

DOI: 10.1021/ja400569u

Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Nylon-3 Polymers with Selective Antifungal Activity

Runhui Liu, Xinyu Chen, Zvi Hayouka, Saswata Chakraborty, Shaun P. Falk, Bernard Weisblum, Kristyn S. Masters, and Samuel H. Gellman pp 5270-5273

Publication Date (Web): April 2, 2013 (Communication)

DOI: 10.1021/ja4006404

Section:

Chemistry of Synthetic High Polymers

Histone Modification via Rapid Cleavage of C4'-Oxidized Abasic Sites in Nucleosome Core Particles

Chuanzheng Zhou, Jonathan T. Sczepanski, and Marc M. Greenberg pp 5274-5277

Publication Date (Web): March 26, 2013 (Communication)

DOI: 10.1021/ja400915w

Section:

General Biochemistry

Steric-Hindrance-Driven Shape Transition in PbS Quantum Dots: Understanding Size-Dependent Stability

Hyekyoung Choi, Jae-Hyeon Ko, Yong-Hyun Kim, and Sohee Jeong pp 5278-5281

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

DOI: 10.1021/ja400948t

Section:

Electrochemical, Radiational, and Thermal Energy Technology

Photothermal Colloid Antibodies for Shape-Selective Recognition and Killing of Microorganisms

Josef Borovička, William J. Metheringham, Leigh A. Madden, Christopher D.

Walton, Simeon D. Stoyanov, and Vesselin N. Paunov

pp 5282-5285

Publication Date (Web): March 29, 2013 (Communication)

DOI: 10.1021/ja400781f

Section:

Pharmaceuticals

Palladium-Catalyzed Intermolecular Dehydrogenative Aminohalogenation of Alkenes under Molecular Oxygen: An Approach to Brominated Enamines

Xiaochen Ji, Huawen Huang, Wanqing Wu, and Huanfeng Jiang pp 5286-5289

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja401034g

Section:

General Organic Chemistry

Intein-Triggered Artificial Protein Hydrogels That Support the Immobilization of Bioactive Proteins

Miguel Ramirez, Dongli Guan, Victor Ugaz, and Zhilei Chen pp 5290-5293

Publication Date (Web): March 20, 2013 (Communication)

DOI: 10.1021/ja401075s

Section:

Enzymes

Complementary Helicity Interchange of Optically Switchable Supramolecular-Enantiomeric Helicenes with (−)-Gel-Sol-(+)-Gel Transition Ternary Logic

Chien-Tien Chen, Chien-Hsiang Chen, and Tiow-Gan Ong pp 5294-5297

Publication Date (Web): March 22, 2013 (Communication)

DOI: 10.1021/ja401214t

Section:

Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes

Electrophilic Fragment-Based Design of Reversible Covalent Kinase Inhibitors

Rand M. Miller, Ville O. Paavilainen, Shyam Krishnan, Iana M. Serafimova, and Jack Taunton

pp 5298-5301

Publication Date (Web): March 29, 2013 (Communication)

DOI: 10.1021/ja401221b

Section:

Enzymes

Transmembrane Halogen-Bonding Cascades

Andreas Vargas Jentzsch and Stefan Matile

pp 5302-5303

Publication Date (Web): March 21, 2013 (Communication)

DOI: 10.1021/ja4013276

Section:

General Biochemistry

Controlled Synthesis of Highly Crystalline MoS₂ Flakes by Chemical Vapor Deposition

Xinsheng Wang, Hongbin Feng, Yongmin Wu, and Liying Jiao pp 5304-5307

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

DOI: 10.1021/ja4013485

Section:

Crystallography and Liquid Crystals

Nickel-Catalyzed Direct Alkylation of C–H Bonds in Benzamides and Acrylamides with Functionalized Alkyl Halides via Bidentate-Chelation Assistance

Yoshinori Aihara and Naoto Chatani

pp 5308-5311

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

DOI: 10.1021/ja401344e

Section:

Heterocyclic Compounds (One Hetero Atom)

Nickel(II) Dithiocarbamate Complexes Containing Sulforhodamine B as Fluorescent Probes for Selective Detection of Nitrogen Dioxide

Yan Yan, Saarangan Krishnakumar, Huan Yu, Srinivas Ramishetti, Lih-Wen Deng, Suhua Wang, Leaf Huang, and Dejian Huang

pp 5312-5315

Publication Date (Web): March 26, 2013 (Communication)

DOI: 10.1021/ja401555y

CCSSection:

Biochemical Methods

Highly Diastereo- and Enantioselective Allylboration of Aldehydes using α -Substituted Allyl/Crotyl Pinacol Boronic Esters via in Situ Generated Borinic Esters

Jack L.-Y. Chen, Helen K. Scott, Matthew J. Hesse, Christine L. Willis, and Varinder K. Aggarwal

pp 5316-5319

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

DOI: 10.1021/ja401564z

Section:

Benzene, Its Derivatives, and Condensed Benzenoid Compounds

Tension Sensing Nanoparticles for Mechano-Imaging at the Living/Nonliving Interface

Yang Liu, Kevin Yehl, Yoshie Narui, and Khalid Salaita pp 5320-5323

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

DOI: 10.1021/ja401494e

Section:

Biochemical Methods

Asymmetric Total Synthesis of (-)-Amphidinolide V through Effective Combinations of Catalytic Transformations

Ivan Volchkov and Daesung Lee

pp 5324-5327

Publication Date (Web): March 21, 2013 (Communication)

DOI: 10.1021/ja401717b

Section:

Biomolecules and Their Synthetic Analogs

Mechanochemical Synthesis of Chemically Stable Isoreticular Covalent Organic Frameworks

Bishnu P. Biswal, Suman Chandra, Sharath Kandambeth, Binit Lukose,

Thomas Heine, and Rahul Banerjee

pp 5328-5331

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja4017842

Section:

Physical Organic Chemistry

Copper-Catalyzed Electrophilic Carbofunctionalization of Alkynes to Highly Functionalized Tetrasubstituted Alkenes

Marcos G. Suero, Elliott D. Bayle, Beatrice S. L. Collins, and Matthew J.

Gaunt

pp 5332-5335

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja401840j

Section:

General Organic Chemistry

Molecularly Imprinted Polymer-Based Catalytic Micromotors for Selective Protein Transport

Jahir Orozco, Allan Cortés, Guanzhi Cheng, Sirilak Sattayasamitsathit, Wei Gao, Xiaomiao Feng, Yufeng Shen, and Joseph Wang pp 5336-5339

Publication Date (Web): March 26, 2013 (Communication)

DOI: 10.1021/ja4018545

CCSSection:

Biochemical Methods

Enantio- and Diastereoselective Synthesis of *N*-Acetyl Dihydrotetrafibricin Methyl Ester

Philippe Nuhant and William R. Roush pp 5340-5343

Publication Date (Web): March 26, 2013 (Communication)

DOI: 10.1021/ja401918r

Section:

Biomolecules and Their Synthetic Analogs

Dramatic Effect of Furanose C2' Substitution on Structure and Stability: Directing the Folding of the Human Telomeric Quadruplex with a Single Fluorine Atom

Nerea Martín-Pintado, Maryam Yahyaee-Anzahaee, Glen F. Deleavey, Guillem Portella, Modesto Orozco, Masad J. Damha, and Carlos González pp 5344-5347

Publication Date (Web): March 22, 2013 (Communication)

DOI: 10.1021/ja401954t

Section:

General Biochemistry

Azaphosphatranes as Structurally Tunable Organocatalysts for Carbonate Synthesis from CO₂ and Epoxides

Bastien Chatelet, Lionel Joucla, Jean-Pierre Dutasta, Alexandre Martinez, Kai C. Szeto, and Véronique Dufaud

pp 5348-5351

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja402053d

Section:

Physical Organic Chemistry

Synthesis and Spectroscopic and Computational Characterization of the Chalcogenido-Substituted Analogues of the Uranyl Ion, [OUE]²⁺ (E = S, Se)

Jessie L. Brown, Skye Fortier, Guang Wu, Nikolas Kaltsoyannis, and Trevor W. Hayton

pp 5352-5355

Publication Date (Web): March 22, 2013 (Communication)

DOI: 10.1021/ja402068j

Section:

Organometallic and Organometalloidal Compounds

Enantioselective Iron-Catalyzed Azidation of β -Keto Esters and Oxindoles

Qing-Hai Deng, Tim Bleith, Hubert Wadepohl, and Lutz H. Gade pp 5356-5359

Publication Date (Web): March 28, 2013 (Communication)

DOI: 10.1021/ja402082p

Section:

General Organic Chemistry

The Marriage of Metallacycle Transfer Chemistry with Suzuki– Miyaura Cross-Coupling To Give Main Group Element-Containing Conjugated Polymers

Gang He, Le Kang, William Torres Delgado, Olena Shynkaruk, Michael J. Ferguson, Robert McDonald, and Eric Rivard pp 5360-5363

Publication Date (Web): March 21, 2013 (Communication)

DOI: 10.1021/ja402242z

Section:

Chemistry of Synthetic High Polymers

A Coupling of Benzamides and Donor/Acceptor Diazo Compounds To Form γ-Lactams via Rh(III)-Catalyzed C–H Activation

Todd K. Hyster, Kyle E. Ruhl, and Tomislav Rovis pp 5364-5367

Publication Date (Web): April 2, 2013 (Communication)

DOI: 10.1021/ja402274g

Section:

Physical Organic Chemistry

Visible-Light-Induced Oxygenation of Benzene by the Triplet Excited State of 2,3-Dichloro-5,6-dicyano-p-benzoquinone

Kei Ohkubo, Atsushi Fujimoto, and Shunichi Fukuzumi pp 5368-5371

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

DOI: 10.1021/ja402303k

Section:

Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes

Stacking Variants and Superconductivity in the Bi-O-S System

W. Adam Phelan, David C. Wallace, Kathryn E. Arpino, James R. Neilson, Kenneth J. Livi, Che R. Seabourne, Andrew J. Scott, and Tyrel M. McQueen pp 5372-5374

Publication Date (Web): March 25, 2013 (Communication)

DOI: 10.1021/ja4011767

Section:

Electric Phenomena

ARTICLES

Fabrication of CaFe₂O₄/TaON Heterojunction Photoanode for Photoelectrochemical Water Oxidation

Eun Sun Kim, Naoyuki Nishimura, Ganesan Magesh, Jae Young Kim, Ji-Wook Jang, Hwichan Jun, Jun Kubota, Kazunari Domen, and Jae Sung Lee pp 5375-5383

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

DOI: 10.1021/ja308723w

Section:

Electrochemical, Radiational, and Thermal Energy Technology

A Dual Anchoring Strategy for the Localization and Activation of Artificial Metalloenzymes Based on the Biotin-Streptavidin Technology

Jeremy M. Zimbron, Tillmann Heinisch, Maurus Schmid, Didier Hamels, Elisa S. Nogueira, Tilman Schirmer, and Thomas R. Ward pp 5384-5388

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

DOI: 10.1021/ja309974s

Section:

Enzymes

Direct Modulation of Microtubule Stability Contributes to Anthracene General Anesthesia

Daniel J. Emerson, Brian P. Weiser, John Psonis, Zhengzheng Liao, Olena Taratula, Ashley Fiamengo, Xiaozhao Wang, Keizo Sugasawa, Amos B. Smith, III, Roderic G. Eckenhoff, and Ivan J. Dmochowski pp 5389-5398

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

DOI: 10.1021/ja311171u

Section: Pharmacology

Cyclic Denaturation and Renaturation of Double-Stranded DNA by Redox-State Switching of DNA Intercalators

Shahida N. Syed, Holger Schulze, Daniel Macdonald, Jason Crain, Andrew R. Mount, and Till T. Bachmann

pp 5399-5407

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

DOI: 10.1021/ja311873t

Section:

Biochemical Genetics

Expanding the Scope of Replicable Unnatural DNA: Stepwise Optimization of a Predominantly Hydrophobic Base Pair

Thomas Lavergne, Mélissa Degardin, Denis A. Malyshev, Henry T. Quach, Kirandeep Dhami, Phillip Ordoukhanian, and Floyd E. Romesberg pp 5408-5419

Publication Date (Web): April 2, 2013 (Article)

DOI: 10.1021/ja312148q

Section:

General Biochemistry

Stability of Single- and Few-Molecule Junctions of Conjugated Diamines

M. Teresa González, Adrián Díaz, Edmund Leary, Raúl García, M. Ángeles Herranz, Gabino Rubio-Bollinger, Nazario Martín, and Nicolás Agraït pp 5420-5426

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

DOI: 10.1021/ja312392q

CCS Section:

Electric Phenomena

Transformation of Metal-Organic Framework to Polymer Gel by Cross-Linking the Organic Ligands Preorganized in Metal-Organic Framework

Takumi Ishiwata, Yuki Furukawa, Kouta Sugikawa, Kenta Kokado, and Kazuki Sada

pp 5427-5432

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

DOI: 10.1021/ja3125614

Section:

Chemistry of Synthetic High Polymers

TRAP Display: A High-Speed Selection Method for the Generation of Functional Polypeptides

Takahiro Ishizawa, Takashi Kawakami, Patrick C. Reid, and Hiroshi Murakami pp 5433-5440

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

DOI: 10.1021/ja312579u

Section:

Biochemical Genetics

[Co(bpy)₃]^{3+/2+} and [Co(phen)₃]^{3+/2+} Electron Mediators for Overall Water Splitting under Sunlight Irradiation Using Z-Scheme Photocatalyst System

Yasuyoshi Sasaki, Hideki Kato, and Akihiko Kudo

pp 5441-5449

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

DOI: 10.1021/ja400238r

CCSSection:

Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes

Millifluidics for Time-resolved Mapping of the Growth of Gold Nanostructures

Katla Sai Krishna, Chelliah V. Navin, Sanchita Biswas, Varshni Singh, Kyungmin Ham, G. Lisa Bovenkamp, Chandra S. Theegala, Jeffery T. Miller, James J. Spivey, and Challa S. S. R. Kumar pp 5450-5456

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

DOI: 10.1021/ja400434c

Section:

Industrial Organic Chemicals, Leather, Fats, and Waxes

A General Method for Constructing Atomic-Resolution RNA Ensembles using NMR Residual Dipolar Couplings: The Basis for Interhelical Motions Revealed

Loïc Salmon, Gavin Bascom, Ioan Andricioaei, and Hashim M. Al-Hashimi pp 5457-5466

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

DOI: 10.1021/ja400920w

Section:

Biochemical Methods

Total Synthesis and Complete Structural Assignment of Yaku'amide A

Takefumi Kuranaga, Yusuke Sesoko, Komei Sakata, Naoya Maeda, Atsushi Hayata, and Masayuki Inoue

pp 5467-5474

Publication Date (Web): March 16, 2013 (Article)

DOI: 10.1021/ja401457h