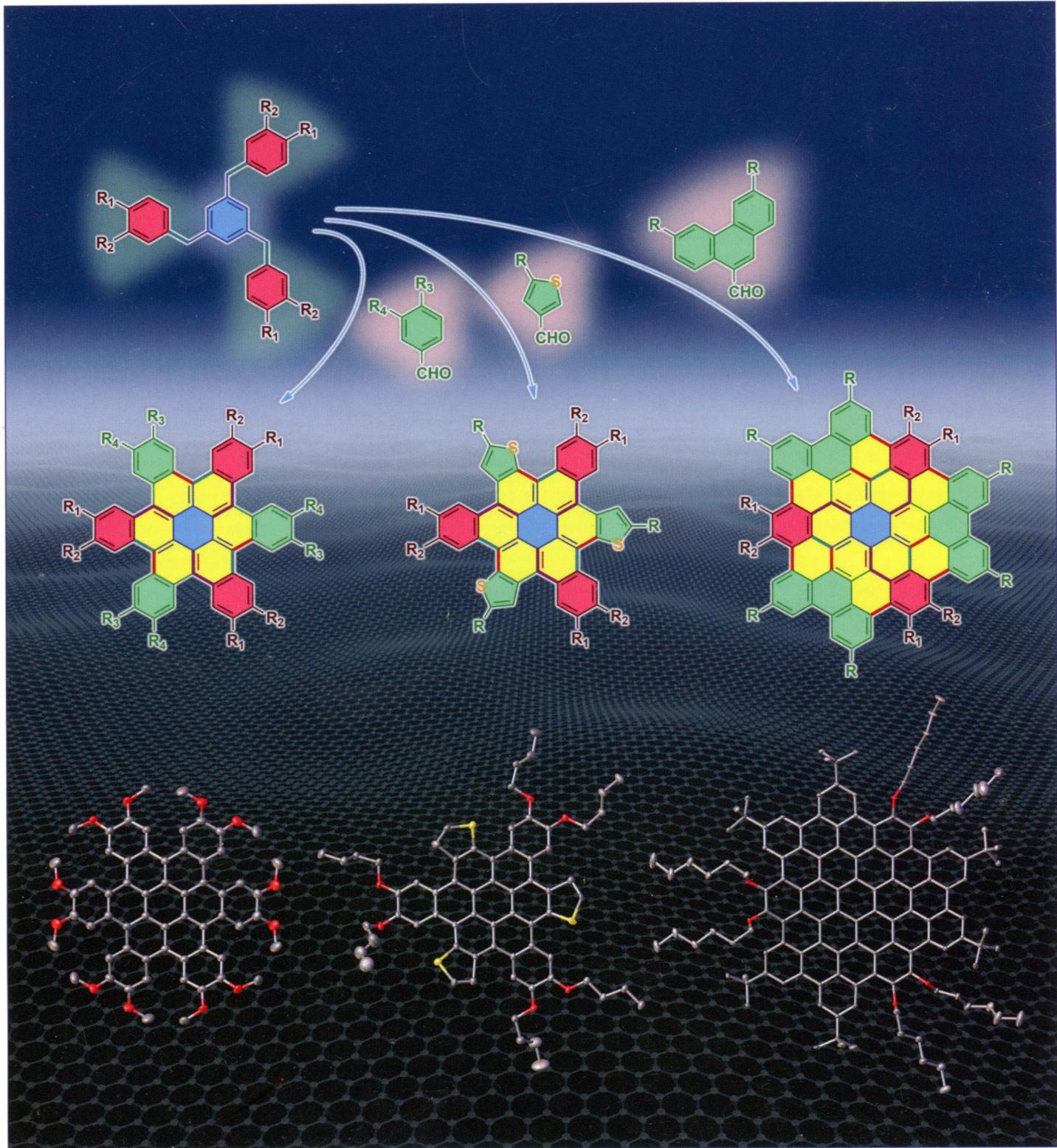


111  
A47/cS

April 2, 2014  
Volume 136  
Number 13  
pubs.acs.org/JACS

# J|A|C|S

JOURNAL OF THE AMERICAN CHEMICAL SOCIETY



ACS Publications  
MOST TRUSTED. MOST CITED. MOST READ.

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

## Content

### 1. Spotlights on Recent JACS Publications

ACS Contributing Correspondents

*Journal of the American Chemical Society* 2014 136 (13), 4795-4796

### 2. Photochemical Water Oxidation and Origin of Nonaqueous Uranyl Peroxide Complexes

Brendan T. McGrail, Laura S. Pianowski, and Peter C. Burns

*Journal of the American Chemical Society* 2014 136 (13), 4797-4800

### 3. A TET Homologue Protein from *Coprinopsis cinerea* (CcTET) That Biochemically Converts 5-Methylcytosine to 5-Hydroxymethylcytosine, 5-Formylcytosine, and 5-Carboxylcytosine

Liang Zhang, Weizhong Chen, Lakshminarayan M. Iyer, Jennifer Hu, Gloria Wang, Ye Fu, Miao Yu, Qing Dai, L. Aravind, and Chuan He

*Journal of the American Chemical Society* 2014 136 (13), 4801-4804

### 4. Synthesis of Well-Defined Microporous Carbons by Molecular-Scale Templating with Polyhedral Oligomeric Silsesquioxane Moieties

Zhenghui Li, Dingcai Wu, Yeru Liang, Ruowen Fu, and Krzysztof Matyjaszewski

*Journal of the American Chemical Society* 2014 136 (13), 4805-4808

### 5. Photoelectric Signal Conversion by Combination of Electron-Transfer Chain Catalytic Isomerization and Photoisomerization on Benzodimethyldihydropyrenes

Masa-aki Kishida, Tetsuro Kusamoto, and Hiroshi Nishihara

*Journal of the American Chemical Society* 2014 136 (13), 4809-4812

### 6. Carbon Monoxide-Assisted Size Confinement of Bimetallic Alloy Nanoparticles

Chunhua Cui, Lin Gan, Maximilian Neumann, Marc Heggen, Beatriz Roldan Cuenya, and Peter Strasser

*Journal of the American Chemical Society* 2014 136 (13), 4813-4816

### 7. An Efficient Approach to Mechanically Planar Chiral Rotaxanes

Robert J. Bordoli and Stephen M. Goldup

*Journal of the American Chemical Society* 2014 136 (13), 4817-4820

### 8. S-P Coupling Induced Unusual Open-Shell Metal Clusters

Shi-Bo Cheng, Cuneyt Berkdemir, Joshua J. Melko, and A. W. Castleman, Jr.

*Journal of the American Chemical Society* 2014 136 (13), 4821-4824

### 9. Resonance Raman Spectroscopy of the Oxygenated Intermediates of Human CYP19A1 Implicates a Compound I Intermediate in the Final Lyase Step

Piotr J. Mak, Abhinav Luthra, Stephen G. Sligar, and James R. Kincaid

*Journal of the American Chemical Society* 2014 136 (13), 4825-4828

**10. Homogeneous Perdehydrogenation and Perhydrogenation of Fused Bicyclic N-Heterocycles Catalyzed by Iridium Complexes Bearing a Functional Bipyridonate Ligand**  
Ken-ichi Fujita, Yui Tanaka, Masato Kobayashi, and Ryohei Yamaguchi  
*Journal of the American Chemical Society* **2014** *136* (13), 4829-4832

**11. Localized Reduction of Graphene Oxide by Electrogenerated Naphthalene Radical Anions and Subsequent Diazonium Electrografting**  
Joël Azevedo, Laure Fillaud, Céline Bourdillon, Jean-Marc Noël, Frédéric Kanoufi, Bruno Jousselme, Vincent Derycke, Stéphane Campidelli, and Renaud Cornut  
*Journal of the American Chemical Society* **2014** *136* (13), 4833-4836

**12. Cyclolavandulyl Skeleton Biosynthesis via Both Condensation and Cyclization Catalyzed by an Unprecedented Member of the cis-Isoprenyl Diphosphate Synthase Superfamily**  
Taro Ozaki, Ping Zhao, Tetsuro Shinada, Makoto Nishiyama, and Tomohisa Kuzuyama  
*Journal of the American Chemical Society* **2014** *136* (13), 4837-4840

**13. Enantioselective Synthesis of Planar Chiral Ferrocenes via Pd(0)-Catalyzed Intramolecular Direct C–H Bond Arylation**  
De-Wei Gao, Qin Yin, Qing Gu, and Shu-Li You  
*Journal of the American Chemical Society* **2014** *136* (13), 4841-4844

**14. Microarray Discovery of New OGT Substrates: The Medulloblastoma Oncogene OTX2 Is O-GlcNAcylated**  
Rodrigo F. Ortiz-Meoz, Yifat Merbl, Marc W. Kirschner, and Suzanne Walker  
*Journal of the American Chemical Society* **2014** *136* (13), 4845-4848

**15. Characterizing Emulsions by Observation of Single Droplet Collisions—Attoliter Electrochemical Reactors**  
Byung-Kwon Kim, Aliaksei Boika, Jiyeon Kim, Jeffrey E. Dick, and Allen J. Bard  
*Journal of the American Chemical Society* **2014** *136* (13), 4849-4852

**16. C–H Methylation of Heteroarenes Inspired by Radical SAM Methyl Transferase**  
Jinghan Gui, Qianghui Zhou, Chung-Mao Pan, Yuki Yabe, Aaron C. Burns, Michael R. Collins, Martha A. Ornelas, Yoshihiro Ishihara, and Phil S. Baran  
*Journal of the American Chemical Society* **2014** *136* (13), 4853-4856

**17. 1,2-Selective Hydrosilylation of Conjugated Dienes**  
Sarah E. Parker, Jonas Börgel, and Tobias Ritter  
*Journal of the American Chemical Society* **2014** *136* (13), 4857-4860

**18. B-Doped Pd Catalyst: Boosting Room-Temperature Hydrogen Production from Formic Acid–Formate Solutions**  
Kun Jiang, Ke Xu, Shouzhong Zou, and Wen-Bin Cai  
*Journal of the American Chemical Society* **2014** *136* (13), 4861-4864

**19. Asymmetric Synthesis of P-Stereogenic Diarylphosphinites by Palladium-Catalyzed Enantioselective Addition of Diarylphosphines to Benzoquinones**

Yinhua Huang, Yongxin Li, Pak-Hing Leung, and Tamio Hayashi

*Journal of the American Chemical Society* **2014** *136* (13), 4865-4868

**20. Tunable Catalysts for Solvent-Free Biphasic Systems: Pickering Interfacial Catalysts over Amphiphilic Silica Nanoparticles**

Wen-Juan Zhou, Lin Fang, Zhaoyu Fan, Belén Albela, Laurent Bonneviot, Floryan De Campo, Marc Pera-Titus, and Jean-Marc Clacens

*Journal of the American Chemical Society* **2014** *136* (13), 4869-4872

**21. Antimicrobial Metallopolymers and Their Bioconjugates with Conventional Antibiotics against Multidrug-Resistant Bacteria**

Jiuyang Zhang, Yung Pin Chen, Kristen P. Miller, Mitra S. Ganewatta, Marpe Bam, Yi Yan, Mitzi Nagarkatti, Alan W. Decho, and Chuanbing Tang

*Journal of the American Chemical Society* **2014** *136* (13), 4873-4876

**22. Three-Input Logic Gates with Potential Applications for Neuronal Imaging**

Kenneth S. Hettie, Jessica L. Klockow, and Timothy E. Glass

*Journal of the American Chemical Society* **2014** *136* (13), 4877-4880

**23. Visible Light-Driven Hydrogen Evolution from Water Catalyzed by A Molecular Cobalt Complex**

Lianpeng Tong, Ruifa Zong, and Randolph P. Thummel

*Journal of the American Chemical Society* **2014** *136* (13), 4881-4884

**24. The Nucleophilicity of a Dialkylcarbene: Unusual Activation Parameters for Additions of Adamantanylidene to Simple Alkenes**

Robert A. Moss, Lei Wang, and Karsten Krogh-Jespersen

*Journal of the American Chemical Society* **2014** *136* (13), 4885-4888

**25. Understanding Spin Structure in Metallacrown Single-Molecule Magnets using Magnetic Compton Scattering**

Aniruddha Deb, Thaddeus T. Boron, III, Masayoshi Itou, Yoshiharu Sakurai, Talal Mallah, Vincent L. Pecoraro, and James E. Penner-Hahn

*Journal of the American Chemical Society* **2014** *136* (13), 4889-4892

**26. Multicolor Barcoding in a Single Upconversion Crystal**

Yuhai Zhang, Lixin Zhang, Renren Deng, Jing Tian, Yun Zong, Dayong Jin, and Xiaogang Liu

*Journal of the American Chemical Society* **2014** *136* (13), 4893-4896

**27. CoSe<sub>2</sub> Nanoparticles Grown on Carbon Fiber Paper: An Efficient and Stable Electrocatalyst for Hydrogen Evolution Reaction**

Desheng Kong, Haotian Wang, Zhiyi Lu, and Yi Cui

*Journal of the American Chemical Society* **2014** *136* (13), 4897-4900

**28. Directing Group-Controlled Regioselectivity in an Enzymatic C–H Bond Oxygenation**

Solymar Negretti, Alison R. H. Narayan, Karoline C. Chiou, Petrea M. Kells, Jessica L. Stachowski, Douglas A. Hansen, Larissa M. Podust, John Montgomery, and David H. Sherman  
*Journal of the American Chemical Society* **2014** *136* (13), 4901-4904

**29. A Switchable [2]Rotaxane Asymmetric Organocatalyst That Utilizes an Acyclic Chiral Secondary Amine**

Victor Blanco, David A. Leigh, Vanesa Marcos, José A. Morales-Serna, and Alina L. Nussbaumer  
*Journal of the American Chemical Society* **2014** *136* (13), 4905-4908

**30. Two-Phase Synthesis of (−)-Taxuyunnanine D**

Nathan C. Wilde, Minetaka Isomura, Abraham Mendoza, and Phil S. Baran  
*Journal of the American Chemical Society* **2014** *136* (13), 4909-4912

**31. Turn Plasticity Distinguishes Different Modes of Amyloid- $\beta$  Aggregation**

Nasrollah Rezaei-Ghaleh, Mehriar Amininasab, Karin Giller, Sathish Kumar, Anne Stündl, Anja Schneider, Stefan Becker, Jochen Walter, and Markus Zweckstetter  
*Journal of the American Chemical Society* **2014** *136* (13), 4913-4919

**32. Understanding Interactions between Manganese Oxide and Gold That Lead to Enhanced Activity for Electrocatalytic Water Oxidation**

Yelena Gorlin, Chia-Jung Chung, Jesse D. Benck, Dennis Nordlund, Linsey Seitz, Tsu-Chien Weng, Dimosthenis Sokaras, Bruce M. Clemens, and Thomas F. Jaramillo  
*Journal of the American Chemical Society* **2014** *136* (13), 4920-4926

**33. How a Low-Fidelity DNA Polymerase Chooses Non-Watson–Crick from Watson–Crick Incorporation**

Wen-Jin Wu, Mei-I Su, Jian-Li Wu, Sandeep Kumar, Liang-hin Lim, Chun-Wei Eric Wang, Frank H. T. Nelissen, Ming-Chuan Chad Chen, Jurgen F. Doreleijers, Sybren S. Wijmenga, and Ming-Daw Tsai  
*Journal of the American Chemical Society* **2014** *136* (13), 4927-4937

**34. Trapping of a Spatial Transient State During the Framework Transformation of a Porous Coordination Polymer**

Mio Kondo, Shuhei Furukawa, Kenji Hirai, Takaaki Tsuruoka, Julien Reboul, Hiromitsu Uehara, Stéphane Diring, Yoko Sakata, Osami Sakata, and Susumu Kitagawa  
*Journal of the American Chemical Society* **2014** *136* (13), 4938-4944

**35. Dendritic and Nanowire Assemblies of Condensed DNA Polymer Brushes**

Dan Bracha and Roy H. Bar-Ziv  
*Journal of the American Chemical Society* **2014** *136* (13), 4945-4953

**36. Insight into Proton Transfer in Phosphotungstic Acid Functionalized Mesoporous Silica-Based Proton Exchange Membrane Fuel Cells**

Yuhua Zhou, Jing Yang, Haibin Su, Jie Zeng, San Ping Jiang, and William A. Goddard  
*Journal of the American Chemical Society* **2014** *136* (13), 4954-4964

**37. Reusable Oxidation Catalysis Using Metal-Monocatecholato Species in a Robust Metal–Organic Framework**

Honghan Fei, JaeWook Shin, Ying Shirley Meng, Mario Adelhardt, Jörg Sutter, Karsten Meyer, and Seth M. Cohen

*Journal of the American Chemical Society* **2014** *136* (13), 4965-4973

**38. Catalytic Mechanisms of Direct Pyrrole Synthesis via Dehydrogenative Coupling Mediated by PNP-Ir or PNN-Ru Pincer Complexes: Crucial Role of Proton-Transfer Shuttles in the PNP-Ir System**

Shuanglin Qu, Yanfeng Dang, Chunyu Song, Mingwei Wen, Kuo-Wei Huang, and Zhi-Xiang Wang

*Journal of the American Chemical Society* **2014** *136* (13), 4974-4991

**39. A Subfamily of Bacterial Ribokinases Utilizes a Hemithioacetal for Pyridoxal Phosphate Salvage**

Matthew B. Nodwell, Maximilian F. Koch, Ferdinand Alte, Sabine Schneider, and Stephan A. Sieber

*Journal of the American Chemical Society* **2014** *136* (13), 4992-4999

**40. Single Crystal XRD Structure and Theoretical Analysis of the Chiral Au<sub>30</sub>S(S-t-Bu)<sub>18</sub> Cluster**

David Crasto, Sami Malola, Grace Brosofsky, Amala Dass, and Hannu Häkkinen

*Journal of the American Chemical Society* **2014** *136* (13), 5000-5005

**41. In silico Design of Porous Polymer Networks: High-Throughput Screening for Methane Storage Materials**

Richard L. Martin, Cory M. Simon, Berend Smit, and Maciej Haranczyk

*Journal of the American Chemical Society* **2014** *136* (13), 5006-5022

**42. Comparative Reactivity of Different Types of Stable Cyclic and Acyclic Mono- and Diamino Carbenes with Simple Organic Substrates**

David Martin, Yves Canac, Vincent Lavallo, and Guy Bertrand

*Journal of the American Chemical Society* **2014** *136* (13), 5023-5030

**43. Understanding THz Spectra of Aqueous Solutions: Glycine in Light and Heavy Water**

Jian Sun, Gudrun Niehues, Harald Forbert, Dominique Decka, Gerhard Schwaab, Dominik Marx, and Martina Havenith

*Journal of the American Chemical Society* **2014** *136* (13), 5031-5038

**44. Unusual Stability of Acetonitrile-Based Superconcentrated Electrolytes for Fast-Charging Lithium-Ion Batteries**

Yuki Yamada, Keizo Furukawa, Keitaro Sodeyama, Keisuke Kikuchi, Makoto Yaegashi, Yoshitaka Tateyama, and Atsuo Yamada

*Journal of the American Chemical Society* **2014** *136* (13), 5039-5046

**45. Enhancing the Specificity of Recombinase-Mediated Genome Engineering through Dimer Interface Redesign**

Thomas Gaj, Shannon J. Sirk, Ryan D. Tingle, Andrew C. Mercer, Mark C. Wallen, and Carlos F. Barbas, III

*Journal of the American Chemical Society* **2014** *136* (13), 5047-5056

**46. Facile Bottom-Up Synthesis of Coronene-based 3-Fold Symmetrical and Highly Substituted Nanographenes from Simple Aromatics**

Qiang Zhang, Hanqing Peng, Guishan Zhang, Qiongqiong Lu, Jian Chang, Yeye Dong, Xianying Shi, and Junfa Wei

*Journal of the American Chemical Society* **2014** *136* (13), 5057-5064

**47. Two Tetra-CdII-Substituted Vanadogermanate Frameworks**

Jian Zhou, Jun-Wei Zhao, Qi Wei, Jie Zhang, and Guo-Yu Yang

*Journal of the American Chemical Society* **2014** *136* (13), 5065-5071

**48. Putting the Squeeze on CH<sub>4</sub> and CO<sub>2</sub> through Control over Interpenetration in Diamondoid Nets**

Sameh K. Elsaidi, Mona H. Mohamed, Lukasz Wojtas, Anjana Chantrapally, Tony Pham, Brian Space, Jagadese J. Vittal, and Michael J. Zaworotko

*Journal of the American Chemical Society* **2014** *136* (13), 5072-5077

**49. An Overlooked yet Ubiquitous Fluoride Congenitor: Binding Bifluoride in Triazolophanes Using Computer-Aided Design**

Raghunath O. Ramabhadran, Yun Liu, Yuran Hua, Moira Ciardi, Amar H. Flood, and Krishnan Raghavachari

*Journal of the American Chemical Society* **2014** *136* (13), 5078-5089

**50. Low Dose Detection of  $\gamma$  Radiation via Solvent Assisted Fluorescence Quenching**

Ji-Min Han, Miao Xu, Brian Wang, Na Wu, Xiaomei Yang, Haori Yang, Bill J. Salter, and Ling Zang

*Journal of the American Chemical Society* **2014** *136* (13), 5090-5096

**51. Capturing the Hemoglobin Allosteric Transition in a Single Crystal Form**

Naoya Shibayama, Kanako Sugiyama, Jeremy R. H. Tame, and Sam-Yong Park

*Journal of the American Chemical Society* **2014** *136* (13), 5097-5105

**52. Seeded Growth of Metal-Doped Plasmonic Oxide Heterodimer Nanocrystals and Their Chemical Transformation**

Xingchen Ye, Danielle Reifsnyder Hickey, Jiayang Fei, Benjamin T. Diroll, Taejong Paik, Jun Chen, and Christopher B. Murray

*Journal of the American Chemical Society* **2014** *136* (13), 5106-5115

**53. Selective Catalytic Oxidative-Dehydrogenation of Carboxylic Acids—Acrylate and Crotonate Formation at the Au/TiO<sub>2</sub> Interface**

Monica McEntee, Wenjie Tang, Matthew Neurock, and John T. Yates, Jr  
*Journal of the American Chemical Society* **2014** *136* (13), 5116-5120

**54. Hole Transfer Dynamics from a CdSe/CdS Quantum Rod to a Tethered Ferrocene Derivative**

Kartick Tarafder, Yogesh Surendranath, Jacob H. Olshansky, A. Paul Alivisatos, and Lin-Wang Wang  
*Journal of the American Chemical Society* **2014** *136* (13), 5121-5131

**55. Tellurium-Containing Polymer Micelles: Competitive-Ligand-Regulated Coordination Responsive Systems**

Wei Cao, Yuwei Gu, Myriam Meineck, Tianyu Li, and Huaping Xu  
*Journal of the American Chemical Society* **2014** *136* (13), 5132-5137

**56. Unusual Doping of Donor–Acceptor-Type Conjugated Polymers Using Lewis Acids**

Elena Poverenov, Natalia Zamoshchik, Asit Patra, Yonatan Ridelman, and Michael Bendikov  
*Journal of the American Chemical Society* **2014** *136* (13), 5138-5149

**57. Prediction of Experimentally Unavailable Product Branching Ratios for Biofuel Combustion: The Role of Anharmonicity in the Reaction of Isobutanol with OH**

Jingjing Zheng, Rubén Meana-Pañeda, and Donald G. Truhlar  
*Journal of the American Chemical Society* **2014** *136* (13), 5150-5160

**58. 1,4-Bis(trimethylsilyl)-1,4-diaza-2,5-cyclohexadienes as Strong Salt-Free Reductants for Generating Low-Valent Early Transition Metals with Electron-Donating Ligands**

Teruhiko Saito, Haruka Nishiyama, Hiromasa Tanahashi, Kento Kawakita, Hayato Tsurugi, and Kazushi Mashima  
*Journal of the American Chemical Society* **2014** *136* (13), 5161-5170

**59. Total Synthesis of Halichondrin A, the Missing Member in the Halichondrin Class of Natural Products**

Atsushi Ueda, Akihiko Yamamoto, Daisuke Kato, and Yoshito Kishi  
*Journal of the American Chemical Society* **2014** *136* (13), 5171-5176

**60. Correction to “Temperature Sculpting in Yoctoliter Volumes”**

Joseph E. Reiner, Joseph W. F. Robertson, Daniel L. Burden, Lisa K. Burden, Arvind Balijepalli, and John J. Kasianowicz  
*Journal of the American Chemical Society* **2014** *136* (13), 5177-5177

**61. Correction to “Discovery of O-GlcNAc Transferase Inhibitors”**

Benjamin J. Gross, Brian C. Kraybill, and Suzanne Walker  
*Journal of the American Chemical Society* **2014** *136* (13), 5178-5178