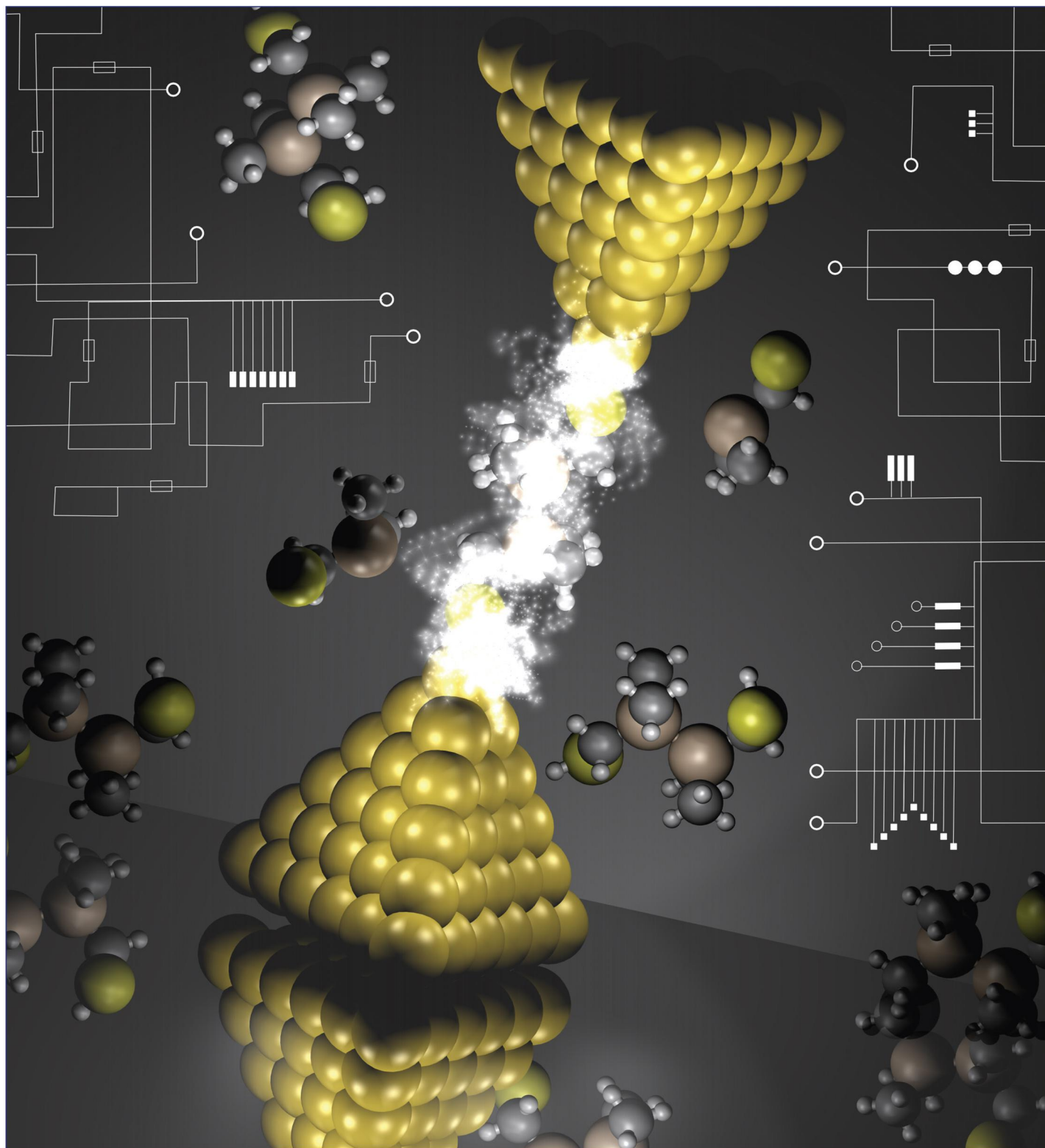


April 22, 2015  
Volume 137  
Number 15  
pubs.acs.org/JACS

# 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* **2015** 137 (15), 4875-4875

DOI: 10.1021/jacs.5b03817

### 2. **Palladium-Catalyzed Dynamic Kinetic Asymmetric Transformation of Racemic Biaryls: Axial-to-Central Chirality Transfer**

Liu Yang, Huayu Zheng, Lei Luo, Jiang Nan, Jingjing Liu, Yaoyu Wang, and Xinjun Luan

*Journal of the American Chemical Society* **2015** 137 (15), 4876-4879

DOI: 10.1021/jacs.5b01285

### 3. **Asymmetric Dearomatization of Naphthols via a Rh-Catalyzed C(sp<sup>2</sup>)-H Functionalization/Annulation Reaction**

Jun Zheng, Shao-Bo Wang, Chao Zheng, and Shu-Li You

*Journal of the American Chemical Society* **2015** 137 (15), 4880-4883

DOI: 10.1021/jacs.5b01707

### 4. **SNAP-Tag-Reactive Lipid Anchors Enable Targeted and Spatiotemporally Controlled Localization of Proteins to Phospholipid Membranes**

Andrew K. Rudd, Joan M. Valls Cuevas, and Neal K. Devaraj

*Journal of the American Chemical Society* **2015** 137 (15), 4884-4887

DOI: 10.1021/jacs.5b00040

### 5. **Tunable Luminescence of Bithiophene-Based Flexible Lewis Pairs**

Yang Cao, Jeffrey K. Nagle, Michael O. Wolf, and Brian O. Patrick

*Journal of the American Chemical Society* **2015** 137 (15), 4888-4891

DOI: 10.1021/jacs.5b02078

### 6. **Enzyme-Artificial Enzyme Interactions as a Means for Discriminating among Structurally Similar Isozymes**

Karuthapandi Selvakumar, Leila Motiei, and David Margulies

*Journal of the American Chemical Society* **2015** 137 (15), 4892-4895

DOI: 10.1021/jacs.5b02496

### 7. **Nickel-Catalyzed Cross-Coupling of Photoredox-Generated Radicals: Uncovering a General Manifold for Stereoconvergence in Nickel-Catalyzed Cross-Couplings**

Osvaldo Gutierrez, John C. Tellis, David N. Primer, Gary A. Molander, and Marisa C. Kozlowski

*Journal of the American Chemical Society* **2015** 137 (15), 4896-4899

DOI: 10.1021/ja513079r

### 8. **A Nonenzymatic Hairpin DNA Cascade Reaction Provides High Signal Gain of mRNA Imaging inside Live Cells**

Cuichen Wu, Sena Cansiz, Liqin Zhang, I-Ting Teng, Liping Qiu, Juan Li, Yuan Liu, Cuisong Zhou, Rong Hu, Tao Zhang, Cheng Cui, Liang Cui, and Weihong Tan

*Journal of the American Chemical Society* **2015** 137 (15), 4900-4903

DOI: 10.1021/jacs.5b00542

### 9. **Synthesis of Surface Covalent Organic Frameworks via Dimerization and Cyclotrimerization of Acetyls**

Biao Yang, Jonas Björk, Haiping Lin, Xiaoqing Zhang, Haiming Zhang, Youyong Li, Jian Fan, Qing Li, and Lifeng Chi

*Journal of the American Chemical Society* **2015** 137 (15), 4904-4907

DOI: 10.1021/jacs.5b00774

**10. Selective Cyclization of Arylnitrones to Indolines under External Oxidant-Free Conditions: Dual Role of Rh(III) Catalyst in the C–H Activation and Oxygen Atom Transfer**

Ramesh B. Dateer and Sukbok Chang

*Journal of the American Chemical Society* **2015** 137 (15), 4908-4911

DOI: 10.1021/jacs.5b01065

**11. Synthesis and Potent Antimalarial Activity of Kalihinol B**

Mary Elisabeth Daub, Jacques Prudhomme, Karine Le Roch, and Christopher D. Vanderwal

*Journal of the American Chemical Society* **2015** 137 (15), 4912-4915

DOI: 10.1021/jacs.5b01152

**12. Organoborane Catalyzed Regioselective 1,4-Hydroboration of Pyridines**

Xiaoting Fan, Junhao Zheng, Zhen Hua Li, and Huadong Wang

*Journal of the American Chemical Society* **2015** 137 (15), 4916-4919

DOI: 10.1021/jacs.5b03147

**13. Flexible Solid-State Supercapacitor Based on a Metal–Organic Framework Interwoven by Electrochemically-Deposited PANI**

Lu Wang, Xiao Feng, Lantian Ren, Qiuhan Piao, Jieqiang Zhong, Yuanbo Wang, Haiwei Li, Yifa Chen, and Bo Wang

*Journal of the American Chemical Society* **2015** 137 (15), 4920-4923

DOI: 10.1021/jacs.5b01613

**14. Direct Aerobic Carbonylation of C(sp<sup>2</sup>)–H and C(sp<sup>3</sup>)–H Bonds through Ni/Cu Synergistic Catalysis with DMF as the Carbonyl Source**

Xuesong Wu, Yan Zhao, and Haibo Ge

*Journal of the American Chemical Society* **2015** 137 (15), 4924-4927

DOI: 10.1021/jacs.5b01671

**15. Highly Efficient Red-Light Emission in An Organic–Inorganic Hybrid Ferroelectric: (Pyrrolidinium)MnCl<sub>3</sub>**

Yi Zhang, Wei-Qiang Liao, Da-Wei Fu, Heng-Yun Ye, Zhong-Ning Chen, and Ren-Gen Xiong

*Journal of the American Chemical Society* **2015** 137 (15), 4928-4931

DOI: 10.1021/jacs.5b01680

**16. Z-Selective Olefin Synthesis via Iron-Catalyzed Reductive Coupling of Alkyl Halides with Terminal Arylalkynes**

Chi Wai Cheung, Fedor E. Zhurkin, and Xile Hu

*Journal of the American Chemical Society* **2015** 137 (15), 4932-4935

DOI: 10.1021/jacs.5b01784

**17. Enantioselective Arylative Dearomatization of Indoles via Pd-Catalyzed Intramolecular Reductive Heck Reactions**

Chong Shen, Ren-Rong Liu, Ren-Jie Fan, Ying-Long Li, Teng-Fei Xu, Jian-Rong Gao, and Yi-Xia Jia

*Journal of the American Chemical Society* **2015** 137 (15), 4936-4939

DOI: 10.1021/jacs.5b01705

**18. Decarboxylation of Fatty Acids to Terminal Alkenes by Cytochrome P450 Compound I**

Job L. Grant, Chun H. Hsieh, and Thomas M. Makris

*Journal of the American Chemical Society* **2015** 137 (15), 4940-4943

DOI: 10.1021/jacs.5b01965

**19. Dynamic Kinetic Asymmetric Amination of Alcohols: From A Mixture of Four Isomers to Diastereo- and Enantiopure  $\alpha$ -Branched Amines**

Zi-Qiang Rong, Yao Zhang, Raymond Hong Bing Chua, Hui-Jie Pan, and Yu Zhao

*Journal of the American Chemical Society* **2015** 137 (15), 4944-4947

DOI: 10.1021/jacs.5b02212

**20. Biotin[6]juril Esters: Chloride-Selective Transmembrane Anion Carriers Employing C—H $\cdots$ Anion Interactions**

Micke Lisbjerg, Hennie Valkenier, Bo M. Jessen, Hana Al-Kerdi, Anthony P. Davis, and Michael Pittelkow

*Journal of the American Chemical Society* **2015** 137 (15), 4948-4951

DOI: 10.1021/jacs.5b02306

**21. Photochromic Phenoxyl-Imidazolyl Radical Complexes with Decoloration Rates from Tens of Nanoseconds to Seconds**

Hiroaki Yamashita, Takahiro Ikezawa, Yoichi Kobayashi, and Jiro Abe

*Journal of the American Chemical Society* **2015** 137 (15), 4952-4955

DOI: 10.1021/jacs.5b02353

**22. Heavily n-Dopable  $\pi$ -Conjugated Redox Polymers with Ultrafast Energy Storage Capability**

Yanliang Liang, Zhihua Chen, Yan Jing, Yaoguang Rong, Antonio Facchetti, and Yan Yao

*Journal of the American Chemical Society* **2015** 137 (15), 4956-4959

DOI: 10.1021/jacs.5b02290

**23. Aqueous Eull-Containing Complex with Bright Yellow Luminescence**

Akhila N. W. Kuda-Wedagedara, Chengcheng Wang, Philip D. Martin, and Matthew J. Allen

*Journal of the American Chemical Society* **2015** 137 (15), 4960-4963

DOI: 10.1021/jacs.5b02506

**24. Mechanistic Investigation of the Radical S-Adenosyl-L-methionine Enzyme DesII Using Fluorinated Analogues**

Geng-Min Lin, Sei-Hyun Choi, Mark W. Ruzsyczky, and Hung-wen Liu

*Journal of the American Chemical Society* **2015** 137 (15), 4964-4967

DOI: 10.1021/jacs.5b02545

**25. A Global and Local Desymmetrization Approach to the Synthesis of Steroidal Alkaloids: Stereocontrolled Total Synthesis of Paspaline**

Robert J. Sharpe and Jeffrey S. Johnson

*Journal of the American Chemical Society* **2015** 137 (15), 4968-4971

DOI: 10.1021/jacs.5b02631

**26. In Situ Imaging of On-Surface, Solvent-Free Molecular Single-Crystal Growth**

Guangfeng Liu, Jie Liu, Hao Sun, Xiaoxin Zheng, Yang Liu, Xiaomin Li, He Qi, Xuedong Bai,

Kenneth A. Jackson, and Xutang Tao

*Journal of the American Chemical Society* **2015** 137 (15), 4972-4975

DOI: 10.1021/jacs.5b02637

**27. Catalytic Mesoporous Janus Nanomotors for Active Cargo Delivery**

Xing Ma, Kersten Hahn, and Samuel Sanchez

*Journal of the American Chemical Society* **2015** 137 (15), 4976-4979

DOI: 10.1021/jacs.5b02700

**28. Tandem Prenyltransferases Catalyze Isoprenoid Elongation and Complexity Generation in Biosynthesis of Quinolone Alkaloids**

Yi Zou, Zhajun Zhan, Dehai Li, Mancheng Tang, Ralph A. Cacho, Kenji Watanabe, and Yi Tang

*Journal of the American Chemical Society* **2015** 137 (15), 4980-4983

DOI: 10.1021/jacs.5b03022

**29. Modular Degradable Hydrogels Based on Thiol-Reactive Oxanorbornadiene Linkers**

Cody J. Higginson, Seung Yeon Kim, Miguel Peláez-Fernández, Alberto Fernández-Nieves, and M.G. Finn

*Journal of the American Chemical Society* **2015** 137 (15), 4984-4987

DOI: 10.1021/jacs.5b02708

**30. Site-Specific Analysis of Protein Hydration Based on Unnatural Amino Acid Fluorescence**

Mariana Amaro, Jan Brezovský, Silvia Kováčová, Jan Sýkora, David Bednář, Václav Němec,

Veronika Lišková, Nagendra Prasad Kurumbang, Koen Beerens, Radka Chaloupková, Kamil Paruch, Martin Hof, and Jiří Damborský

*Journal of the American Chemical Society* **2015** 137 (15), 4988-4992

DOI: 10.1021/jacs.5b01681

- 31. Electronic Structure of Ni<sub>2</sub>E<sub>2</sub> Complexes (E = S, Se, Te) and a Global Analysis of M<sub>2</sub>E<sub>2</sub> Compounds: A Case for Quantized E<sub>2n</sub>- Oxidation Levels with n = 2, 3, or 4**  
Shu A. Yao, Vlad Martin-Diaconescu, Ivan Infante, Kyle M. Lancaster, Andreas W. Götz, Serena DeBeer, and John F. Berry  
*Journal of the American Chemical Society* **2015** 137 (15), 4993-5011  
DOI: 10.1021/ja511607j
- 32. Group Exchange between Ketones and Carboxylic Acids through Directing Group Assisted Rh-Catalyzed Reorganization of Carbon Skeletons**  
Zhi-Quan Lei, Fei Pan, Hu Li, Yang Li, Xi-Sha Zhang, Kang Chen, Xin Wang, Yu-Xue Li, Jian Sun, and Zhang-Jie Shi  
*Journal of the American Chemical Society* **2015** 137 (15), 5012-5020  
DOI: 10.1021/ja512003d
- 33. Efficient Conversion of CO<sub>2</sub> to CO Using Tin and Other Inexpensive and Easily Prepared Post-Transition Metal Catalysts**  
Jonnathan Medina-Ramos, Rachel C. Pupillo, Thomas P. Keane, John L. DiMeglio, and Joel Rosenthal  
*Journal of the American Chemical Society* **2015** 137 (15), 5021-5027  
DOI: 10.1021/ja5121088
- 34. Electric Field Breakdown in Single Molecule Junctions**  
Haixing Li, Timothy A. Su, Vivian Zhang, Michael L. Steigerwald, Colin Nuckolls, and Latha Venkataraman  
*Journal of the American Chemical Society* **2015** 137 (15), 5028-5033  
DOI: 10.1021/ja512523r
- 35. Tunable Rare Earth fcu-MOF Platform: Access to Adsorption Kinetics Driven Gas/Vapor Separations via Pore Size Contraction**  
Dong-Xu Xue, Youssef Belmabkhout, Osama Shekhah, Hao Jiang, Karim Adil, Amy J. Cairns, and Mohamed Eddaoudi  
*Journal of the American Chemical Society* **2015** 137 (15), 5034-5040  
DOI: 10.1021/ja5131403
- 36. Elucidating the Role of Site-Specific Nitration of  $\alpha$ -Synuclein in the Pathogenesis of Parkinson's Disease via Protein Semisynthesis and Mutagenesis**  
Ritwik Burai, Nadine Ait-Bouziad, Anass Chiki, and Hilal A. Lashuel  
*Journal of the American Chemical Society* **2015** 137 (15), 5041-5052  
DOI: 10.1021/ja5131726
- 37. Surface Modification of CoO<sub>x</sub> Loaded BiVO<sub>4</sub> Photoanodes with Ultrathin p-Type NiO Layers for Improved Solar Water Oxidation**  
Miao Zhong, Takashi Hisatomi, Yongbo Kuang, Jiao Zhao, Min Liu, Akihito Iwase, Qingxin Jia, Hiroshi Nishiyama, Tsutomu Minegishi, Mamiko Nakabayashi, Naoya Shibata, Ryo Niishiro, Chisato Katayama, Hidetaka Shibano, Masao Katayama, Akihiko Kudo, Taro Yamada, and Kazunari Domen  
*Journal of the American Chemical Society* **2015** 137 (15), 5053-5060  
DOI: 10.1021/jacs.5b00256
- 38. Selective Synthesis of cis-trans-cis Cyclic Tetrasiloxanes and the Formation of Their Two-Dimensional Layered Aggregates**  
Shota Kinoshita, Seiji Watase, Kimihiro Matsukawa, and Yoshiro Kaneko  
*Journal of the American Chemical Society* **2015** 137 (15), 5061-5065  
DOI: 10.1021/jacs.5b00319
- 39. Autonomic Molecular Transport by Polymer Films Containing Programmed Chemical Potential Gradients**  
Chunjie Zhang, Amit Sitt, Hyung-Jun Koo, Kristopher V. Waynant, Henry Hess, Brian D. Pate, and Paul V. Braun  
*Journal of the American Chemical Society* **2015** 137 (15), 5066-5073  
DOI: 10.1021/jacs.5b00240

- 40. Energetic–Energetic Cocrystals of Diacetone Diperoxide (DADP): Dramatic and Divergent Sensitivity Modifications via Cocrystallization**  
Kira B. Landenberger, Onas Bolton, and Adam J. Matzger  
*Journal of the American Chemical Society* **2015** *137* (15), 5074-5079  
DOI: 10.1021/jacs.5b00661
- 41. Solution-Phase Self-Assembly of Complementary Halogen Bonding Polymers**  
Alan Vanderkooy and Mark S. Taylor  
*Journal of the American Chemical Society* **2015** *137* (15), 5080-5086  
DOI: 10.1021/jacs.5b00754
- 42. Optoelectronic Studies of Methylammonium Lead Iodide Perovskite Solar Cells with Mesoporous TiO<sub>2</sub>: Separation of Electronic and Chemical Charge Storage, Understanding Two Recombination Lifetimes, and the Evolution of Band Offsets during J–V Hysteresis**  
Brian C. O'Regan, Piers R. F. Barnes, Xiaoe Li, Chunhung Law, Emilio Palomares, and Jose M. Marin-Beloqui  
*Journal of the American Chemical Society* **2015** *137* (15), 5087-5099  
DOI: 10.1021/jacs.5b00761
- 43. Codoping in SnTe: Enhancement of Thermoelectric Performance through Synergy of Resonance Levels and Band Convergence**  
Gangjian Tan, Fengyuan Shi, Shiqiang Hao, Hang Chi, Li-Dong Zhao, Ctirad Uher, Chris Wolverton, Vinayak P. Dravid, and Mercouri G. Kanatzidis  
*Journal of the American Chemical Society* **2015** *137* (15), 5100-5112  
DOI: 10.1021/jacs.5b00837
- 44. Charge Transport across DNA-Based Three-Way Junctions**  
Ryan M. Young, Arunoday P. N. Singh, Arun K. Thazhathveetil, Vincent Y. Cho, Yuqi Zhang, Nicolas Renaud, Ferdinand C. Grozema, David N. Beratan, Mark A. Ratner, George C. Schatz, Yuri A. Berlin, Frederick D. Lewis, and Michael R. Wasielewski  
*Journal of the American Chemical Society* **2015** *137* (15), 5113-5122  
DOI: 10.1021/jacs.5b00931
- 45. Dopant-Controlled Selenization in Pd Nanocrystals: The Triggered Kirkendall Effect**  
Amit K. Guria, Gyanaranjan Prusty, Biplab K. Patra, and Narayan Pradhan  
*Journal of the American Chemical Society* **2015** *137* (15), 5123-5129  
DOI: 10.1021/jacs.5b01103
- 46. The Nature of Singlet Exciton Fission in Carotenoid Aggregates**  
Andrew J. Musser, Margherita Maiuri, Daniele Brida, Giulio Cerullo, Richard H. Friend, and Jenny Clark  
*Journal of the American Chemical Society* **2015** *137* (15), 5130-5139  
DOI: 10.1021/jacs.5b01130
- 47. Product Formation by the Promiscuous Lanthipeptide Synthetase ProcM is under Kinetic Control**  
Yi Yu, Subha Mukherjee, and Wilfred A. van der Donk  
*Journal of the American Chemical Society* **2015** *137* (15), 5140-5148  
DOI: 10.1021/jacs.5b01409
- 48. Label-Free Surface-Enhanced Raman Spectroscopy Detection of DNA with Single-Base Sensitivity**  
Li-Jia Xu, Zhi-Chao Lei, Jiuxing Li, Cheng Zong, Chaoyong James Yang, and Bin Ren  
*Journal of the American Chemical Society* **2015** *137* (15), 5149-5154  
DOI: 10.1021/jacs.5b01426
- 49. Electronic and Spectroscopic Properties of Avobenzene Derivatives Attached to Mo<sub>2</sub> Quadruple Bonds: Suppression of the Photochemical Enol-to-Keto Transformation**  
Malcolm H. Chisholm, Christopher B. Durr, Terry L. Gustafson, William T. Kender, Thomas F. Spilker, and Philip J. Young

*Journal of the American Chemical Society* **2015** 137 (15), 5155-5162

DOI: 10.1021/jacs.5b01495

**50. Visualizing Unresolved Scalar Couplings by Real-Time J-Upscaled NMR**

Simon Glanzer and Klaus Zangger

*Journal of the American Chemical Society* **2015** 137 (15), 5163-5169

DOI: 10.1021/jacs.5b01687

**51. Enantioselective Lewis Acid Catalysis in Intramolecular [2 + 2] Photocycloaddition Reactions: A Mechanistic Comparison between Representative Coumarin and Enone Substrates**

Richard Brimiouille, Andreas Bauer, and Thorsten Bach

*Journal of the American Chemical Society* **2015** 137 (15), 5170-5176

DOI: 10.1021/jacs.5b01740

**52. Hückel Theory and Optical Activity**

Veronica L. Murphy and Bart Kahr

*Journal of the American Chemical Society* **2015** 137 (15), 5177-5183

DOI: 10.1021/jacs.5b01763

**53. Hierarchically Structured Hematite Architectures Achieved by Growth in a Silica Hydrogel**

Emily Asenath-Smith, Robert Hovden, Lena F. Kourkoutis, and Lara A. Estroff

*Journal of the American Chemical Society* **2015** 137 (15), 5184-5192

DOI: 10.1021/jacs.5b01697

**54. para-C–H Borylation of Benzene Derivatives by a Bulky Iridium Catalyst**

Yutaro Saito, Yasutomo Segawa, and Kenichiro Itami

*Journal of the American Chemical Society* **2015** 137 (15), 5193-5198

DOI: 10.1021/jacs.5b02052

**55. Spontaneous Resolution of Julia-Kocienski Intermediates Facilitates Phase Separation to Produce Z- and E-Monofluoroalkenes**

Yanchuan Zhao, Fanzhou Jiang, and Jinbo Hu

*Journal of the American Chemical Society* **2015** 137 (15), 5199-5203

DOI: 10.1021/jacs.5b02112

**56. Highly Efficient Heterogeneous Hydroformylation over Rh-Metalated Porous Organic Polymers: Synergistic Effect of High Ligand Concentration and Flexible Framework**

Qi Sun, Zhifeng Dai, Xiaolong Liu, Na Sheng, Feng Deng, Xiangju Meng, and Feng-Shou Xiao

*Journal of the American Chemical Society* **2015** 137 (15), 5204-5209

DOI: 10.1021/jacs.5b02122

**57. Increasing 3D Supramolecular Order by Decreasing Molecular Order. A Comparative Study of Helical Assemblies of Dendronized Nonchlorinated and Tetrachlorinated Perylene Bisimides**

Benjamin E. Partridge, Pawaret Leowanawat, Emad Aqad, Mohammad R. Imam, Hao-Jan Sun, Mihai Peterca, Paul A. Heiney, Robert Graf, Hans W. Spiess, Xiangbing Zeng, Goran Ungar, and Virgil Percec

*Journal of the American Chemical Society* **2015** 137 (15), 5210-5224

DOI: 10.1021/jacs.5b02147

**58. Viewing Human DNA Polymerase  $\beta$  Faithfully and Unfaithfully Bypass an Oxidative Lesion by Time-Dependent Crystallography**

Rajan Vyas, Andrew J. Reed, E. John Tokarsky, and Zucui Suo

*Journal of the American Chemical Society* **2015** 137 (15), 5225-5230

DOI: 10.1021/jacs.5b02109

**59. Confinement of Single Polysilane Chains in Coordination Nanospaces**

Takashi Kitao, Silvia Bracco, Angiolina Comotti, Piero Sozzani, Masanobu Naito, Shu Seki, Takashi Uemura, and Susumu Kitagawa

*Journal of the American Chemical Society* **2015** 137 (15), 5231-5238