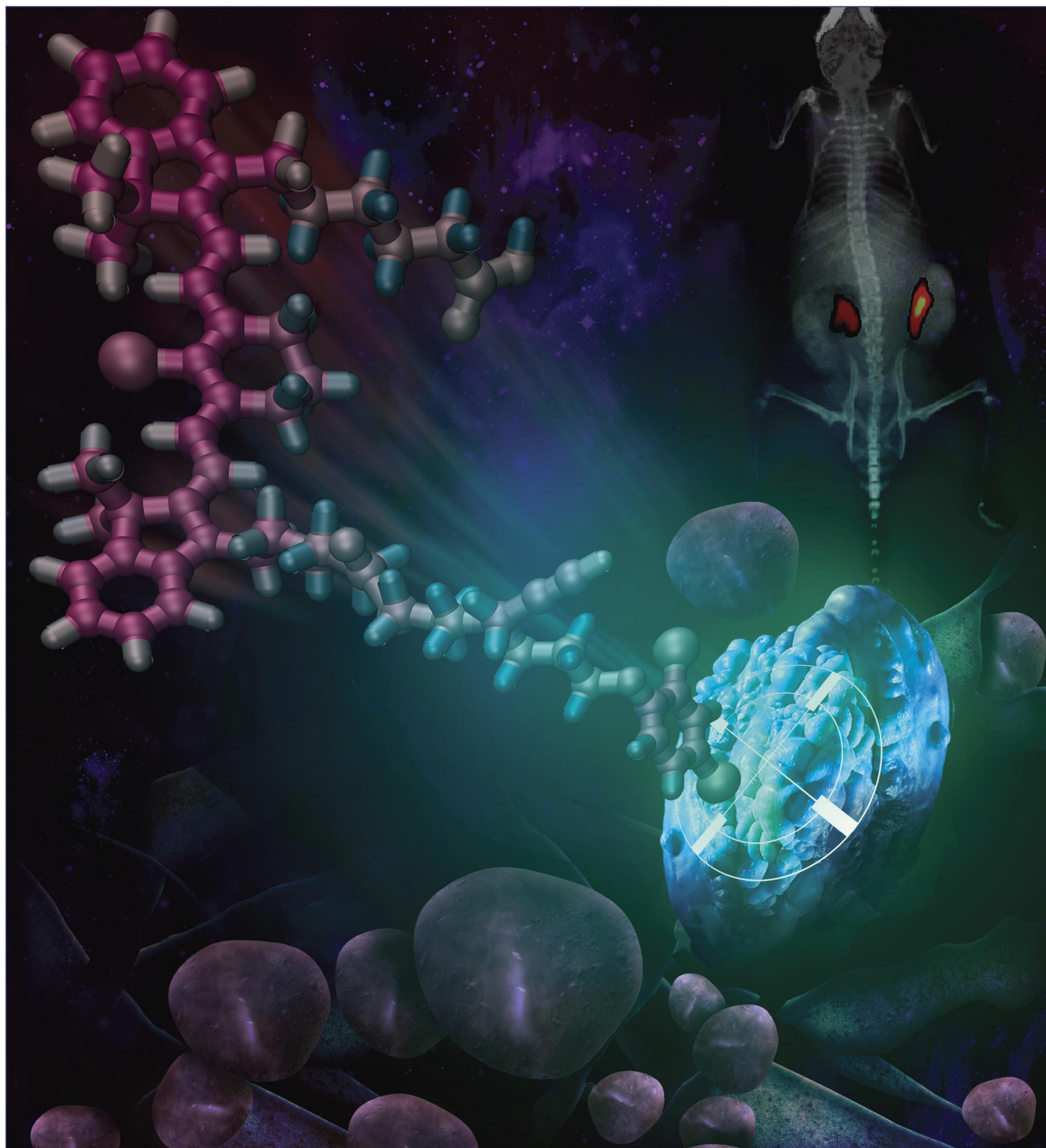


February 18, 2015  
Volume 137  
Number 6  
pubs.acs.org/JACS

# 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 (6), 2139-2139

DOI: 10.1021/jacs.5b01294

**2. Stimuli-Responsive Nanomaterials for Biomedical Applications**

Angela P. Blum, Jacquelin K. Kammeyer, Anthony M. Rush, Cassandra E. Callmann, Michael E. Hahn, and Nathan C. Gianneschi

*Journal of the American Chemical Society* **2015** 137 (6), 2140-2154

DOI: 10.1021/ja510147n

**3. Light Activation of Protein Splicing with a Photocaged Fast Intein**

Wei Ren, Ao Ji, and Hui-wang Ai

*Journal of the American Chemical Society* **2015** 137 (6), 2155-2158

DOI: 10.1021/ja508597d

**4. Foldecture as a Core Material with Anisotropic Surface Characteristics**

Sung Hyun Yoo, Taedaehyeong Eom, Sunbum Kwon, Jintaek Gong, Jin Kim, Sung June Cho, Russell W. Driver, Yunho Lee, Hyungjun Kim, and Hee-Seung Lee

*Journal of the American Chemical Society* **2015** 137 (6), 2159-2162

DOI: 10.1021/ja510840v

**5. Reversible Swarming and Separation of Self-Propelled Chemically Powered Nanomotors under Acoustic Fields**

Tailin Xu, Fernando Soto, Wei Gao, Renfeng Dong, Victor Garcia-Gradilla, Ernesto Magaña, Xueji Zhang, and Joseph Wang

*Journal of the American Chemical Society* **2015** 137 (6), 2163-2166

DOI: 10.1021/ja511012v

**6. Crystalline Co-Assemblies of Functional Fullerenes in Methanol with Enhanced Charge Transport**

Jianyuan Zhang, Chang-Zhi Li, Spencer T. Williams, Shengqiang Liu, Ting Zhao, and Alex K.-Y. Jen

*Journal of the American Chemical Society* **2015** 137 (6), 2167-2170

DOI: 10.1021/ja511415n

**7. Controlling Lipid Micelle Stability Using Oligonucleotide Headgroups**

Samantha E. Wilner, Samuel E. Sparks, David Cowburn, Mark E. Girvin, and Matthew Levy

*Journal of the American Chemical Society* **2015** 137 (6), 2171-2174

DOI: 10.1021/ja512012m

**8. Thermodynamic Evaluation of Aromatic CH/ $\pi$  Interactions and Rotational Entropy in a Molecular Rotor**

Salvador Pérez-Estrada, Braulio Rodríguez-Molina, Leilei Xiao, Rosa Santillan, Gonzalo Jiménez-Osés, K. N. Houk, and Miguel A. Garcia-Garibay

*Journal of the American Chemical Society* **2015** 137 (6), 2175-2178

DOI: 10.1021/ja512053t

**9. Dissolution and Liquid Crystals Phase of 2D Polymeric Carbon Nitride**

Zhixin Zhou, Jianhai Wang, Jiachao Yu, Yanfei Shen, Ying Li, Anran Liu, Songqin Liu, and Yuanjian Zhang

*Journal of the American Chemical Society* **2015** 137 (6), 2179-2182

DOI: 10.1021/ja512179x

**10. Nylon-3 Polymers Active against Drug-Resistant *Candida albicans* Biofilms**

Runhui Liu, Xinyu Chen, Shaun P. Falk, Kristyn S. Masters, Bernard Weisblum, and Samuel H. Gellman

*Journal of the American Chemical Society* **2015** 137 (6), 2183-2186

DOI: 10.1021/ja512567y

- 11. Ligand Cooperation in the Formal Hydrogenation of N<sub>2</sub>O Using a PCsp<sup>2</sup>P Iridium Pincer Complex**  
Lauren E. Doyle, Warren E. Piers, and Javier Borau-Garcia  
*Journal of the American Chemical Society* **2015** 137 (6), 2187-2190  
DOI: 10.1021/ja512602m
- 12. Metalation of a Thiocatechol-Functionalized Zr(IV)-Based Metal–Organic Framework for Selective C–H Functionalization**  
Honghan Fei and Seth M. Cohen  
*Journal of the American Chemical Society* **2015** 137 (6), 2191-2194  
DOI: 10.1021/ja5126885
- 13. Single-Electron Transmetalation: An Enabling Technology for Secondary Alkylboron Cross-Coupling**  
David N. Primer, Idris Karakaya, John C. Tellis, and Gary A. Molander  
*Journal of the American Chemical Society* **2015** 137 (6), 2195-2198  
DOI: 10.1021/ja512946e
- 14. Mesoscopic Constructs of Ordered and Oriented Metal–Organic Frameworks on Plasmonic Silver Nanocrystals**  
Yingbo Zhao, Nikolay Kornienko, Zheng Liu, Chenhui Zhu, Shunsuke Asahina, Tsung-Rong Kuo, Wei Bao, Chenlu Xie, Alexander Hexemer, Osamu Terasaki, Peidong Yang, and Omar M. Yaghi  
*Journal of the American Chemical Society* **2015** 137 (6), 2199-2202  
DOI: 10.1021/ja512951e
- 15. Crystallization-Driven Solution Self-Assembly of Block Copolymers with a Photocleavable Junction**  
Yang Gao, Huibin Qiu, Hang Zhou, Xiaoyu Li, Robert Harniman, Mitchell A. Winnik, and Ian Manners  
*Journal of the American Chemical Society* **2015** 137 (6), 2203-2206  
DOI: 10.1021/ja512968b
- 16. Beryllium-Free Rb<sub>3</sub>Al<sub>3</sub>B<sub>3</sub>O<sub>10</sub>F with Reinforced Interlayer Bonding as a Deep-Ultraviolet Nonlinear Optical Crystal**  
Sangen Zhao, Pifu Gong, Siyang Luo, Sijie Liu, Lina Li, Muhammad Adnan Asghar, Tariq Khan, Maochun Hong, Zheshuai Lin, and Junhua Luo  
*Journal of the American Chemical Society* **2015** 137 (6), 2207-2210  
DOI: 10.1021/ja5128314
- 17. Solvent-Induced Oriented Attachment Growth of Air-Stable Phase-Pure Pyrite FeS<sub>2</sub> Nanocrystals**  
Bin-Bin Yu, Xing Zhang, Yan Jiang, Jie Liu, Lin Gu, Jin-Song Hu, and Li-Jun Wan  
*Journal of the American Chemical Society* **2015** 137 (6), 2211-2214  
DOI: 10.1021/ja512979y
- 18. Electrochemical (De)Lithiation of 1D Sulfur Chains in Li–S Batteries: A Model System Study**  
Chun-Peng Yang, Ya-Xia Yin, Yu-Guo Guo, and Li-Jun Wan  
*Journal of the American Chemical Society* **2015** 137 (6), 2215-2218  
DOI: 10.1021/ja513009v
- 19. Cyclic 2,12-Porphyrinylene Nanorings as a Porphyrin Analogue of Cycloparaphenylenes**  
Hua-Wei Jiang, Takayuki Tanaka, Hirotaka Mori, Kyu Hyung Park, Dongho Kim, and Atsuhiko Osuka  
*Journal of the American Chemical Society* **2015** 137 (6), 2219-2222  
DOI: 10.1021/ja513102m
- 20. Mimic of the Green Fluorescent Protein  $\beta$ -Barrel: Photophysics and Dynamics of Confined Chromophores Defined by a Rigid Porous Scaffold**  
Derek E. Williams, Ekaterina A. Dolgoplova, Perry J. Pellechia, Andrei Palukoshka, Thomas J. Wilson, Rui Tan, Josef M. Maier, Andrew B. Greytak, Mark D. Smith, Jeanette A. Krause, and Natalia B. Shustova  
*Journal of the American Chemical Society* **2015** 137 (6), 2223-2226  
DOI: 10.1021/ja5131269
- 21. Photoelectrochemical Oxidation of Water Using BaTaO<sub>2</sub>N Photoanodes Prepared by Particle Transfer Method**  
Koichiro Ueda, Tsutomu Minegishi, Justin Clune, Mamiko Nakabayashi, Takashi Hisatomi, Hiroshi Nishiyama, Masao Katayama, Naoya Shibata, Jun Kubota, Taro Yamada, and Kazunari Domen  
*Journal of the American Chemical Society* **2015** 137 (6), 2227-2230

DOI: 10.1021/ja5131879

**22. High Quantum Efficiencies in Polymer Solar Cells at Energy Losses below 0.6 eV**

Weiwei Li, Koen H. Hendriks, Alice Furlan, Martijn M. Wienk, and René A. J. Janssen

*Journal of the American Chemical Society* **2015** 137 (6), 2231-2234

DOI: 10.1021/ja5131897

**23. New Heterometallic Zirconium Metalloporphyrin Frameworks and Their Heteroatom-Activated High-Surface-Area Carbon Derivatives**

Qipu Lin, Xianhui Bu, Aiguo Kong, Chengyu Mao, Xiang Zhao, Fei Bu, and Pingyun Feng

*Journal of the American Chemical Society* **2015** 137 (6), 2235-2238

DOI: 10.1021/jacs.5b00076

**24. Synthesis of Alternating trans-AB Copolymers through Ring-Opening Metathesis Polymerization Initiated by Molybdenum Alkylidenes**

Hyangsoo Jeong, Jeremy M. John, Richard R. Schrock, and Amir H. Hoveyda

*Journal of the American Chemical Society* **2015** 137 (6), 2239-2242

DOI: 10.1021/jacs.5b00221

**25. Concise Synthesis of Alkaloid (-)-205B**

Nagavaram Narsimha Rao and Jin Kun Cha

*Journal of the American Chemical Society* **2015** 137 (6), 2243-2246

DOI: 10.1021/jacs.5b00243

**26. Organic Solid Solution Composed of Two Structurally Similar Porphyrins for Organic Solar Cells**

Yonggang Zhen, Hideyuki Tanaka, Koji Harano, Satoshi Okada, Yutaka Matsuo, and Eiichi Nakamura

*Journal of the American Chemical Society* **2015** 137 (6), 2247-2252

DOI: 10.1021/ja513045a

**27. Water-Soluble Fe(II)-H<sub>2</sub>O Complex with a Weak O-H Bond Transfers a Hydrogen Atom via an Observable Monomeric Fe(III)-OH**

Lisa M. Brines, Michael K. Coggins, Penny Chau Yan Poon, Santiago Toledo, Werner Kaminsky, Martin L. Kirk, and Julie A. Kovacs

*Journal of the American Chemical Society* **2015** 137 (6), 2253-2264

DOI: 10.1021/ja5068405

**28. Surfactant-Directed Fabrication of Supercrystals from the Assembly of Polyhedral Au-Pd Core-Shell Nanocrystals and Their Electrical and Optical Properties**

Chun-Ya Chiu, Cheng-Kuang Chen, Cheng-Wei Chang, U-Ser Jeng, Chih-Shan Tan, Chih-Wen Yang, Lih-Juann Chen, Ta-Jen Yen, and Michael H. Huang

*Journal of the American Chemical Society* **2015** 137 (6), 2265-2275

DOI: 10.1021/ja509044q

**29. Encapsulation and Covalent Binding of Molecular Payload in Enzymatically Activated Micellar Nanocarriers**

Ido Rosenbaum, Assaf J. Harnoy, Einat Tirosh, Marina Buzhor, Merav Segal, Liat Frid, Rona Shaharabani, Ram Avinery, Roy Beck, and Roey J. Amir

*Journal of the American Chemical Society* **2015** 137 (6), 2276-2284

DOI: 10.1021/ja510085s

**30. Thermally Highly Stable Amorphous Zinc Phosphate Intermediates during the Formation of Zinc Phosphate Hydrate**

Sven Bach, Vinicius R. Celinski, Michael Dietzsch, Martin Panthöfer, Ralf Bienert, Franziska Emmerling, Jörn Schmedt auf der Günne, and Wolfgang Tremel

*Journal of the American Chemical Society* **2015** 137 (6), 2285-2294

DOI: 10.1021/ja5103663

**31. Columnar Liquid-Crystalline Metallomacrocycles**

Shin-ichiro Kawano, Yukari Ishida, and Kentaro Tanaka

*Journal of the American Chemical Society* **2015** 137 (6), 2295-2302

DOI: 10.1021/ja510585u

**32. Organocatalytic Enantioselective Direct Additions of Aldehydes to 4-Vinylpyridines and Electron-Deficient Vinylarenes and Their Synthetic Applications**

Sinan Wang, Xiangmin Li, Hongwei Liu, Li Xu, Jinchen Zhuang, Jian Li, Hao Li, and Wei Wang

*Journal of the American Chemical Society* **2015** 137 (6), 2303-2310

DOI: 10.1021/ja511143b

- 33. Two-Dimensional Mineral [Pb<sub>2</sub>BiS<sub>3</sub>][AuTe<sub>2</sub>]: High-Mobility Charge Carriers in Single-Atom-Thick Layers**  
Lei Fang, Jino Im, Constantinos C. Stoumpos, Fengyuan Shi, Vinayak Dravid, Maxime Leroux, Arthur J. Freeman, Wai-Kwong Kwok, Duck Young Chung, and Mercouri Kanatzidis  
*Journal of the American Chemical Society* **2015** 137 (6), 2311-2317  
DOI: 10.1021/ja5111688
- 34. Charge Transport in C<sub>60</sub>-Based Dumbbell-type Molecules: Mechanically Induced Switching between Two Distinct Conductance States**  
Pavel Moreno-García, Andrea La Rosa, Viliam Kolivoška, Daniel Bermejo, Wenjing Hong, Koji Yoshida, Masoud Baghernejad, Salvatore Filippone, Peter Broekmann, Thomas Wandlowski, and Nazario Martín  
*Journal of the American Chemical Society* **2015** 137 (6), 2318-2327  
DOI: 10.1021/ja511271e
- 35. Re-entrant Lithium Local Environments and Defect Driven Electrochemistry of Li- and Mn-Rich Li-Ion Battery Cathodes**  
Fulya Dogan, Brandon R. Long, Jason R. Croy, Kevin G. Gallagher, Hakim Iddir, John T. Russell, Mahalingam Balasubramanian, and Baris Key  
*Journal of the American Chemical Society* **2015** 137 (6), 2328-2335  
DOI: 10.1021/ja511299y
- 36. High-Efficiency in Vitro and in Vivo Detection of Zn<sup>2+</sup> by Dye-Assembled Upconversion Nanoparticles**  
Juanjuan Peng, Wang Xu, Chai Lean Teoh, Sanyang Han, Beomsue Kim, Animesh Samanta, Jun Cheng Er, Lu Wang, Lin Yuan, Xiaogang Liu, and Young-Tae Chang  
*Journal of the American Chemical Society* **2015** 137 (6), 2336-2342  
DOI: 10.1021/ja5115248
- 37. Electrochemistry of a Single Attoliter Emulsion Droplet in Collisions**  
Byung-Kwon Kim, Jiyeon Kim, and Allen J. Bard  
*Journal of the American Chemical Society* **2015** 137 (6), 2343-2349  
DOI: 10.1021/ja512065n
- 38. Crystallization Kinetics of Organic–Inorganic Trihalide Perovskites and the Role of the Lead Anion in Crystal Growth**  
David T. Moore, Hiroaki Sai, Kwan W. Tan, Detlef-M. Smilgies, Wei Zhang, Henry J. Snaith, Ulrich Wiesner, and Lara A. Estroff  
*Journal of the American Chemical Society* **2015** 137 (6), 2350-2358  
DOI: 10.1021/ja512117e
- 39. Determining the Role of Polymer Molecular Weight for High-Performance All-Polymer Solar Cells: Its Effect on Polymer Aggregation and Phase Separation**  
Hyunbum Kang, Mohammad Afsar Uddin, Changyeon Lee, Ki-Hyun Kim, Thanh Luan Nguyen, Wonho Lee, Yuxiang Li, Cheng Wang, Han Young Woo, and Bumjoon J. Kim  
*Journal of the American Chemical Society* **2015** 137 (6), 2359-2365  
DOI: 10.1021/ja5123182
- 40. Monoamine Oxidase A Inhibitor–Near-Infrared Dye Conjugate Reduces Prostate Tumor Growth**  
Jason Boyang Wu, Tzu-Ping Lin, John D. Gallagher, Swati Kushal, Leland W. K. Chung, Haiyen E. Zhou, Bogdan Z. Olenyuk, and Jean C. Shih  
*Journal of the American Chemical Society* **2015** 137 (6), 2366-2374  
DOI: 10.1021/ja512613j
- 41. Branched Micelles by Living Crystallization-Driven Block Copolymer Self-Assembly under Kinetic Control**  
Huibin Qiu, Yang Gao, Van An Du, Rob Hamiman, Mitchell A. Winnik, and Ian Manners  
*Journal of the American Chemical Society* **2015** 137 (6), 2375-2385  
DOI: 10.1021/ja5126808
- 42. Mechanistic Rationalization of Unusual Sigmoidal Kinetic Profiles in the Machetti–De Sarlo Cycloaddition Reaction**  
Matthew P. Mower and Donna G. Blackmond  
*Journal of the American Chemical Society* **2015** 137 (6), 2386-2391  
DOI: 10.1021/ja512753v
- 43. Semiconducting Single Crystals Comprising Segregated Arrays of Complexes of C<sub>60</sub>**

Jonathan C. Barnes, Edward J. Dale, Aleksandrs Prokofjevs, Ashwin Narayanan, Ian C. Gibbs-Hall, Michal Juriček, Charlotte L. Stern, Amy A. Sarjeant, Yousry Y. Botros, Samuel I. Stupp, and J. Fraser Stoddart

*Journal of the American Chemical Society* **2015** 137 (6), 2392-2399

DOI: 10.1021/ja512959g

**44. Electrochemical Shell-Isolated Nanoparticle-Enhanced Raman Spectroscopy: Correlating Structural Information and Adsorption Processes of Pyridine at the Au(hkl) Single Crystal/Solution Interface**

Jian-Feng Li, Yue-Jiao Zhang, Alexander V. Rudnev, Jason R. Anema, Song-Bo Li, Wen-Jing Hong, Panneerselvam Rajapandiyan, Jacek Lipkowski, Thomas Wandlowski, and Zhong-Qun Tian

*Journal of the American Chemical Society* **2015** 137 (6), 2400-2408

DOI: 10.1021/ja513263j

**45. Correction to “Quantitatively Probing the Al Distribution in Zeolites”**

Aleksei Vjunov, John L. Fulton, Thomas Huthwelker, Sonia Pin, Donghai Mei, Gregory K. Schenter, Niranjana Govind, Donald M. Camaioni, Jian Zhi Hu, and Johannes A. Lercher

*Journal of the American Chemical Society* **2015** 137 (6), 2409-2409

DOI: 10.1021/ja513077w

**46. Correction to Molybdenum Catalyzed Ammonia Borane Dehydrogenation: Oxidation State Specific Mechanisms**

Joshua A. Buss, Guy A. Edouard, Christine Cheng, Jade Shi, and Theodor Agapie

*Journal of the American Chemical Society* **2015** 137 (6), 2410-2410

DOI: 10.1021/ja5132853