



Content

- 1. Chemistry of Materials, Editors' Choice, and Twitter**
Jillian M. Buriak and Carlos Toro
Chemistry of Materials 2015 27 (3), 649-649
- 2. Coincident Site Epitaxy at the Junction of Au–Cu₂ZnSnS₄ Heteronanostructures**
Biplab K Patra, Arnab Shit, Amit K Guria, Suresh Sarkar, Gyanaranjan Prusty, and Narayan Pradhan
Chemistry of Materials 2015 27 (3), 650-657
- 3. Structured Assemblages of Single-Walled 3d Transition Metal Silicate Nanotubes as Precursors for Composition-Tailorable Catalysts**
Yuan Sheng and Hua Chun Zeng
Chemistry of Materials 2015 27 (3), 658-667
- 4. Small-Molecule Adsorption in Open-Site Metal–Organic Frameworks: A Systematic Density Functional Theory Study for Rational Design**
Kyuho Lee, Joshua D. Howe, Li-Chiang Lin, Berend Smit, and Jeffrey B. Neaton
Chemistry of Materials 2015 27 (3), 668-678
- 5. Versatile Surfactant/Swelling-Agent Template for Synthesis of Large-Pore Ordered Mesoporous Silicas and Related Hollow Nanoparticles**
Liang Huang and Michal Kruk
Chemistry of Materials 2015 27 (3), 679-689
- 6. ZnO as an Efficient Nucleating Agent for Rapid, Room Temperature Synthesis and Patterning of Zn-Based Metal–Organic Frameworks**
Erika Zanchetta, Luca Malfatti, Raffaele Ricco, Mark J. Styles, Fabio Lisi, Campbell J. Coghlan, Christian J. Doonan, Anita J. Hill, Giovanna Brusatin, and Paolo Falcaro
Chemistry of Materials 2015 27 (3), 690-699
- 7. A Novel, Reactive Green Iron Sulfide (Sulfide Green Rust) Formed on Iron Oxide Nanocrystals**
Christopher J. Jones, Soma Chattopadhyay, Natalia I. Gonzalez-Pech, Carolina Avendano, Nina Hwang, Seung Soo Lee, Minjung Cho, Andrew Ozarowski, Arjun Prakash, J. T. Mayo, Cafer Yavuz, and Vicki L. Colvin
Chemistry of Materials 2015 27 (3), 700-707
- 8. High-Temperature Ammonolysis of Thin Film Ta₂O₅ Photoanodes: Evolution of Structural, Optical, and Photoelectrochemical Properties**
Ali Dabirian and Roel van de Krol
Chemistry of Materials 2015 27 (3), 708-715
- 9. Controlled Synthesis of Nitrogen-Doped Graphene from a Heteroatom Polymer and Its Mechanism of Formation**
Titash Mondal, Anil K. Bhowmick, and Ramanan Krishnamoorti
Chemistry of Materials 2015 27 (3), 716-725
- 10. General Strategy for Preparation of Carbon-Nanotube-Supported Nanocatalysts with Hollow Cavities and Mesoporous Shells**
Guowu Zhan and Hua Chun Zeng
Chemistry of Materials 2015 27 (3), 726-734
- 11. Materials Cartography: Representing and Mining Materials Space Using Structural and Electronic Fingerprints**
Olexandr Isayev, Denis Fourches, Eugene N. Muratov, Corey Oses, Kevin Rasch, Alexander Tropsha, and Stefano Curtarolo
Chemistry of Materials 2015 27 (3), 735-743

- 12. Controlling the Trap State Landscape of Colloidal CdSe Nanocrystals with Cadmium Halide Ligands**
Matthew J. Greaney, Elsa Couderc, Jing Zhao, Benjamin A. Nail, Matthew Mecklenburg, William Thornbury, Frank E. Osterloh, Stephen E. Bradforth, and Richard L. Brutchey
Chemistry of Materials **2015** 27 (3), 744-756
- 13. High Capacity Li-Rich Positive Electrode Materials with Reduced First-Cycle Irreversible Capacity Loss**
Ramesh Shunmugasundaram, Rajalakshmi Senthil Arumugam, and J. R. Dahn
Chemistry of Materials **2015** 27 (3), 757-767
- 14. Mild Dehydrogenation of Ammonia Borane Complexed with Aluminum Borohydride**
Iurii Dovgaliuk, Cécile S. Le Duff, Koen Robeyns, Michel Devillers, and Yaroslav Filinchuk
Chemistry of Materials **2015** 27 (3), 768-777
- 15. Probing Structure-Induced Optical Behavior in a New Class of Self-Activated Luminescent 0D/1D CaWO₄ Metal Oxide–CdSe Nanocrystal Composite Heterostructures**
Jinkyu Han, Coray McBean, Lei Wang, Jessica Hoy, Chemo Jaye, Haiqing Liu, Zhuo-Qun Li, Matthew Y. Sfeir, Daniel A. Fischer, Gordon T. Taylor, James A. Misewich, and Stanislaus S. Wong
Chemistry of Materials **2015** 27 (3), 778-792
- 16. Brominated Chemistry for Chemical Vapor Deposition of Electronic Grade SiC**
Milan Yazdanfar, Örjan Danielsson, Emil Kalered, Pitsiri Sukkaew, Olle Kordina, Daniel Nilsson, Ivan G. Ivanov, Lars Ojamäe, Erik Janzén, and Henrik Pedersen
Chemistry of Materials **2015** 27 (3), 793-801
- 17. Revealing Electrochemically Induced Antisite Defects in LiCoPO₄: Evolution upon Cycling**
Adrien Boulineau and Thibaut Gutel
Chemistry of Materials **2015** 27 (3), 802-807
- 18. Mesoporous Hybrid Thin Film Membranes with PMETAC@Silica Architectures: Controlling Ionic Gating through the Tuning of Polyelectrolyte Density**
Annette Andrieu-Brunsen, Sébastien Micoureau, Mario Tagliazucchi, Igal Szleifer, Omar Azzaroni, and Galo J. A. A. Soler-Illia
Chemistry of Materials **2015** 27 (3), 808-821
- 19. In Situ Probing of the Mechanisms of Coking Resistance on Catalyst-Modified Anodes for Solid Oxide Fuel Cells**
Xiayi Li, Mingfei Liu, Samson Y. Lai, Dong Ding, Mingyang Gong, Jung-Pil Lee, Kevin S. Blinn, Yunfei Bu, Zhihong Wang, Lawrence A. Bottomley, Faisal M. Alamgir, and Meilin Liu
Chemistry of Materials **2015** 27 (3), 822-828
- 20. Synthetic Tailoring of Solid-State Order in Diketopyrrolopyrrole-Based Copolymers via Intramolecular Noncovalent Interactions**
Heung Gyu Kim, Boseok Kang, Hyomin Ko, Jaewon Lee, Jisoo Shin, and Kilwon Cho
Chemistry of Materials **2015** 27 (3), 829-838
- 21. How Dopants Can Enhance Charge Transport in Li₂O₂**
Maxwell D. Radin, Charles W. Monroe, and Donald J. Siegel
Chemistry of Materials **2015** 27 (3), 839-847
- 22. Bioadhesive Microporous Architectures by Self-Assembling Polydopamine Microcapsules for Biomedical Applications**
Zhenming Wang, Chen Li, Jielong Xu, Kefeng Wang, Xiong Lu, Hongping Zhang, Shuxin Qu, Guanming Zhen, and Fuzeng Ren
Chemistry of Materials **2015** 27 (3), 848-856
- 23. Nanocompartmentalization of Soft Materials with Three Mutually Immiscible Solvents: Synthesis and Self-Assembly of Three-Arm Star-Polyphiles**
Liliana de Campo, Mino J. Moghaddam, Trond Varslot, Nigel Kirby, Rainer Mittelbach, Tim Sawkins, and Stephen T. Hyde
Chemistry of Materials **2015** 27 (3), 857-866
- 24. Structural and Electrical Properties of ([SnSe]_{1+δ})_m(NbSe₂)₁ Compounds: Single NbSe₂ Layers Separated by Increasing Thickness of SnSe**
Matti B. Alemayehu, Matthias Falmbigl, Kim Ta, Corinna Grosse, Richard D. Westover, Sage R. Bauers, Saskia F. Fischer, and David C. Johnson
Chemistry of Materials **2015** 27 (3), 867-875

- 25. Using Metal-less Structures To Enhance the Raman Signals of Graphene by 100-fold while Maintaining the Band-to-Band Ratio and Peak Positions Precisely**
Yang-Chun Lee, En-Yun Wang, Yu-Lun Liu, and Hsuen-Li Chen
Chemistry of Materials 2015 27 (3), 876-884
- 26. Synthesis, Structure, and Na-Ion Migration in Na₄NiP₂O₇F₂: A Prospective High Voltage Positive Electrode Material for the Na-Ion Battery**
Dipan Kundu, Rajesh Tripathi, Guerman Popov, W. R. M. Makahnouk, and Linda F. Nazar
Chemistry of Materials 2015 27 (3), 885-891
- 27. Doping Controls Plasmonics, Electrical Conductivity, and Carrier-Mediated Magnetic Coupling in Fe and Sn Codoped In₂O₃ Nanocrystals: Local Structure Is the Key**
G. Shiva Shanker, Bharat Tandon, Tomohiro Shibata, Soma Chattopadhyay, and Angshuman Nag
Chemistry of Materials 2015 27 (3), 892-900
- 28. First-Principles Insight into the Hydration Ability and Proton Conduction of the Solid State Proton Conductor, Y and Sn Co-Doped BaZrO₃**
James A. Dawson, James A. Miller, and Isao Tanaka
Chemistry of Materials 2015 27 (3), 901-908
- 29. High Performance α -MgAgSb Thermoelectric Materials for Low Temperature Power Generation**
Pingjun Ying, Xiaohua Liu, Chenguang Fu, Xianqiang Yue, Hanhui Xie, Xinbing Zhao, Wenqing Zhang, and Tiejun Zhu
Chemistry of Materials 2015 27 (3), 909-913
- 30. PbGa₂MSe₆ (M = Si, Ge): Two Exceptional Infrared Nonlinear Optical Crystals**
Zhong-Zhen Luo, Chen-Sheng Lin, Hong-Hua Cui, Wei-Long Zhang, Hao Zhang, Hong Chen, Zhang-Zhen He, and Wen-Dan Cheng
Chemistry of Materials 2015 27 (3), 914-922
- 31. Synthetic Strategies for Tailoring the Physicochemical and Magnetic Properties of Hydrophobic Magnetic Ionic Liquids**
Omprakash Nacham, Kevin D. Clark, Honglian Yu, and Jared L. Anderson
Chemistry of Materials 2015 27 (3), 923-931
- 32. Mechanism and Enhanced Yield of Carbon Nanotube Growth on Stainless Steel by Oxygen-Induced Surface Reconstruction**
Sebastian W. Pattinson, Balakrishnan Viswanath, Dmitri N. Zakharov, Jinjing Li, Eric A. Stach, and A. John Hart
Chemistry of Materials 2015 27 (3), 932-937
- 33. Phase Interface Structures in Li_{1+x}Rh₂O₄ Zero Strain Cathode Material Analyzed by Scanning Transmission Electron Microscopy**
Akiho Nakamura, Yunpeng Gu, Kouji Taniguchi, Naoya Shibata, Hidenori Takagi, and Yuichi Ikuhara
Chemistry of Materials 2015 27 (3), 938-943
- 34. High Thermoelectric Performance of a Heterogeneous PbTe Nanocomposite**
Hongchao Wang, Junphil Hwang, Matthew Loren Snedaker, Il-ho Kim, Chanyoung Kang, Jungwon Kim, Galen D. Stucky, John Bowers, and Woochul Kim
Chemistry of Materials 2015 27 (3), 944-949
- 35. Universal One-Pot and Scalable Synthesis of SERS Encoded Nanoparticles**
Bernat Mir-Simon, Irene Reche-Perez, Luca Guerrini, Nicolas Pazos-Perez, and Ramon A. Alvarez-Puebla
Chemistry of Materials 2015 27 (3), 950-958
- 36. High-Pressure Methane Storage in Porous Materials: Are Carbon Materials in the Pole Position?**
Mirian Elizabeth Casco, Manuel Martínez-Escandell, Enrique Gadea-Ramos, Katsumi Kaneko, Joaquín Silvestre-Albero, and Francisco Rodríguez-Reinoso
Chemistry of Materials 2015 27 (3), 959-964
- 37. Ultrathin Europium Oxide Nanoplatelets: "Hidden" Parameters and Controlled Synthesis, Unusual Crystal Structure, and Photoluminescence Properties**
D. Hudry, A. M. M. Abeykoon, J. Hoy, M. Y. Sfeir, E. A. Stach, and J. H. Dickerson
Chemistry of Materials 2015 27 (3), 965-974
- 38. Probing the Degradation Mechanism of Li₂MnO₃ Cathode for Li-Ion Batteries**
Pengfei Yan, Liang Xiao, Jianming Zheng, Yungang Zhou, Yang He, Xiaotao Zu, Scott X. Mao, Jie Xiao, Fei Gao, Ji-Guang Zhang, and Chong-Min Wang

Chemistry of Materials 2015 27 (3), 975-982

39. Solid-State Reaction Synthesis of a InSe/CuInSe₂ Lateral p–n Heterojunction and Application in High Performance Optoelectronic Devices

Wei Feng, Wei Zheng, XiaoShuang Chen, Guangbo Liu, Wenwu Cao, and PingAn Hu

Chemistry of Materials 2015 27 (3), 983-989

40. Phase Transfer and Polymer Coating Methods toward Improving the Stability of Metallic Nanoparticles for Biological Applications

Mahmoud G. Soliman, Beatriz Pelaz, Wolfgang J. Parak, and Pablo del Pino

Chemistry of Materials 2015 27 (3), 990-997

41. Low-Voltage Organic Transistors Based on Tetraceno[2,3-b]thiophene: Contact Resistance and Air Stability

Ulrike Kraft, John E. Anthony, Emilie Ripaud, Marsha A. Loth, Edwin Weber, and Hagen Klauk

Chemistry of Materials 2015 27 (3), 998-1004

42. All First Row Transition Metal Oxide Photoanode for Water Splitting Based on Cu₃V₂O₈

Jason A. Seabold and Nathan R. Neale

Chemistry of Materials 2015 27 (3), 1005-1013

43. Osmotic-Pressure-Mediated Control of Structural Colors of Photonic Capsules

Tae Min Choi, Jin-Gyu Park, Young-Seok Kim, Vinothan N. Manoharan, and Shin-Hyun Kim

Chemistry of Materials 2015 27 (3), 1014-1020

44. Hybrid ZnO-Based Nanoconjugate for Efficient and Sustainable White Light Generation

Arunasish Layek, Paul C. Stanish, Vadim Chirmanov, and Pavle V. Radovanovic

Chemistry of Materials 2015 27 (3), 1021-1030

45. Elucidation of the Local and Long-Range Structural Changes that Occur in Germanium Anodes in Lithium-Ion Batteries

Hyeyoung Jung, Phoebe K. Allan, Yan-Yan Hu, Olaf J. Borkiewicz, Xiao-Liang Wang, Wei-Qiang Han, Lin-Shu Du, Chris J. Pickard, Peter J. Chupas, Karena W. Chapman, Andrew J. Morris, and Clare P. Grey

Chemistry of Materials 2015 27 (3), 1031-1041

46. Probing Reactive Platinum Sites in UiO-67 Zirconium Metal–Organic Frameworks

Sigurd Øien, Giovanni Agostini, Stian Svelle, Elisa Borfecchia, Kirill A. Lomachenko, Lorenzo Mino, Erik Gallo, Silvia Bordiga, Unni Olsbye, Karl Petter Lillerud, and Carlo Lamberti

Chemistry of Materials 2015 27 (3), 1042-1056

47. Mechanistic Study of the Formation of Bright White Light-Emitting Ultrasmall CdSe Nanocrystals: Role of Phosphine Free Selenium Precursors

Sukanta Dolai, Poulami Dutta, Barry B. Muhoberac, Charles D. Irving, and Rajesh Sardar

Chemistry of Materials 2015 27 (3), 1057-1070

48. Anisotropic Multicenter Bonding and High Thermoelectric Performance in Electron-Poor CdSb

Shanyu Wang, Jiong Yang, Lihua Wu, Ping Wei, Jihui Yang, Wenqing Zhang, and Yuri Grin

Chemistry of Materials 2015 27 (3), 1071-1081

49. Mesoporous Iron Phosphonate Electrodes with Crystalline Frameworks for Lithium-Ion Batteries

Malay Pramanik, Yoshihiro Tsujimoto, Victor Malgras, Shi Xue Dou, Jung Ho Kim, and Yusuke Yamauchi

Chemistry of Materials 2015 27 (3), 1082-1089

50. Water-Dispersible Small Monodisperse Electrically Conducting Antimony Doped Tin Oxide Nanoparticles

Kristina Peters, Patrick Zeller, Goran Stefanic, Volodymyr Skoromets, Hynek Němec, Petr Kužel, and Dina Fattakhova-Rohlfing

Chemistry of Materials 2015 27 (3), 1090-1099

51. Highly Efficient Spiro[fluorene-9,9'-thioxanthene] Core Derived Blue Emitters and Fluorescent/Phosphorescent Hybrid White Organic Light-Emitting Diodes

Yunchuan Li, Zhiheng Wang, Xianglong Li, Gaozhan Xie, Dongcheng Chen, Yi-Fan Wang, Chang-Cheng Lo, A. Lien, Junbiao Peng, Yong Cao, and Shi-Jian Su

Chemistry of Materials 2015 27 (3), 1100-1109

- 52. Supramolecular Nanoparticles Constructed by DOX-Based Prodrug with Water-Soluble Pillar[6]arene for Self-Catalyzed Rapid Drug Release**
Yu Cao, Yan Li, Xiao-Yu Hu, Xiaochun Zou, Shuhan Xiong, Chen Lin, and Leyong Wang
Chemistry of Materials **2015** 27 (3), 1110-1119
- 53. Cu₃-xP Nanocrystals as a Material Platform for Near-Infrared Plasmonics and Cation Exchange Reactions**
Luca De Trizio, Roberto Gaspari, Giovanni Bertoni, Ilka Kriegel, Luca Moretti, Francesco Scotognella, Lorenzo Maserati, Yang Zhang, Gabriele C. Messina, Mirko Prato, Sergio Marras, Andrea Cavalli, and Liberato Manna
Chemistry of Materials **2015** 27 (3), 1120-1128
- 54. Large-Scale Production of Size-Controlled MoS₂ Nanosheets by Shear Exfoliation**
Eswaraiah Varra, Claudia Backes, Keith R. Paton, Andrew Harvey, Zahra Gholamvand, Joe McCauley, and Jonathan N. Coleman
Chemistry of Materials **2015** 27 (3), 1129-1139
- 55. Ternary Alloyed ZnSexTe_{1-x} Nanowires: Solution-Phase Synthesis and Band Gap Bowing**
Fangjie Xu, Bin Xue, Fudong Wang, and Angang Dong
Chemistry of Materials **2015** 27 (3), 1140-1146