

ON THE COVER: Single-crystal nickel–iron oxide nanoparticles of different shapes (stars, cubes, spheres) were synthesized by controlling the combined thermolysis of nickel and iron oleate. The HAADF-STEM images shown here and diffraction studies revealed them to be composed of the same metastable phase. For more information, see “Nickel/Iron Oxide Nanocrystals with a Nonequilibrium Phase: Controlling Size, Shape, and Composition” by Jeremy A. Bau, Peng Li, Armando J. Marengo, Simon Trudel, Brian C. Olsen, Erik J. Lubert,* and Jillian M. Buriak* (*Chem. Mater.* 2014, 26, 4796–4804).

Editorial

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dx.doi.org/10.1021/cm502841d

Nanomaterials Pioneers: Nikoobakht and El-Sayed First of a Series Highlighting Members of the 1k Club of *Chemistry of Materials*

Carlos Toro* and Jillian M. Buriak

Communications

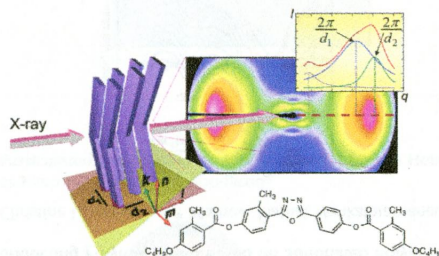
4671



dx.doi.org/10.1021/cm5019822

Evidence of Biaxial Order in the Cybotactic Nematic Phase of Bent-Core Mesogens

Francesco Vita, Tatum Tauscher, Frank Speetjens, Edward T. Samulski, Eric Scharer, and Oriano Francescangeli*



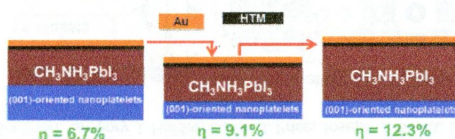
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dx.doi.org/10.1021/cm502185v

Photoanode Based on (001)-Oriented Anatase Nanoplatelets for Organic–Inorganic Lead Iodide Perovskite Solar Cell

M. Ibrahim Dar, F. Javier Ramos, Zhaosheng Xue, Bin Liu, Shahzada Ahmad, Srinivasrao A. Shivashankar, Mohammad Khaja Nazeeruddin,* and Michael Grätzel*



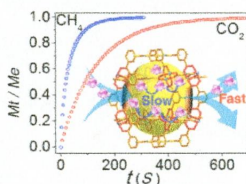
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dx.doi.org/10.1021/cm403697m

Gas Storage and Diffusion through Nanocages and Windows in Porous Metal–Organic Framework $\text{Cu}_2(2,3,5,6\text{-tetramethylbenzene-1,4-diisophthalate})(\text{H}_2\text{O})_2$

Liangjun Li, Jon G. Bell, Sifu Tang, Xiaoxia Lv, Chao Wang, Yanlong Xing, Xuebo Zhao,* and K. Mark Thomas*



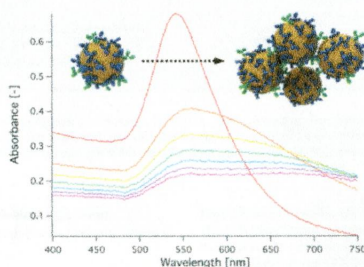
4696



dx.doi.org/10.1021/cm500535p

Single-Step Homogeneous Immunoassays Utilizing Epitope-Tagged Gold Nanoparticles: On the Mechanism, Feasibility, and Limitations

Heiko Andresen, Morgan Mager, Matthias Griebner, Patrick Charchar, Nevena Todorova, Nia Bell, Georgios Theocharidis, Sergio Bertazzo, Irene Yarovsky,* and Molly M. Stevens*



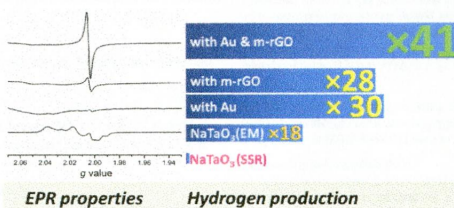
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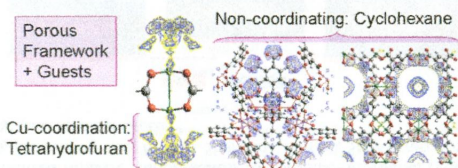
Advanced Charge Utilization from NaTaO_3 Photocatalysts by Multilayer Reduced Graphene Oxide

Tobias Meyer, Jacqueline B. Priebe, Rafael O. da Silva, Tim Peppel, Henrik Junge, Matthias Beller, Angelika Brückner, and Sebastian Wohlrab*



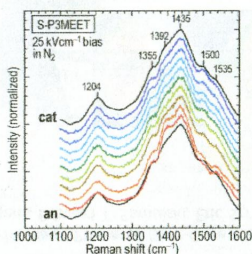
Guest Adsorption in the Nanoporous Metal–Organic Framework $\text{Cu}_3(1,3,5\text{-Benzenetricarboxylate})_2$: Combined *In Situ* X-ray Diffraction and Vapor Sorption

Vanessa K. Peterson,* Peter D. Southon, Gregory J. Halder, David J. Price, Joseph J. Bevitt, and Cameron J. Kepert*



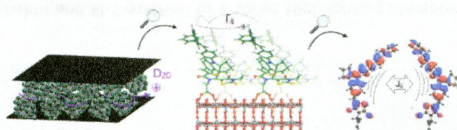
A High-Performance p-Doped Conducting Polymer Blend Based on Sulfonated Polyalkoxythiophene and Poly(4-hydroxystyrene)

Dagmawi Belaine, Rui-Qi Png,* Christine L. McGuiness,* Mathew Mathai, Venkataraman Seshadri, and Peter K. H. Ho



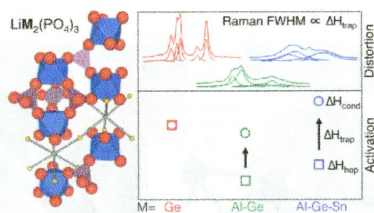
Effect of Molecular Fluctuations on Hole Diffusion within Dye Monolayers

Valérie Vaissier,* Edoardo Mosconi, Davide Moia, Mariachiara Pastore, Jarvist M. Frost, Filippo De Angelis,* Piers R. F. Barnes, and Jenny Nelson*



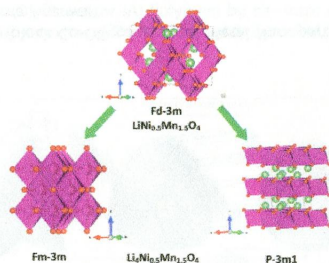
Lithium-Ion Trapping from Local Structural Distortions in Sodium Super Ionic Conductor (NASICON) Electrolytes

Brian E. Francisco, Conrad R. Stoldt,* and Jean-Claude M'Peko



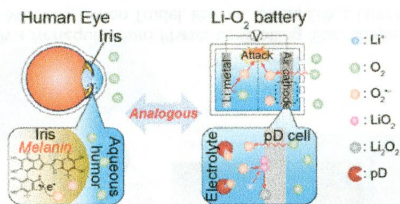
Insight into the Structural Evolution of a High-Voltage Spinel for Lithium-Ion Batteries

Qingliu Wu, Yuzi Liu, Christopher S. Johnson, Yangxing Li, Dennis W. Dees, and Wenquan Lu*



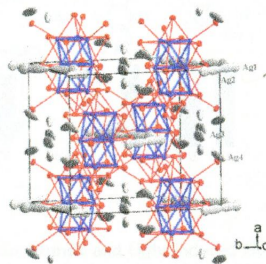
Wisdom from the Human Eye: A Synthetic Melanin Radical Scavenger for Improved Cycle Life of Li-O₂ Battery

Byung Gon Kim, Sunjin Kim, Haeshin Lee,* and Jang Wook Choi*

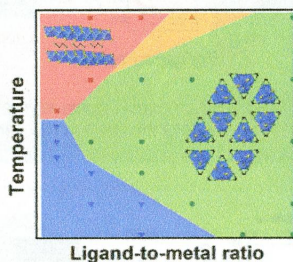


4765 [dx.doi.org/10.1021/cm5016367](https://doi.org/10.1021/cm5016367)**Comprehensive Study of the Low-Temperature Transport and Thermodynamic Properties of the Cluster Compounds $\text{Ag}_x\text{Mo}_2\text{Se}_{11}$ ($3.41 \leq x \leq 3.78$)**

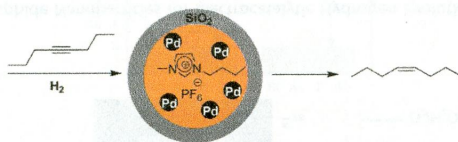
T. Zhou, M. Colin, C. Candolfi, C. Boulanger, A. Dauscher, E. Santava, J. Hejtmánek, P. Baranek, R. Al Rahal Al Orabi, M. Potel, B. Fontaine, P. Gougeon, R. Gautier, and B. Lenoir*

4776 [dx.doi.org/10.1021/cm501838q](https://doi.org/10.1021/cm501838q)**Rational Synthesis of Dimensionally Reduced TiS_2 Phases**

Rick A. L. Morasse, Tianyang Li, Zachary J. Baum, and Joshua E. Goldberger*

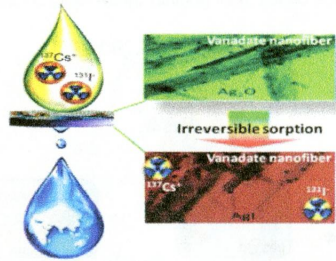
4781 [dx.doi.org/10.1021/cm501840d](https://doi.org/10.1021/cm501840d)**BMIm-PF₆@SiO₂ Microcapsules: Particulated Ionic Liquid as A New Material for the Heterogenization of Catalysts**

Ester Weiss, Bishnu Dutta, Andreas Kirschning, and Raed Abu-Reziq*



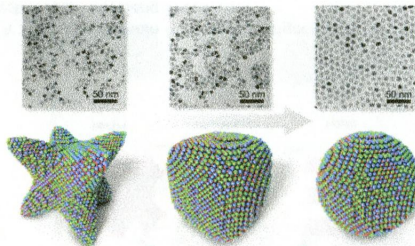
Separate or Simultaneous Removal of Radioactive Cations and Anions from Water by Layered Sodium Vanadate-Based Sorbents

Sarina Sarina, Arixin Bo, Dejun Liu, Hongwei Liu, Dongjiang Yang, Cuifeng Zhou, Norbert Maes, Sridhar Komarneni, and Huaiyong Zhu*



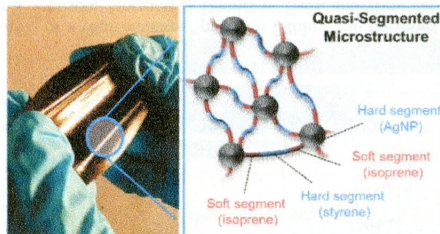
Nickel/Iron Oxide Nanocrystals with a Nonequilibrium Phase: Controlling Size, Shape, and Composition

Jeremy A. Bau, Peng Li, Armando J. Marengo, Simon Trudel, Brian C. Olsen, Erik J. Lubner,* and Jillian M. Buriak*



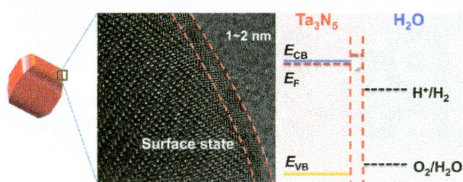
Design of Soft Materials from Liquid Triblock Co-Oligomers and Metal Nanoparticles

Holger Pletsch, Max J. Schnepf, and Seema Agarwal*



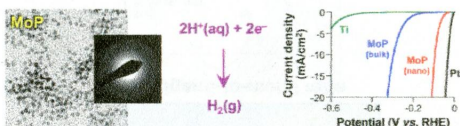
Critical Role of the Semiconductor–Electrolyte Interface in Photocatalytic Performance for Water-Splitting Reactions Using Ta_3N_5 Particles

Ela Nurlaela, Samy Ould-Chikh, Moussab Harb, Silvano del Gobbo, Mimoun Aouine, Eric Puzenat, Philippe Sautet, Kazunari Domen, Jean-Marie Basset, and Kazuhiro Takanabe*



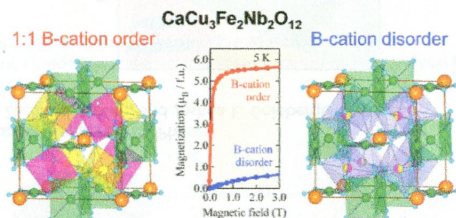
Amorphous Molybdenum Phosphide Nanoparticles for Electrocatalytic Hydrogen Evolution

Joshua M. McEnaney, J. Chance Crompton, Juan F. Callejas, Eric J. Popczun, Adam J. Biacchi, Nathan S. Lewis,* and Raymond E. Schaak*



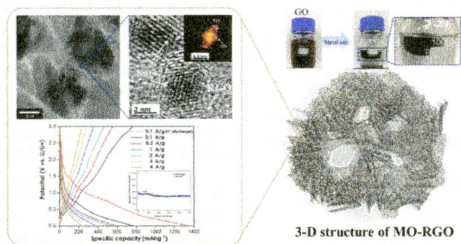
B-Cation Order Control of Magnetism in the 1322 Perovskite $\text{CaCu}_3\text{Fe}_2\text{Nb}_2\text{O}_{12}$

Mark S. Senn, Wei-tin Chen, Takashi Saito, Susana Garcia-Martin, J. Paul Attfield, and Yuichi Shimakawa*



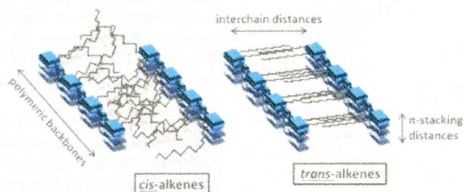
In Situ Synthesis of Three-Dimensional Self-Assembled Metal Oxide–Reduced Graphene Oxide Architecture

Hyun-Kyung Kim, Sang-Hoon Park, Seung-Beom Yoon, Chang-Wook Lee, Jun Hui Jeong, Kwang Chul Roh,* and Kwang-Bum Kim*



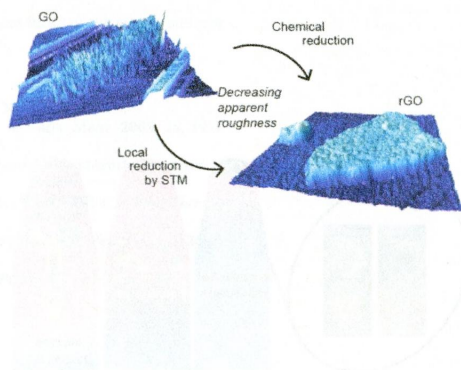
Tuning Packing and Solubility of Donor (D)–Acceptor (A) Polymers by *cis*–*trans* Isomerization within Alkenyl Side Chains

Felix Hinkel, Tomasz Marszalek, Wojciech Zajaczkowski, Sreenivasa Reddy Puniredd, Martin Baumgarten, Wojciech Pisula,* and Klaus Müllen*



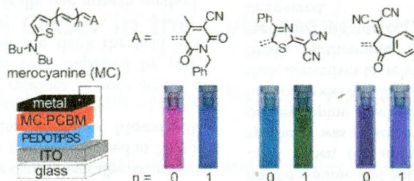
Apparent Roughness as Indicator of (Local) Deoxygenation of Graphene Oxide

Duncan den Boer,* Jonathan G. Weis, Carlos A. Zuniga, Stefanie A. Sydlík, and Timothy M. Swager*



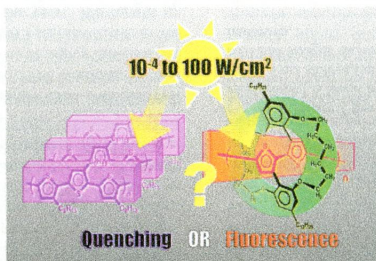
NIR-Absorbing Merocyanine Dyes for BHJ Solar Cells

André Zitzler-Kunkel, Martin R. Lenze, Nils M. Kronenberg, Ana-Maria Krause, Matthias Stolte, Klaus Meerholz,* and Frank Würthner*

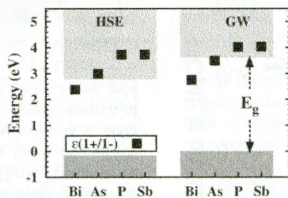


Effect of Conjugated Backbone Protection on Intrinsic and Light-Induced Fluorescence Quenching in Polythiophenes

Dibakar Sahoo, Kazunori Sugiyasu, Yuxi Tian, Masayuki Takeuchi, and Ivan G. Scheblykin*

Multivalency of Group 15 Dopants in SnO_2

Haowei Peng,* John D. Perkins, and Stephan Lany*



Formation of Free-Standing Supercrystals from the Assembly of Polyhedral Gold Nanocrystals by Surfactant Diffusion in the Solution

Chih-Wen Yang, Chun-Ya Chiu, and Michael H. Huang*

