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ON THE COVER: Bio-inspired crystal synthesis in combination with high-resolution synchrotron powder diffraction was used to demonstrate that a recombinant GFP-tagged biomineralization protein is incorporated into the crystal lattice of calcite to an extent comparable to the natural system. In contrast, pure GFP is hardly incorporated at all. This approach opens a promising route toward the synthesis of new and improved biocomposite materials. For more information, see "Incorporation of a Recombinant Biomineralization Fusion Protein into the Crystalline Lattice of Calcite" by Eva Weber, Leonid Bloch, Christina Guth, Andy N. Fitch, Ingrid M. Weiss, and Boaz Pokroy* (*Chem. Mater.* 2014, 26, 4925–4932).

Editorial

4889

[dx.doi.org/10.1021/cm5030662](https://doi.org/10.1021/cm5030662)**Template Synthesis Approach to Nanomaterials: Charles Martin***Chemistry of Materials' 1k Club*

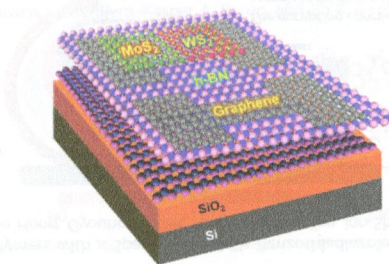
Carlos Toro and Jillian M. Buriak*

Perspectives

4891

[dx.doi.org/10.1021/cm502170q](https://doi.org/10.1021/cm502170q)**Stacking of Two-Dimensional Materials in Lateral and Vertical Directions**

Hyunseob Lim, Seong In Yoon, Gwangwoo Kim, A-Rang Jang, and Hyeon Suk Shin*

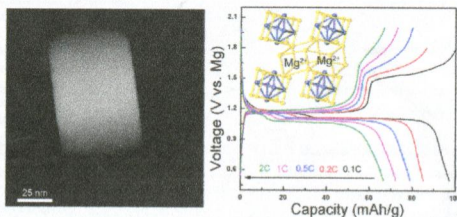


4904 **S**

[dx.doi.org/10.1021/cm502306c](https://doi.org/10.1021/cm502306c)

Facile Synthesis of Chevrel Phase Nanocubes and Their Applications for Multivalent Energy Storage

Yingwen Cheng, Lucas R. Parent, Yuyan Shao, Chongmin Wang, Vincent L. Sprenkle, Guosheng Li,* and Jun Liu*



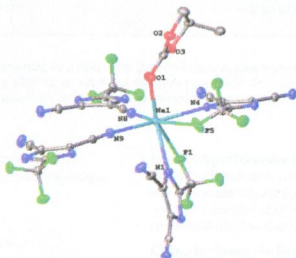
Articles

4908 **S**

[dx.doi.org/10.1021/cm403349t](https://doi.org/10.1021/cm403349t)

New Tailored Sodium Salts for Battery Applications

Anna Plewa-Marczewska,* Tomasz Trzeciak, Anna Bitner, Leszek Niedzicki, Maciej Dranka, Grażyna Z. Żukowska, Marek Marcinek, and Władysław Wieczorek

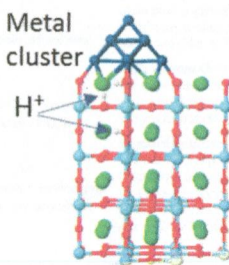


4915 **S**

[dx.doi.org/10.1021/cm500035e](https://doi.org/10.1021/cm500035e)

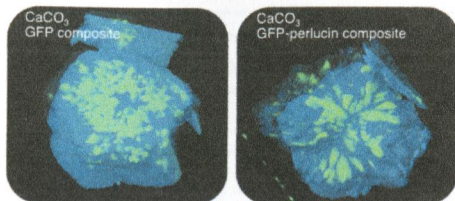
An ab Initio Investigation of Proton Stability at BaZrO₃ Interfaces

Tania Tauer, Ryan O'Hayre, and J. Will Medlin*



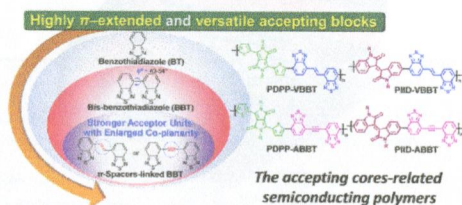
Incorporation of a Recombinant Biominerization Fusion Protein into the Crystalline Lattice of Calcite

Eva Weber, Leonid Bloch, Christina Guth, Andy N. Fitch, Ingrid M. Weiss, and Boaz Pokroy*



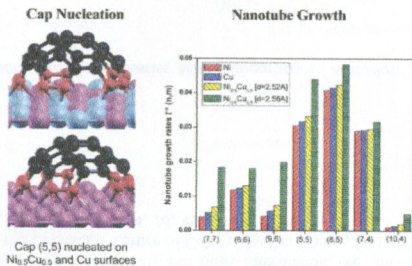
Ambipolar Semiconducting Polymers with π -Spacer Linked Bis-Benzothiadiazole Blocks as Strong Accepting Units

Jonggi Kim, A-Reum Han, Jayeon Hong, Gyoungsik Kim, Junghoon Lee, Tae Joo Shin, Joon Hak Oh,* and Changduk Yang*



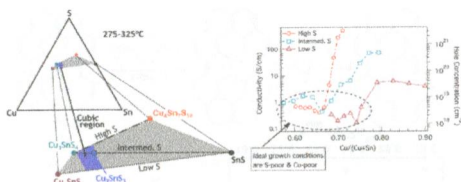
Predicting the Chiral Enrichment of Metallic SWCNTs on Ni–Cu Bimetallic Surfaces

Debosruti Dutta, R. Mohan Sankaran, and Venkat R. Bhethanabotla*



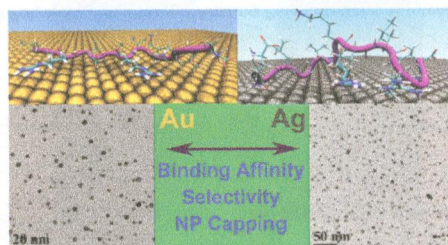
Control of Doping in Cu_2SnS_3 through Defects and Alloying

Lauryl N. Baranowski, Pawel Zawadzki, Steven Christensen, Dennis Nordlund, Stephan Lany, Adele C. Tamboli, Lynn Gedvilas, David S. Ginley, William Tumas, Eric S. Toberer, and Andriy Zakutayev*

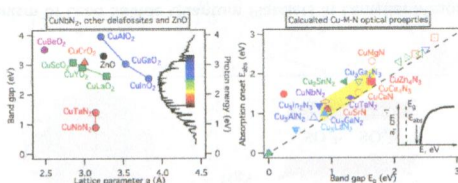


Comparative Study of Materials-Binding Peptide Interactions with Gold and Silver Surfaces and Nanostructures: A Thermodynamic Basis for Biological Selectivity of Inorganic Materials

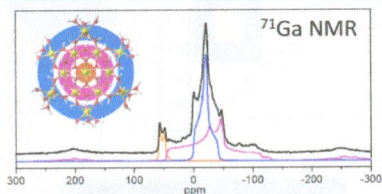
J. Pablo Palafox-Hernandez, Zhenghua Tang, Zak E. Hughes, Yue Li, Mark T. Swihart, Paras N. Prasad, Tiffany R. Walsh,* and Marc R. Knecht*

Experimental Synthesis and Properties of Metastable CuNbN_2 and Theoretical Extension to Other Ternary Copper Nitrides

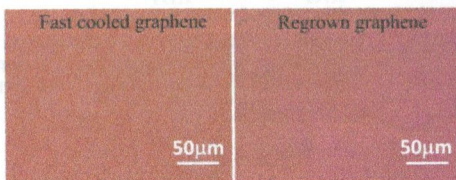
Andriy Zakutayev, Amy J. Allen, Xiuwen Zhang, Julien Vidal, Zhiming Cui, Stephan Lany,* Minghui Yang,* Francis J. DiSalvo, and David S. Ginley



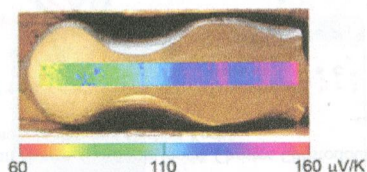
Solid-State ^{69}Ga and ^{71}Ga NMR Study of the Nanoscale Inorganic Cluster $[\text{Ga}_{13}(\mu_3\text{-OH})_6(\mu_2\text{-OH})_{18}(\text{H}_2\text{O})_{24}](\text{NO}_3)_{15}$
 Zayd L. Ma, Katherine M. Wentz, Blake A. Hammann, I-Ya Chang, Maisha K. Kamunde-Devonish, Paul Ha-Yeon Cheong, Darren W. Johnson, Victor V. Tersikh, and Sophia E. Hayes*



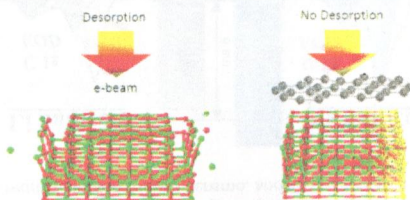
Crack-Free Growth and Transfer of Continuous Monolayer Graphene Grown on Melted Copper
 Ye Fan, Kuang He, Haijie Tan, Susannah Speller, and Jamie H. Warner*



Functionally Graded $\text{Ge}_{1-x}\text{Si}_x$ Thermoelectrics by Simultaneous Band Gap and Carrier Density Engineering
 Ellen M. J. Hedegaard, Simon Johnsen, Lasse Bjerg, Kasper A. Borup, and Bo B. Iversen*

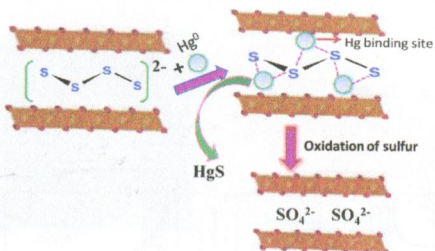


Graphene Coatings for the Mitigation of Electron Stimulated Desorption and Fullerene Cap Formation
 Alicja Bachmatiuk, Arezoo Dianat, Frank Ortmann, Huy Ta Quang, Magdalena Ola Cichocka, Ignacio Gonzalez-Martinez, Lei Fu, Bernd Rellinghaus, Joergen Eckert, Gianarelio Cuniberti, and Mark Hermann Rummeli*



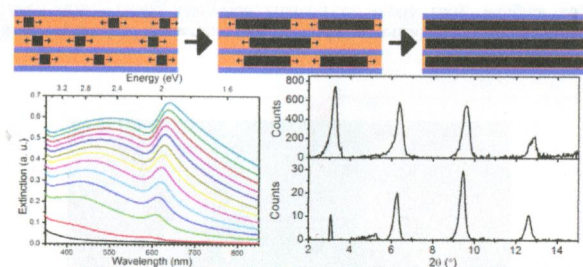
Efficient Hg Vapor Capture with Polysulfide Intercalated Layered Double Hydroxides

Shulan Ma, Yurina Shim, Saiful M. Islam, K. S. Subrahmanyam, Pengli Wang, Hao Li, Shichao Wang, Xiaojing Yang, and Mercouri G. Kanatzidis*



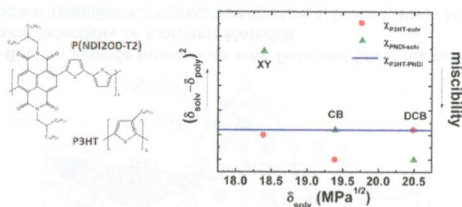
Synthesis and Growth Mechanism of Lead Sulfide Quantum Platelets in Lamellar Mesophase Templates

Paul J. Morrison, Richard A. Loomis, and William E. Buhro*



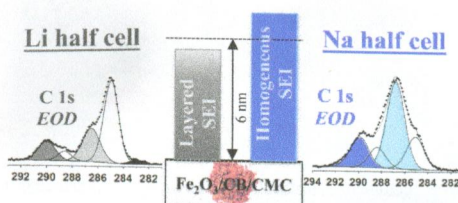
Tuning the Morphology of All-Polymer OPVs through Altering Polymer-Solvent Interactions

Eleni Pavlopoulou, Chang Su Kim, Stephanie S. Lee, Zhihua Chen, Antonio Facchetti, Michael F. Toney, and Yueh-Lin Loo*



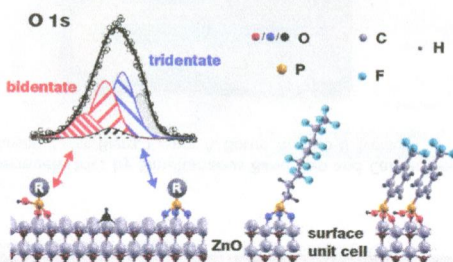
Investigation of the Electrode/Electrolyte Interface of Fe₂O₃ Composite Electrodes: Li vs Na Batteries

Bertrand Philippe,* Mario Valvo, Fredrik Lindgren, Håkan Rensmo, and Kristina Edström



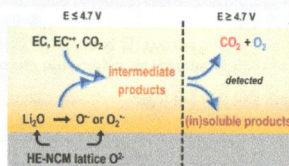
Surface Modification of ZnO(0001)-Zn with Phosphonate-Based Self-Assembled Monolayers: Binding Modes, Orientation, and Work Function

Melanie Timpel, Marco V. Nardi, Stefan Krause, Giovanni Ligorio, Christos Christodoulou, Luca Pasquali, Angelo Giglia, Johannes Frisch, Berthold Wegner, Paolo Moras, and Norbert Koch*



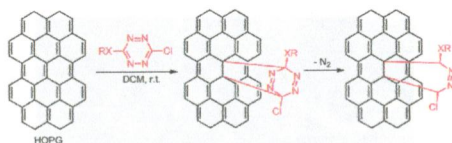
Differential Electrochemical Mass Spectrometry Study of the Interface of xLi₂MnO₃(1-x)LiMO₂ (M = Ni, Co, and Mn) Material as a Positive Electrode in Li-Ion Batteries

Elias Castel, Erik J. Berg, Mario El Kazzi, Petr Novák,* and Claire Villevieille



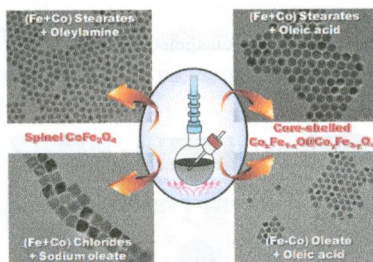
Facile Covalent Modification of a Highly Ordered Pyrolytic Graphite Surface via an Inverse Electron Demand Diels–Alder Reaction under Ambient Conditions

Jun Zhu, Jonathan Hiltz, Mohamed Amine Mezour, Vadim Bernard-Gauthier, R. Bruce Lennox,* and Ralf Schirmacher*



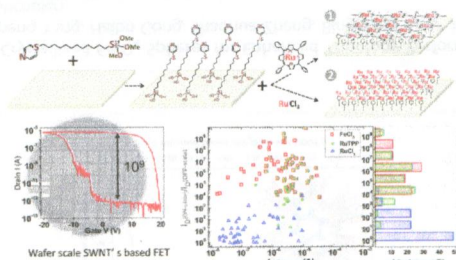
Tuning of Synthesis Conditions by Thermal Decomposition toward Core–Shell $\text{Co}_x\text{Fe}_{1-x}\text{O}@_{\text{Co}_y\text{Fe}_{3-y}\text{O}_4}$ and CoFe_2O_4 Nanoparticles with Spherical and Cubic Shapes

Walid Baaziz,* Benoit P. Pichon, Yu Liu, Jean-Marc Grenèche, Corinne Ulhaq-Bouillet, Erwan Terrier, Nicolas Bergéard, Valérie Halté, Christine Boeglín, Fadi Choueikani, Mohamed Toumi, Tahar Mhiri, and Sylvie Begin-Colin*



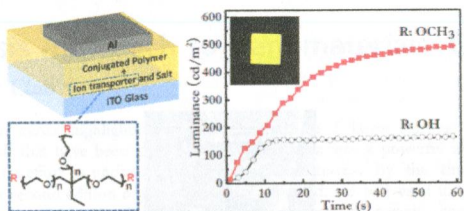
Direct Synthesis and Integration of Individual, Diameter-Controlled Single-Walled Nanotubes (SWNTs)

Fatima Z. Bouanis,* Costel S. Cojocaru,* Vincent Huc, Evgeny Norman, Marc Chaigneau, Jean-Luc Maurice, Talal Mallah, and Didier Pribat



Identifying Key Properties of Electrolytes for Light-Emitting Electrochemical Cells

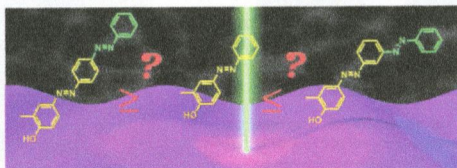
Shi Tang, Jonas Mindemark, Carlos Moyses Graca Araujo, Daniel Brandell, and Ludvig Edman*



Are Two Azo Groups Better than One? Investigating the Photoresponse of Polymer-Bisazobenzene Complexes

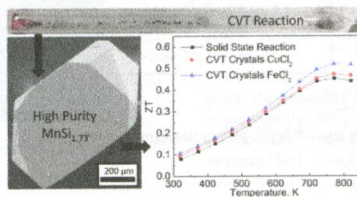
Jaana Vapaavuori,* Alexis Goulet-Hanssens,* Ismo T.S. Heikkinen, Christopher J. Barrett, and Arri Priimagi

Which switch better patterns polymers?



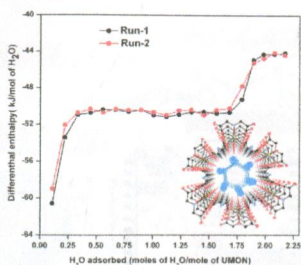
Thermoelectric Properties of Undoped High Purity Higher Manganese Silicides Grown by Chemical Vapor Transport

Steven N. Girard, Xi Chen, Fei Meng, Ankit Pokhrel, Jianshi Zhou, Li Shi, and Song Jin*



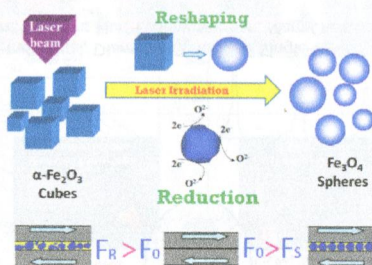
Energetics of Formation and Hydration of a Porous Metal Organic Nanotube

Sulata K. Sahu, Daniel K. Unruh, Tori Z. Forbes,* and Alexandra Navrotsky



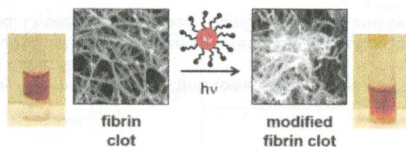
Submicron-Lubricant Based on Crystallized Fe_3O_4 Spheres for Enhanced Tribology Performance

Xiaoyun Song, Zhiwen Qiu, Xiaopeng Yang, Haibo Gong, Shaohua Zheng, Bingqiang Cao,* Hongqiang Wang,* Helmuth Möhwald, and Dmitry Shchukin



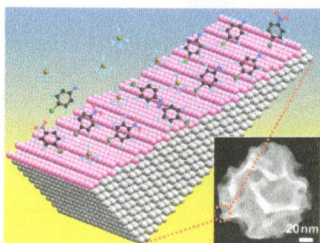
Non-Enzymatic Remodeling of Fibrin Biopolymers via Photothermally Triggered Radical-Generating Nanoparticles

Joan M. Walker and Jeffrey M. Zaleski*



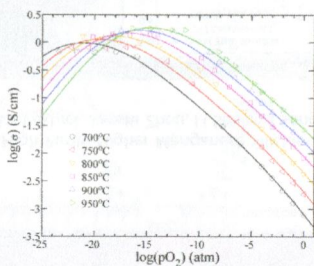
Nanoporosity-Enhanced Catalysis on Subwavelength Au Nanoparticles: a Plasmon-Enhanced Spectroscopic Study

Qingfeng Zhang, Douglas A. Blom, and Hui Wang*



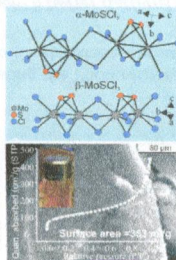
Defect and Transport Model of Ceria–Zirconia Solid Solutions: $\text{Ce}_{0.8}\text{Zr}_{0.2}\text{O}_{2-\delta}$ —An Electrical Conductivity Study

Di Chen, Yidan Cao, Duan Weng, and Harry L. Tuller*



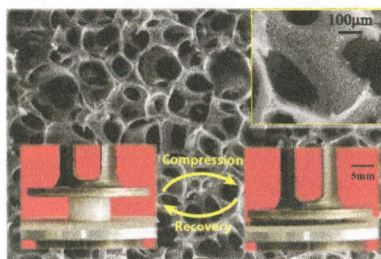
One-Dimensional Molybdenum Thiochlorides and Their Use in High Surface Area MoS_2 Chalcogels

Saiful M. Islam, Kota S. Subrahmanyam, Christos D. Malliakas, and Mercouri G. Kanatzidis*

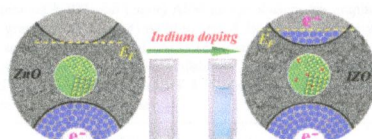


Soft Colloidal Scaffolds Capable of Elastic Recovery after Large Compressive Strains

Raja Rajamanickam, Sushma Kumari, Deepak Kumar, Shankar Ghosh, Jong Chul Kim, Giyoong Tae, Sayam Sen Gupta,* and Guruswamy Kumaraswamy*

**Colloidal Indium-Doped Zinc Oxide Nanocrystals with Tunable Work Function: Rational Synthesis and Optoelectronic Applications**

Xiaoyong Liang, Yuping Ren, Sai Bai, Na Zhang, Xingliang Dai, Xin Wang, Haiping He, Chuanhong Jin, Zhizhen Ye, Qi Chen, Liwei Chen, Jianpu Wang, and Yizheng Jin*

**Additions and Corrections****Correction to Just Accepted, Most Read, and New Faces**

Jillian M. Buriak*