





**ON THE COVER:** The top panel shows atomic patterns generated using aberration corrected STEM imaging and element-selective EELS mapping of the (110) projected columns of the diamond structure. The dark spots in the "black-and-white" micrograph correspond to Si/Ge/Sn atomic pairs. The colored features in the red/green images show corresponding Sn/Ge EELS maps. The hybrid Ge+Sn map illustrates a uniform distribution of the atomic species over the same average alloy lattice and a close correspondence of the Ge/Sn dimers indicating that the Sn atoms occupy random tetrahedral sites. The calculated compositional dependence of the electronic structure (bottom panel) indicates Ge-like, Si-like, and direct-gap character consistent with optical measurements. For more information, see "Development of Light Emitting Group IV Ternary Alloys on Si Platforms for Long Wavelength Optoelectronic Applications" by Liying Jiang, Chi Xu, James D. Gallagher, Ruben Favaro, Toshi Aoki, José Menéndez, and John Kouvetakis\* (*Chem. Mater.* 2014, 26, 2522–2531).

## Editorial

2487

Should I Reveal the History of My Manuscript?

Jillian M. Buriak

[dx.doi.org/10.1021/cm501152b](https://doi.org/10.1021/cm501152b)

## Communications

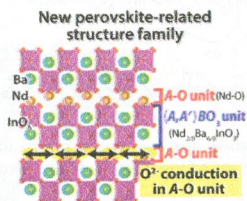
2488



New Perovskite-Related Structure Family of Oxide-Ion Conducting Materials  $\text{NdBaInO}_4$

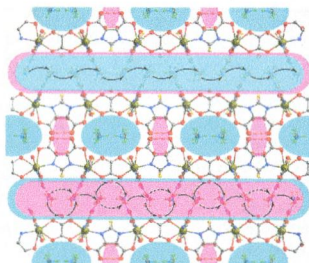
Kotaro Fujii, Yuichi Esaki, Kazuki Omoto, Masatomo Yashima,\* Akinori Hoshikawa, Toru Ishigaki, and James R. Hester

[dx.doi.org/10.1021/cm500776x](https://doi.org/10.1021/cm500776x)



## Direct Observation of Two Types of Proton Conduction Tunnels Coexisting in a New Porous Indium–Organic Framework

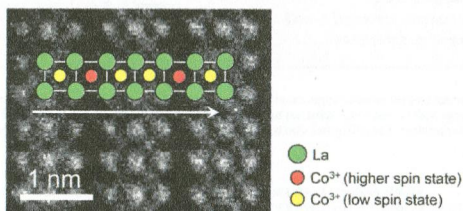
Xiang Zhao, Chengyu Mao, Xianhui Bu,\* and Pingyun Feng\*



## Articles

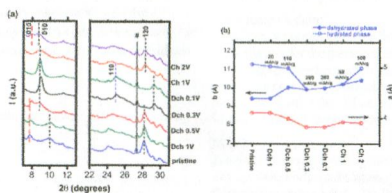
### Nanoscale Spin-State Ordering in $\text{LaCoO}_3$ Epitaxial Thin Films

Ji-Hwan Kwon, Woo Seok Choi, Young-Kyun Kwon, Ranju Jung, Jian-Min Zuo, Ho Nyung Lee, and Miyoung Kim\*



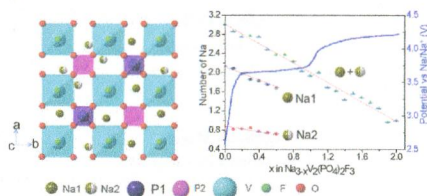
### Lepidocrocite-type Layered Titanate Structures: New Lithium and Sodium Ion Intercalation Anode Materials

Mona Shirpour, Jordi Cabana, and Marca Doeff\*



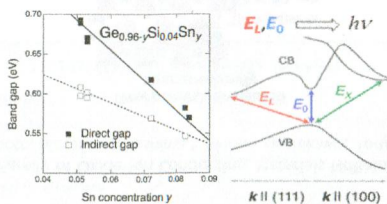
Local Structure and Dynamics in the Na Ion Battery Positive Electrode Material  $\text{Na}_3\text{V}_2(\text{PO}_4)_2\text{F}_3$ 

Zigeng Liu, Yan-Yan Hu, Matthew T. Dunstan, Hua Huo, Xiaogang Hao, Huan Zou, Guiming Zhong, Yong Yang,\* and Clare P. Grey\*



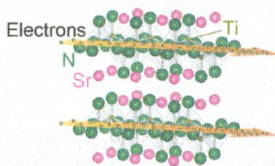
## Development of Light Emitting Group IV Ternary Alloys on Si Platforms for Long Wavelength Optoelectronic Applications

Liyang Jiang, Chi Xu, James D. Gallagher, Ruben Favaro, Toshi Aoki, José Menéndez, and John Kouvetakis\*



## Two-Dimensional Layered Complex Nitrides as a New Class of Thermoelectric Materials

Isao Ohkubo\* and Takao Mori

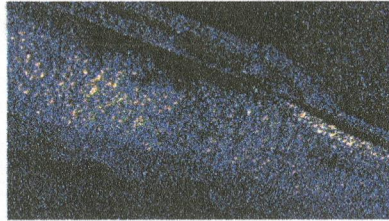


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dx.doi.org/10.1021/cm403846a

### Effects of MgO Coating on the Structural and Electrochemical Characteristics of LiCoO<sub>2</sub> as Cathode Materials for Lithium Ion Battery

Jae-Hyun Shim, Sanghun Lee,\* and Sung Soo Park\*

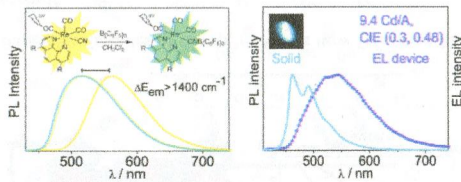


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dx.doi.org/10.1021/cm4038654

### A Simple Design for Strongly Emissive Sky-Blue Phosphorescent Neutral Rhenium Complexes: Synthesis, Photophysics, and Electroluminescent Devices

Wing-Kin Chu, Chi-Chiu Ko,\* Kin-Cheung Chan, Shek-Man Yiu, Fu-Lung Wong, Chun-Sing Lee, and V. A. L. Roy\*

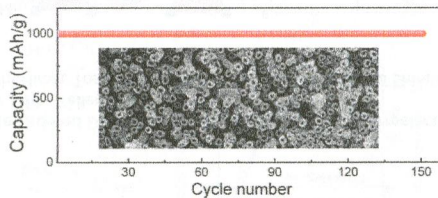


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dx.doi.org/10.1021/cm5004966

### Enhanced Cyclability of Li-O<sub>2</sub> Batteries Based on TiO<sub>2</sub> Supported Cathodes with No Carbon or Binder

Guangyu Zhao, Runwei Mo, Baoyu Wang, Li Zhang, and Kening Sun\*

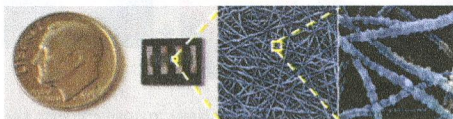


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dx.doi.org/10.1021/cm4041067

### Galvanically Displaced Ultralong Pb<sub>3</sub>Se<sub>3</sub>Ni<sub>2</sub> Hollow Nanofibers with High Thermopower

Miluo Zhang, Jiwon Kim, Seil Kim, Hosik Park, Hyunsung Jung, N. George Ndiror-Angwafor, Jaehong Lim, Yongho Choa,\* and Nosang V. Myung\*

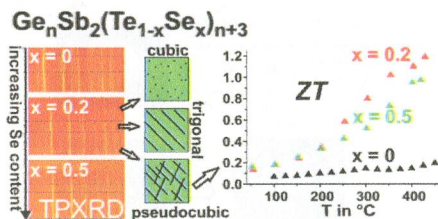




### Enhancing the Thermoelectric Properties of Germanium Antimony Tellurides by Substitution with Selenium in Compounds

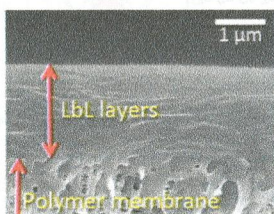
$\text{Ge}_n\text{Sb}_2(\text{Te}_{1-x}\text{Se}_x)_{n+3}$  ( $0 \leq x \leq 0.5$ ;  $n \geq 7$ )

Tobias Rosenthal, Philipp Urban, Kathleen Nimrich, Ludwig Schenk, Johannes de Boor, Christian Stiewe, and Oliver Oeckler\*



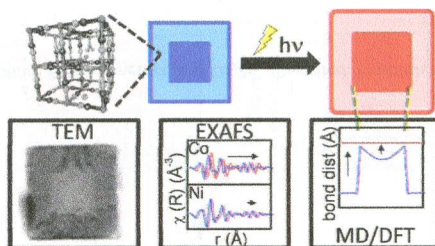
### Li-Anode Protective Layers for Li Rechargeable Batteries via Layer-by-Layer Approaches

Sun Hwa Lee, Jonathon R. Harding, David S. Liu, Julio M. D'Arcy, Yang Shao-Horn, and Paula T. Hammond\*



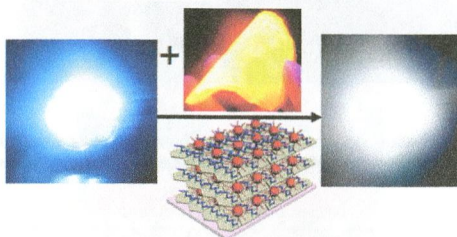
### X-ray Absorption Study of Structural Coupling in Photomagnetic Prussian Blue Analogue Core@Shell Particles

Daniel M. Pajerowski,\* Bruce Ravel, Carissa H. Li, Matthieu F. Dumont, and Daniel R. Talham



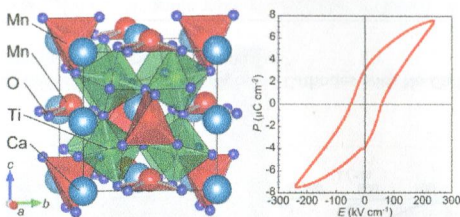
### Quantum Dots-Based Flexible Films and Their Application as the Phosphor in White Light-Emitting Diodes

Ruizheng Liang, Dongpeng Yan, Rui Tian, Xuejiao Yu, Wenyong Shi, Chunyang Li, Min Wei,\* David G. Evans, and Xue Duan



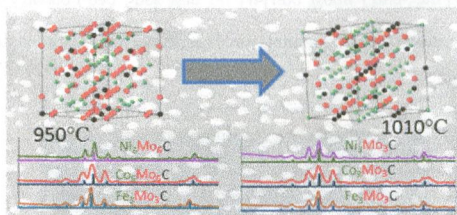
### High-Pressure Synthesis of A-Site Ordered Double Perovskite $\text{CaMnTi}_2\text{O}_6$ and Ferroelectricity Driven by Coupling of A-Site Ordering and the Second-Order Jahn–Teller Effect

Akihisa Aimi, Daisuke Mori, Ko-ichi Hiraki, Toshihiro Takahashi, Yue Jin Shan, Yuichi Shirako, Jianshi Zhou, and Yoshiyuki Inaguma\*



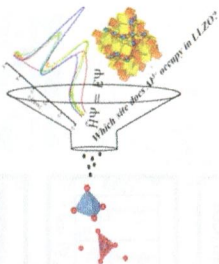
### General Synthesis Method for Bimetallic Carbides of Group VIIIA First Row Transition Metals with Molybdenum and Tungsten

Yagya N. Regmi and Brian M. Leonard\*

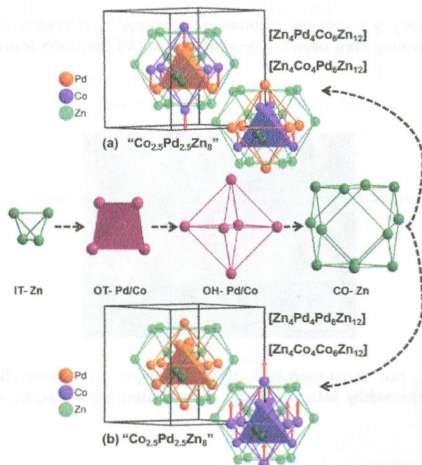


DFT Study of the Role of  $\text{Al}^{3+}$  in the Fast Ion-Conductor  $\text{Li}_{7-3x}\text{Al}^{3+}_x\text{La}_3\text{Zr}_2\text{O}_{12}$  Garnet

Daniel Rettenwander,\* Peter Blaha, Robert Laskowski, Karlheinz Schwarz, Patrick Bottke, Martin Wilkening, Charles A. Geiger, and Georg Amthauer

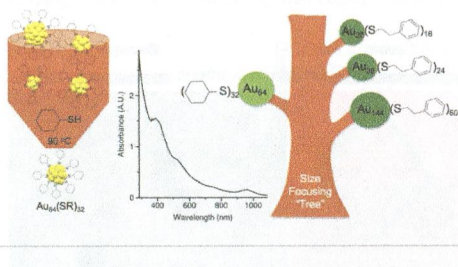
New Co–Pd–Zn  $\gamma$ -Brasses with Dilute Ferrimagnetism and  $\text{Co}_2\text{Zn}_{11}$  Revisited: Establishing the Synergism between Theory and Experiment

Weiwei Xie and Gordon J. Miller\*

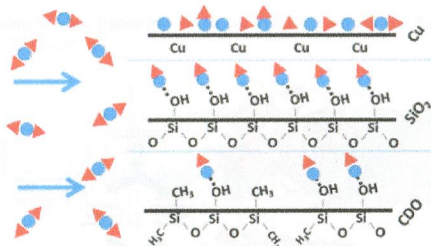




**Magic Size Au<sub>64</sub>(S-C<sub>6</sub>H<sub>11</sub>)<sub>32</sub> Nanocluster Protected by Cyclohexanethiolate**  
Chenjie Zeng, Yuxiang Chen, Gao Li, and Rongchao Jin\*

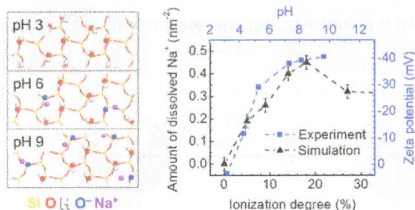


**XPS Investigation of the Atomic Layer Deposition Half Reactions of Bis(N-tert-butyl-N'-ethylpropionamido) Cobalt(II)**  
Tyler D.-M. Elko-Hansen and John G. Ekerdt\*



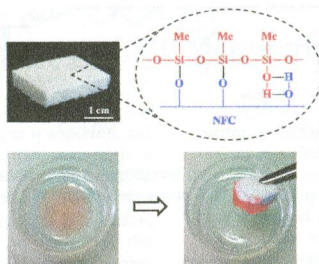
**Force Field and a Surface Model Database for Silica to Simulate Interfacial Properties in Atomic Resolution**

Fateme S. Emami, Valeria Puddu, Rajiv J. Berry, Vikas Varshney, Siddharth V. Patwardhan, Carole C. Perry,\* and Hendrik Heinz\*



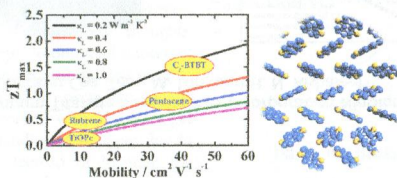
### Ultralightweight and Flexible Silylated Nanocellulose Sponges for the Selective Removal of Oil from Water

Zheng Zhang, Gilles Sèbe, Daniel Rentsch, Tanja Zimmermann, and Philippe Tingaut\*



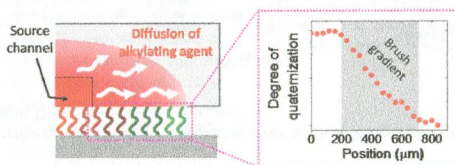
### Search for Organic Thermoelectric Materials with High Mobility: The Case of 2,7-Dialkyl[1]benzothieno[3,2-b][1]benzothiophene Derivatives

Wen Shi, Jianming Chen, Jinyang Xi, Dong Wang,\* and Zhigang Shuai\*



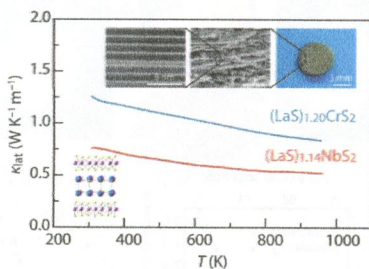
### General Method for Forming Micrometer-Scale Lateral Chemical Gradients in Polymer Brushes

Hyung-Jun Koo, Kristopher V. Waynant, Chunjie Zhang, Richard T. Haasch, and Paul V. Braun\*



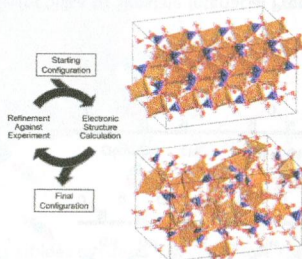
### Microstructural Control and Thermoelectric Properties of Misfit Layered Sulfides $(\text{LaS})_{1+m}\text{TS}_2$ ( $T = \text{Cr, Nb}$ ): The Natural Superlattice Systems

Priyanka Jood, Michihiro Ohta,\* Hiroataka Nishiate, Atsushi Yamamoto, Oleg I. Lebedev, David Berthebaud, Koichiro Suekuni, and Masaru Kunii



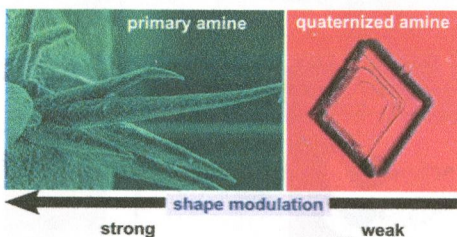
### Uncovering the True Atomic Structure of Disordered Materials: The Structure of a Hydrated Amorphous Magnesium Carbonate $(\text{MgCO}_3 \cdot 3\text{D}_2\text{O})$

Claire E. White,\* Neil J. Henson, Luke L. Daemen, Monika Hartl, and Katharine Page



### Systematic Study of the Effects of Polyamines on Calcium Carbonate Precipitation

Anna S. Schenk, Bram Cantaert, Yi-Youon Kim, Yuting Li, Elizabeth S. Read, Mona Semsarilar, Steven P. Armes, and Fiona C. Meldrum\*

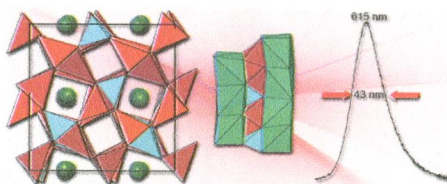




## Toward New Phosphors for Application in Illumination-Grade White pc-LEDs: The Nitridomagnesiumsilicates

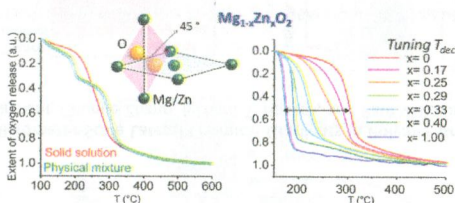
Ca[Mg<sub>3</sub>SiN<sub>4</sub>]:Ce<sup>3+</sup>, Sr[Mg<sub>3</sub>SiN<sub>4</sub>]:Eu<sup>2+</sup>, and Eu[Mg<sub>3</sub>SiN<sub>4</sub>]

Sebastian Schmiechen, Hajnalka Schneider, Peter Wagatha, Cora Hecht, Peter J. Schmidt, and Wolfgang Schnick\*



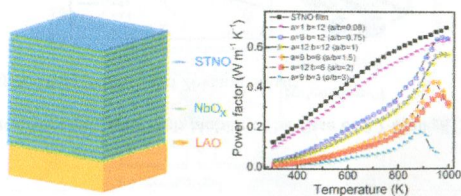
## Tuning the Oxygen Release Temperature of Metal Peroxides over a Wide Range by Formation of Solid Solutions

S. R. Lingampalli, K. Dileep, Ranjan Datta, and Ujjal K. Gautam\*



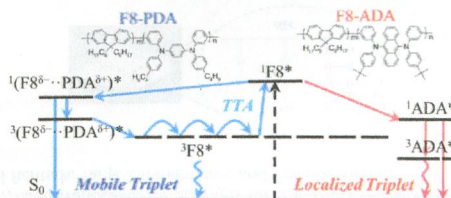
## Thermoelectric Properties of Strontium Titanate Superlattices Incorporating Niobium Oxide Nanolayers

S. R. Sarath Kumar, M. N. Hedhili, Dongkyu Cha, Terry M. Tritt, and H. N. Alshareef\*



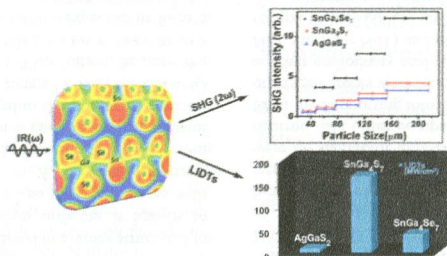
## Triplet Exciton Dynamics in Fluorene–Amine Copolymer Films

Yasunari Tamai, Hideo Ohkita,\* Hiroaki Bente, and Shinzaburo Ito



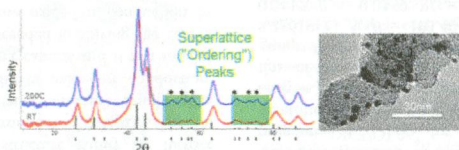
### SHG Materials $\text{SnGa}_4\text{Q}_7$ ( $\text{Q} = \text{S}, \text{Se}$ ) Appearing with Large Conversion Efficiencies, High Damage Thresholds, and Wide Transparencies in the Mid-Infrared Region

Zhong-Zhen Luo, Chen-Sheng Lin, Hong-Hua Cui, Wei-Long Zhang, Hao Zhang, Zhang-Zhen He, and Wen-Dan Cheng\*



### Ordered Intermetallic Pt–Sn Nanoparticles: Exploring Ordering Behavior across the Bulk Phase Diagram

Douglas Y. DeSario and Francis J. DiSalvo\*



### Oxidation-Induced Trapping of Drugs in Porous Silicon Microparticles

Nicole L. Fry, Gerry R. Boss, and Michael J. Sailor\*

