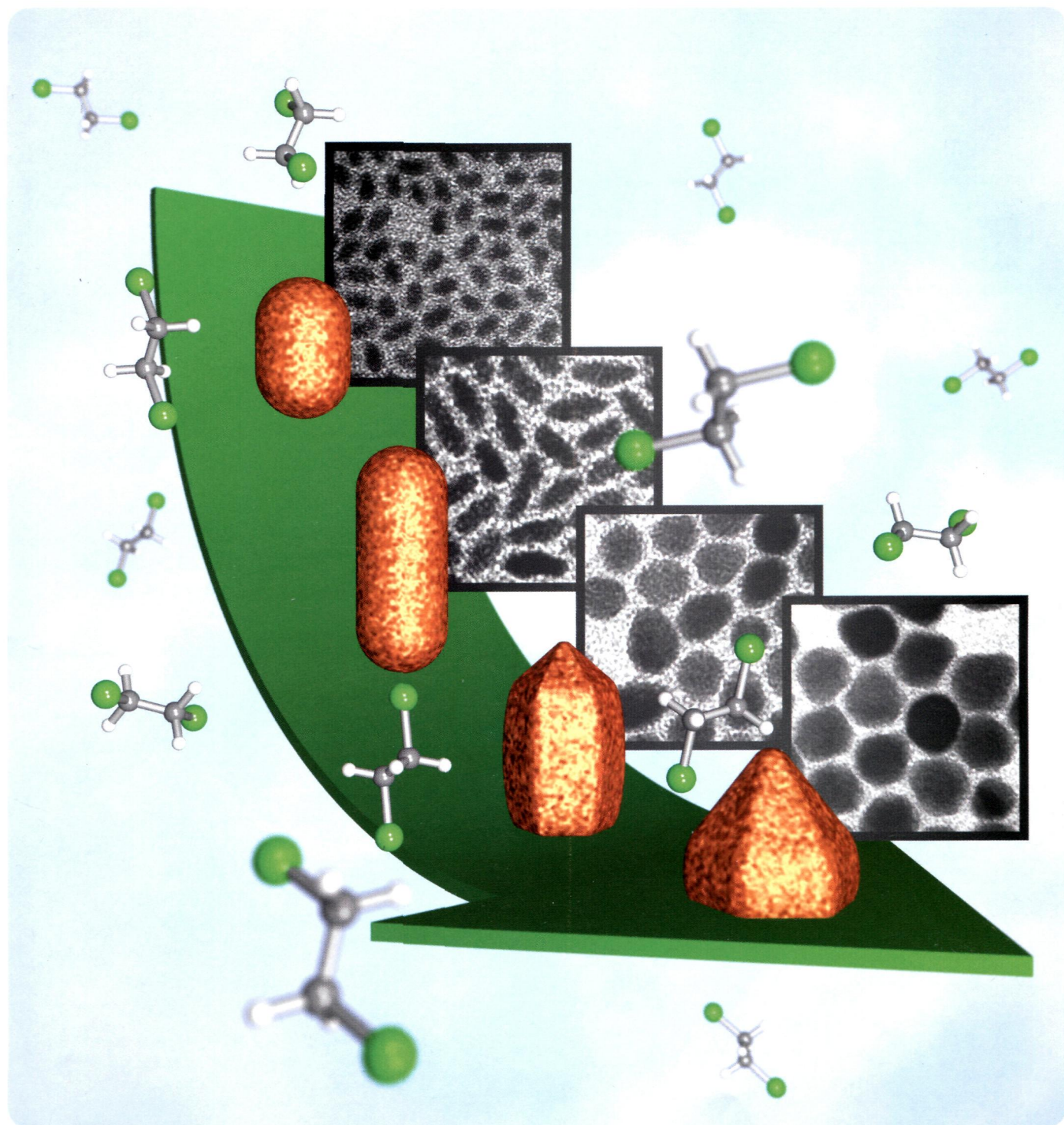


CHEMISTRY OF MATERIALS

MARCH 11, 2014 | VOLUME 26 | NUMBER 5 | pubs.acs.org/cm





ON THE COVER: Halogenated organic compounds, such as dichloroethane, represent a new degree of freedom in in-situ shaping of colloidal CdSe nanostructures. For more information, see “Shape Evolution of CdSe Nanoparticles Controlled by Halogen Compounds” by Michaela Meyns,* Fabiola Iacono, Cristina Palencia, Jan Geweke, Mauricio D. Coderch, Ursula E. A. Fittschen, José M. Gallego, Roberto Otero, Beatriz H. Juárez,* and Christian Klinke* (*Chem. Mater.* **2014**, *26*, 1813–1821).

Editorial

1765

[dx.doi.org/10.1021/cm500632c](https://doi.org/10.1021/cm500632c)

The Experimental Section: The Key to Longevity of Your Research

Jillian M. Buriak* and Brian Korgel

Communications

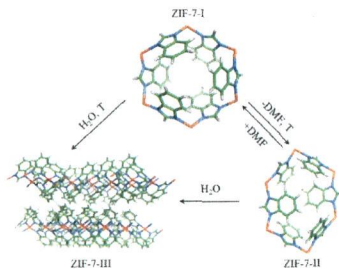
1767



[dx.doi.org/10.1021/cm500407f](https://doi.org/10.1021/cm500407f)

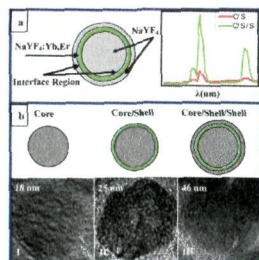
Phase Transitions in Zeolitic Imidazolate Framework 7: The Importance of Framework Flexibility and Guest-Induced Instability

Pu Zhao, Giulio I. Lampronti, Gareth O. Lloyd, Michael T. Wharmby, Sébastien Facq, Anthony K. Cheetham, and Simon A. T. Redfern*

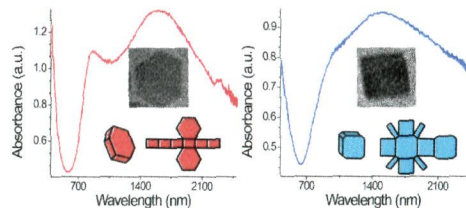


Articles

1770 **5** [dx.doi.org/10.1021/cm4023425](https://doi.org/10.1021/cm4023425)
Synthesis Protocols for δ -Doped $\text{NaYF}_4:\text{Yb},\text{Er}$
 Zhihua Li,* W. Park, G. Zorzetto, J.-S. Lemaire, and C. J. Summers*



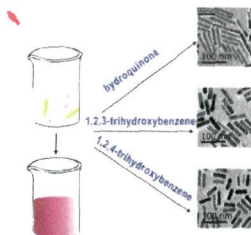
1779 **5** [dx.doi.org/10.1021/cm4030638](https://doi.org/10.1021/cm4030638)
Influence of Shape on the Surface Plasmon Resonance of Tungsten Bronze Nanocrystals
 Tracy M. Mattox, Amy Bergerud, Ankit Agrawal, and Delia J. Milliron*



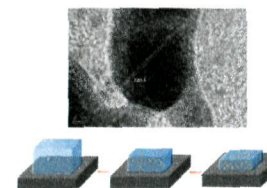
1785 **5** [dx.doi.org/10.1021/cm403098d](https://doi.org/10.1021/cm403098d)
Monodisperse Copper Nanocubes: Synthesis, Self-Assembly, and Large-Area Dense-Packed Films
 Hong-Jie Yang, Sheng-Yan He, Hsin-Lung Chen, and Hsing-Yu Tuan*



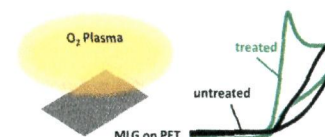
1794 **5** [dx.doi.org/10.1021/cm403109k](https://doi.org/10.1021/cm403109k)
Efficient and Facile Synthesis of Gold Nanorods with Finely Tunable Plasmonic Peaks from Visible to Near-IR Range
 Liming Zhang, Kai Xia, Zhuoxuan Lu, Guopeng Li, Juan Chen, Yan Deng, Song Li, Feimeng Zhou, and Nongyue He*



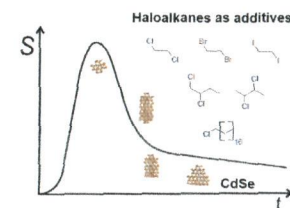
1799 **5** [dx.doi.org/10.1021/cm403227w](https://doi.org/10.1021/cm403227w)
Controllable Localized Surface Plasmonic Resonance Phenomena in Reduced Gold Oxide Films
 Yu-Lun Liu, Cheng-Yi Fang, Chen-Chieh Yu, Tai-Chi Yang, and Hsuen-Li Chen*



1807 **5** [dx.doi.org/10.1021/cm403501r](https://doi.org/10.1021/cm403501r)
Electroanalytical Sensing Properties of Pristine and Functionalized Multilayer Graphene
 Gareth P. Keeley,* Niall McEvoy, Hugo Nolan, Michael Holzinger, Serge Cosnier, and Georg S. Duesberg



1813 **5** [dx.doi.org/10.1021/cm4037082](https://doi.org/10.1021/cm4037082)
Shape Evolution of CdSe Nanoparticles Controlled by Halogen Compounds
 Michaela Meyns,* Fabiola Iacono, Cristina Palencia, Jan Geweke, Mauricio D. Coderch, Ursula E. A. Fittschen, José M. Gallego, Roberto Otero, Beatriz H. Juárez,* and Christian Klinker*



1822 **S**

dx.doi.org/10.1021/cm403787v

Sol–Gel Based Hydrophobic Antireflective Coatings on Organic Substrates: A Detailed Investigation of Ammonia Vapor Treatment (AVT)

Mickael Boudot, Vincent Gaud, Mélanie Louarn, Mohamed Selmane, and David Grosso*

1834 **S**

dx.doi.org/10.1021/cm403822w

Precise Engineering of Multifunctional PEGylated Polyester Nanoparticles for Cancer Cell Targeting and Imaging

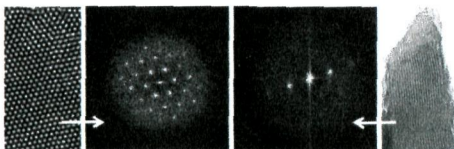
Nicolas Mackiewicz, Julien Nicolas,* Nadège Handké, Magali Noiray, Julie Mouglin, Cyril Daveu, Harivardhan Reddy Lakkireddy, Didier Bazile, and Patrick Couvreur

1848 **S**

dx.doi.org/10.1021/cm404014c

Electro-Assisted Self-Assembly of Cetyltrimethylammonium-Templated Silica Films in Aqueous Media: Critical Effect of Counteranions on the Morphology and Mesostructure Type

Yann Guillemin, Jaafar Ghanbaja, Emmanuel Aubert, Mathieu Etienne, and Alain Walcarius*

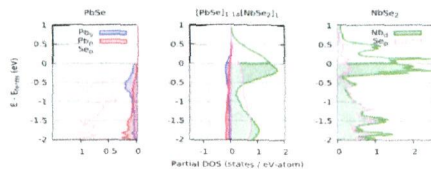


1859

dx.doi.org/10.1021/cm404018a

Charge Transfer between PbSe and NbSe₂ in [(PbSe)₁₋₁₄]_n(NbSe₂)₁ Ferreocrystalline Compounds

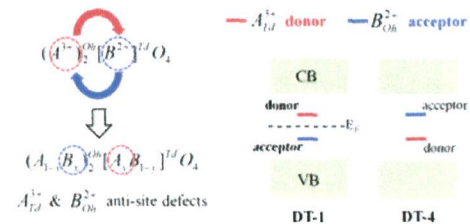
Matti B. Alemayehu, Gavin Mitchson, Jeffery Ditto, Ben E. Hanken, Mark Asta, and David C. Johnson*

1867 **S**

dx.doi.org/10.1021/cm404031k

Self-Doping and Electrical Conductivity in Spinel Oxides: Experimental Validation of Doping Rules

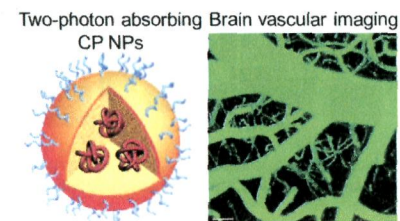
Yezhou Shi, Paul F. Ndione, Linda Y. Lim, Dimosthenis Sokaras, Tsu-Chien Weng, Arpun R. Nagaraja, Andreas G. Karydas, John D. Perkins, Thomas O. Mason, David S. Ginley, Alex Zunger, and Michael F. Toney*

1874 **S**

dx.doi.org/10.1021/cm4040374

Micelle/Silica Co-protected Conjugated Polymer Nanoparticles for Two-Photon Excited Brain Vascular Imaging

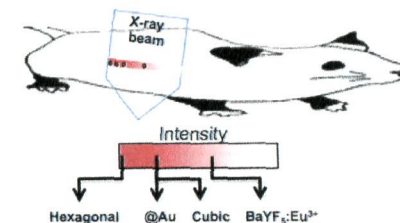
Junlong Geng, Chi Ching Goh, Nikodem Tomczak, Jie Liu, Rongrong Liu, Lin Ma, Lai Guan Ng, Gagik G. Gurzadyan, and Bin Liu*

1881 **S**

dx.doi.org/10.1021/cm404044n

NaGdF₄:Eu³⁺ Nanoparticles for Enhanced X-ray Excited Optical Imaging

L. Sudheendra, Gautom K. Das, Changqing Li, Daniel Stark, Jake Cena, Simon Chery, and Ian M. Kennedy*

X-ray luminescence from NaGdF₄:Eu³⁺ nanoparticles

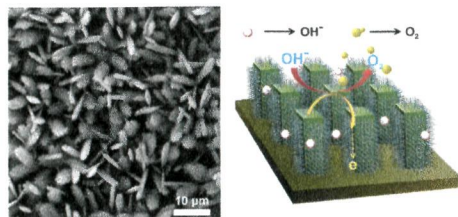
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dx.doi.org/10.1021/cm4040903

Hierarchical Zn₃Co_{3-x}O₄ Nanoarrays with High Activity for Electrocatalytic Oxygen Evolution

Xijun Liu, Zheng Chang, Liang Luo, Tianhao Xu, Xiaodong Lei, Junfeng Liu,* and Xiaoming Sun*



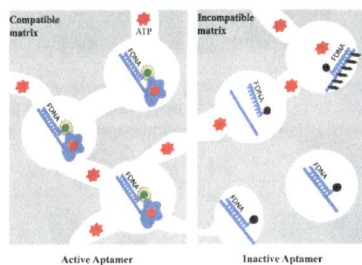
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dx.doi.org/10.1021/cm404114g

Fluorescence Analysis of the Properties of Structure-Switching DNA Aptamers Entrapped in Sol–Gel-Derived Silica Materials

Christy Y. Hui, Yingfu Li,* and John D. Brennan*



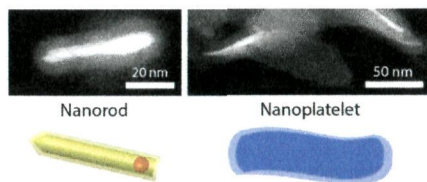
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dx.doi.org/10.1021/cm404122f

Method To Incorporate Anisotropic Semiconductor Nanocrystals of All Shapes in an Ultrathin and Uniform Silica Shell

Eline M. Hutter, Francesca Pietra, Relinde J. A. van Dijk - Moes, Dariusz Mitoraj, Johannes D. Meeldijk, Celso de Mello Donegá,* and Daniël Vanmaekelbergh*



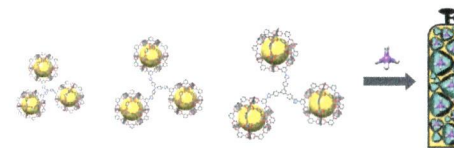
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dx.doi.org/10.1021/cm404155s

Isorecticular Series of (3,24)-Connected Metal–Organic Frameworks: Facile Synthesis and High Methane Uptake Properties

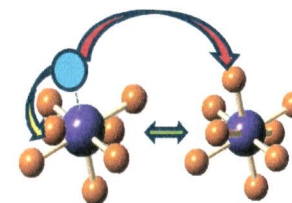
Gokhan Barin, Vaiva Krungleviciute, Diego A. Gomez-Gualdrón, Amy A. Sarjeant, Randall Q. Snurr, Joseph T. Hupp, Taner Yildirim,* and Omar K. Farha*



1918

Investigation of the Potential Energy Landscape for Vacancy Dynamics in Sc-Doped CeO₂

Sabyasachi Sen,* Trenton Edwards, Seong K. Kim, and Sangtae Kim*



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dx.doi.org/10.1021/cm500557f

Phase-Pure Crystalline Zinc Phosphide Nanoparticles: Synthetic Approaches and Characterization

Md Hosnay Mobarok, Erik J. Lubber, Guy M. Bernard, Li Peng, Roderick E. Wasylshen, and Jillian M. Buriak*

