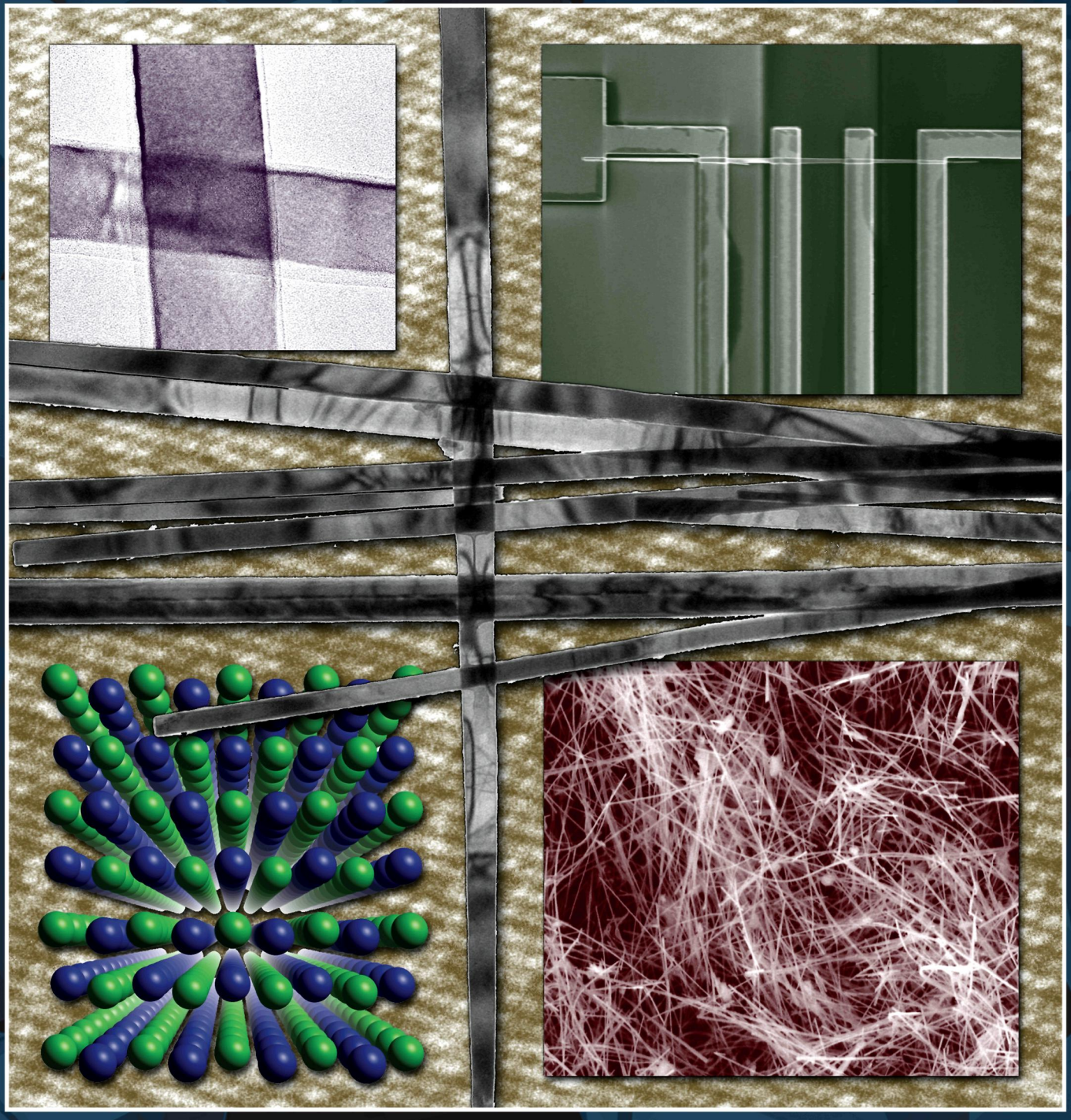
CHEMISTRY OF MATERIALS

25th Anniversary

JANUARY 8, 2013 VOLUME 25 NUMBER 1 pubs.acs.org/cm



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CHEMISTRY OF MATERIALS | 25th Anniversary

January 8, 2013
Volume 25, Issue 1
Pages 1-116

2012: A Banner Year for *Chemistry of Materials*

Jean-Luc Bredas

pp 1-2
Publication Date (Web): January 8, 2013 (Editorial)
DOI: 10.1021/cm303809a

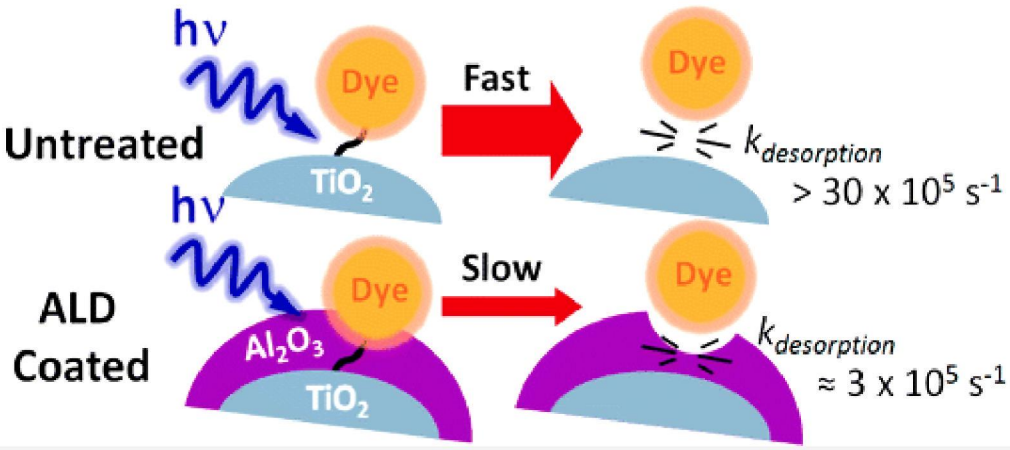
COMMUNICATIONS

Stabilization of $[Ru(bpy)_2(4,4'\text{-}(PO_3H_2)bpy)]^{2+}$ on Mesoporous TiO_2 with Atomic Layer Deposition of Al_2O_3

Kenneth Hanson, Mark D. Losego, Berç Kalanyan, Dennis L. Ashford, Gregory N. Parsons, and Thomas J. Meyer

pp 3-5
Publication Date (Web): December 7, 2012 (Communication)
DOI: 10.1021/cm303172w

Section:
Electrochemical, Radiational, and Thermal Energy Technology



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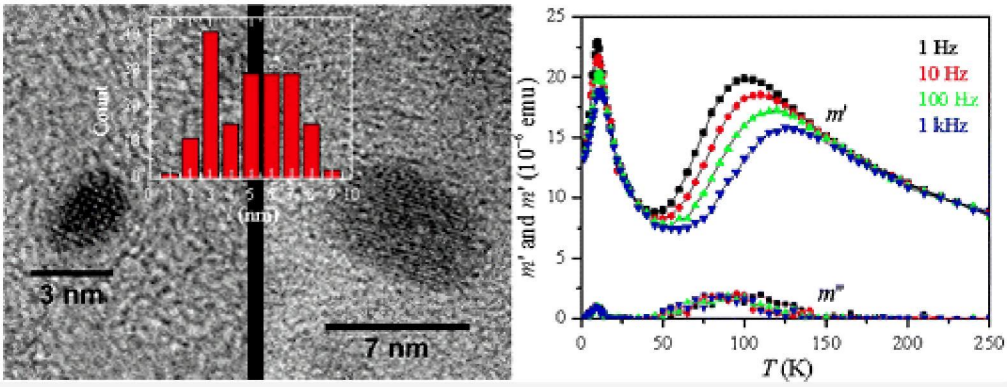
ARTICLES

Colossal Reduction in Curie Temperature Due to Finite-Size Effects in $CoFe_2O_4$ Nanoparticles

Victor Lopez-Dominguez, Joan Manel Hernàndez, Javier Tejada, and Ronald F. Ziolo

pp 6-11
Publication Date (Web): November 14, 2012 (Article)
DOI: 10.1021/cm301927z

Section:
Magnetic Phenomena



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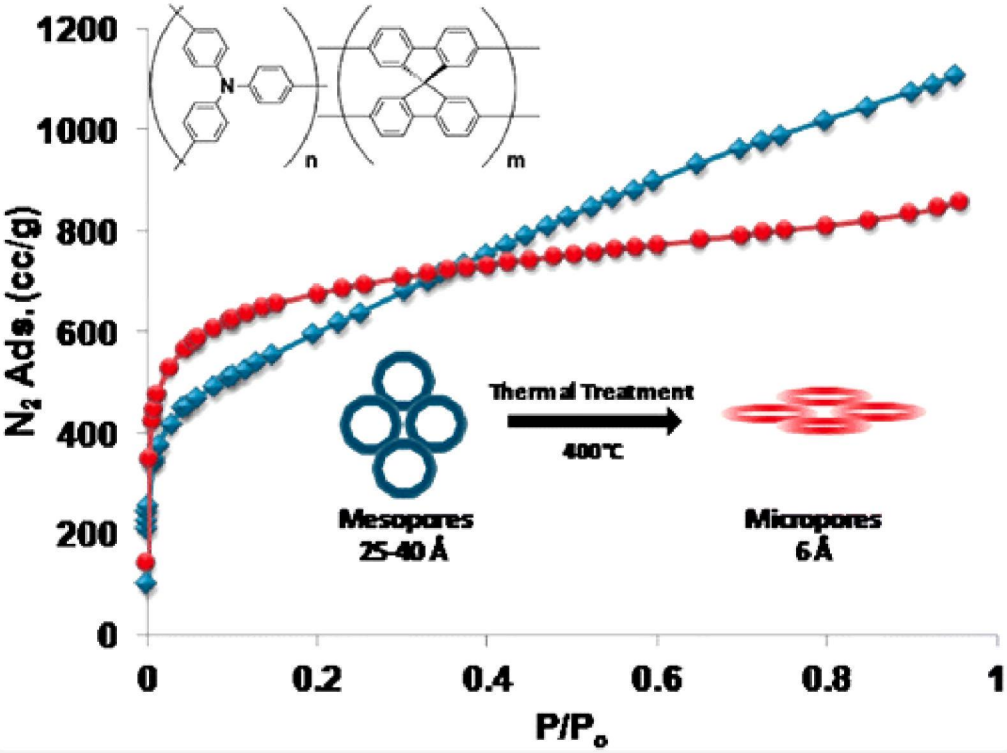
Thermally Enhancing the Surface Areas of Yamamoto-Derived Porous Organic Polymers

Brad G. Hauser, Omar K. Farha, Jason Exley, and Joseph T. Hupp

pp 12-16
Publication Date (Web): December 4, 2012 (Article)
DOI: 10.1021/cm3022566
Section:
Chemistry of Synthetic High Polymers



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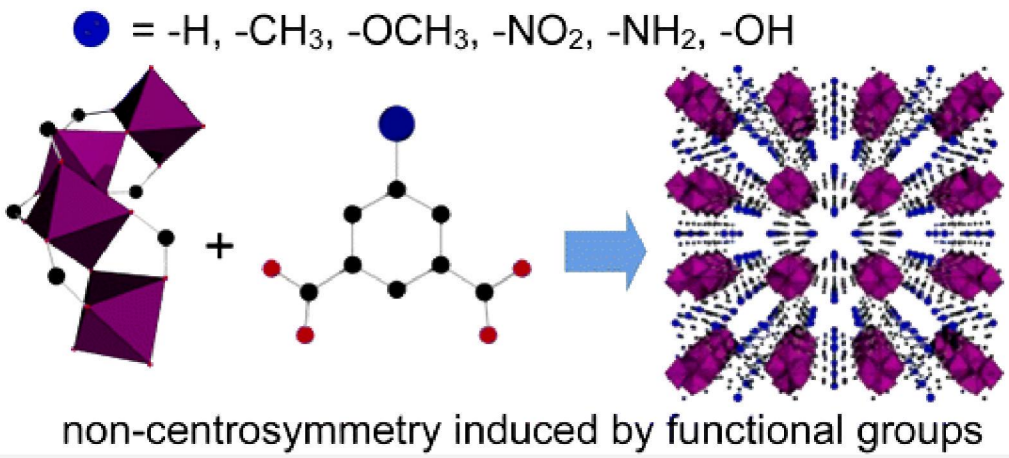
Structures, Sorption Characteristics, and Nonlinear Optical Properties of a New Series of Highly Stable Aluminum MOFs

Helge Reinsch, Monique A. van der Veen, Barbara Gil, Bartosz Marszalek, Thierry Verbiest, Dirk de Vos, and Norbert Stock

pp 17-26
Publication Date (Web): November 28, 2012 (Article)

DOI: 10.1021/cm3025445

Section:
Inorganic Chemicals and Reactions



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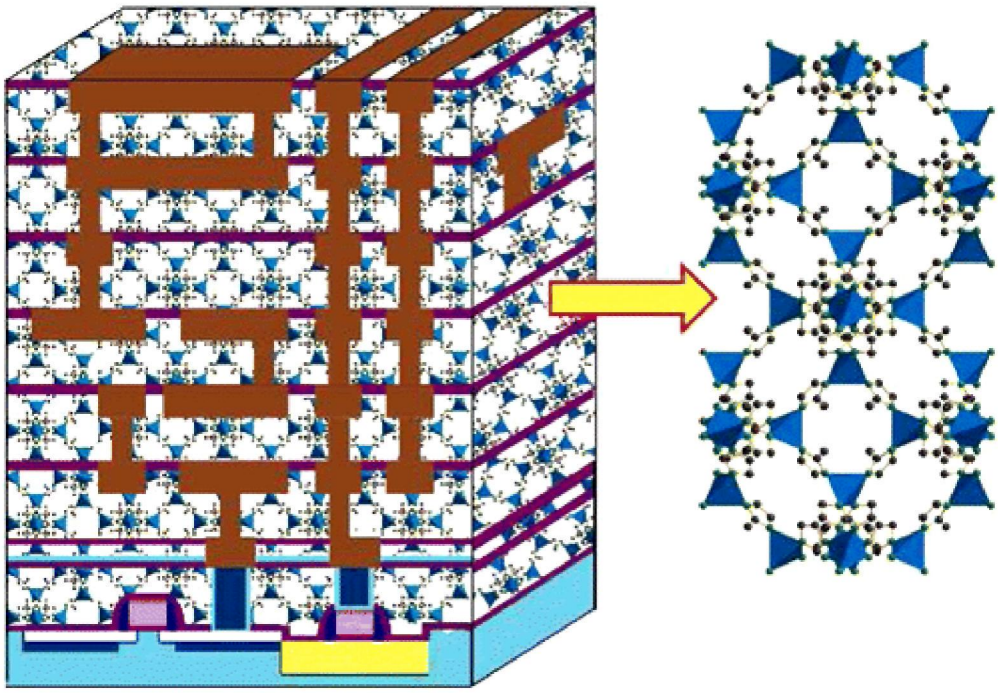
Metal-Organic Framework ZIF-8 Films As Low-κ Dielectrics in Microelectronics

Salvador Eslava, Liping Zhang, Santiago Esconjauregui, Junwei Yang, Kris Vanstreels, Mikhail R. Baklanov, and Eduardo Saiz

pp 27-33
Publication Date (Web): December 5, 2012 (Article)
DOI: 10.1021/cm302610z

Section:
Electric Phenomena



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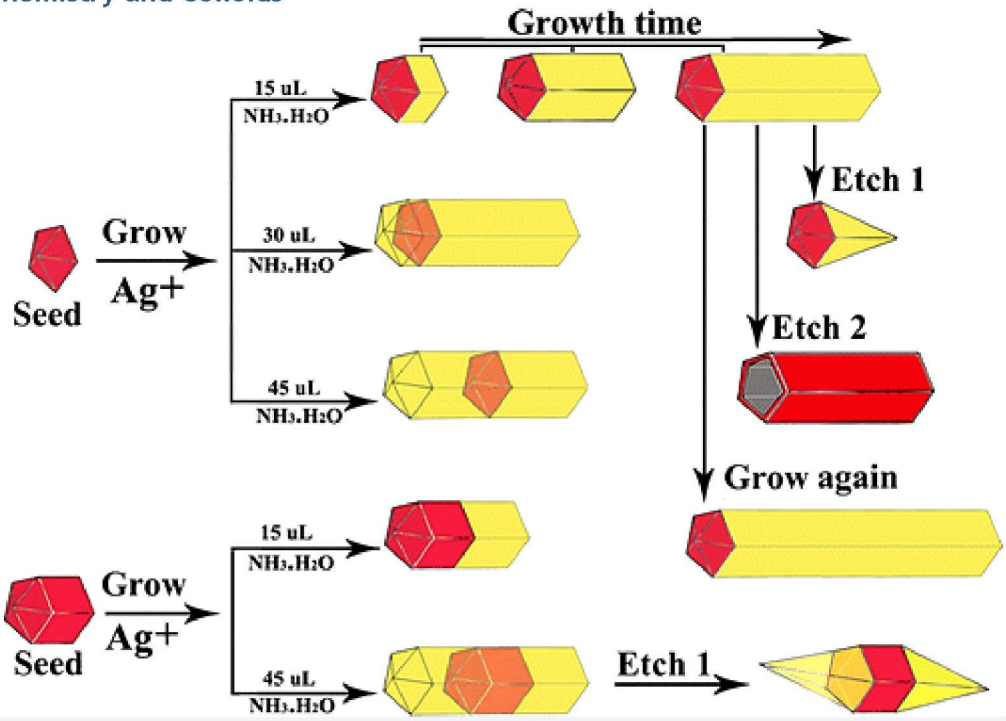
Controlled Growth of Ag/Au Bimetallic Nanorods through Kinetics Control

Yun Yang, Wenfang Wang, Xingliang Li, Wei Chen, Nini Fan, Chao Zou, Xian Chen, Xiangju Xu, Lijie Zhang, and Shaoming Huang

pp 34-41
Publication Date (Web): December 6, 2012 (Article)

DOI: 10.1021/cm302928z

Section:
Surface Chemistry and Colloids



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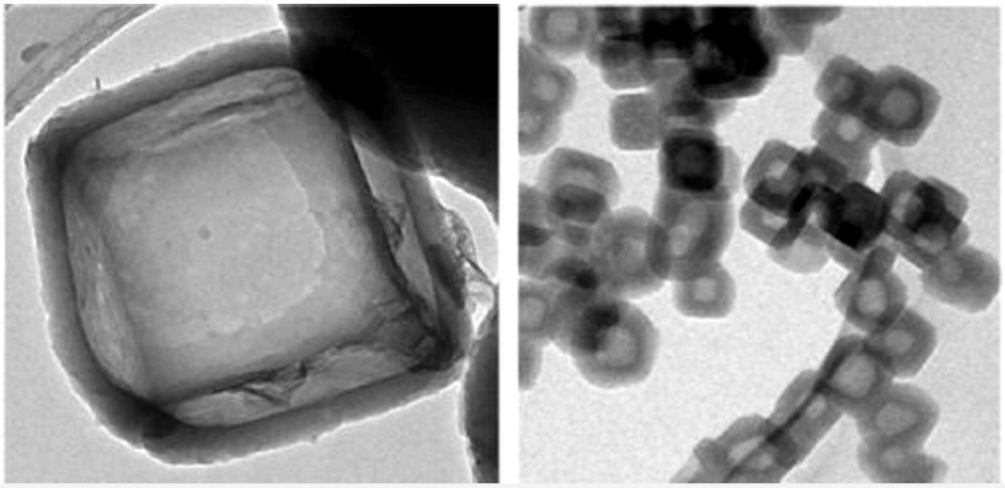
$Rb_jM_k[Fe(CN)_6]_l$ (M = Co, Ni) Prussian Blue Analogue Hollow Nanocubes: a New Example of a Multilevel Pore System

Olivia N. Risset, Elisabeth S. Knowles, Shengqian Ma, Mark W. Meisel, and Daniel R. Talham

pp 42-47
Publication Date (Web): December 8, 2012 (Article)
DOI: 10.1021/cm302995w

Section:
Inorganic Chemicals and Reactions



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Relaxor-like Dielectric Behavior in Stoichiometric Sillenite $Bi_{12}SiO_{20}$

Yu Hu and Derek C. Sinclair

pp 48-54

Publication Date (Web): December 11, 2012 (Article)
DOI: 10.1021/cm3031363
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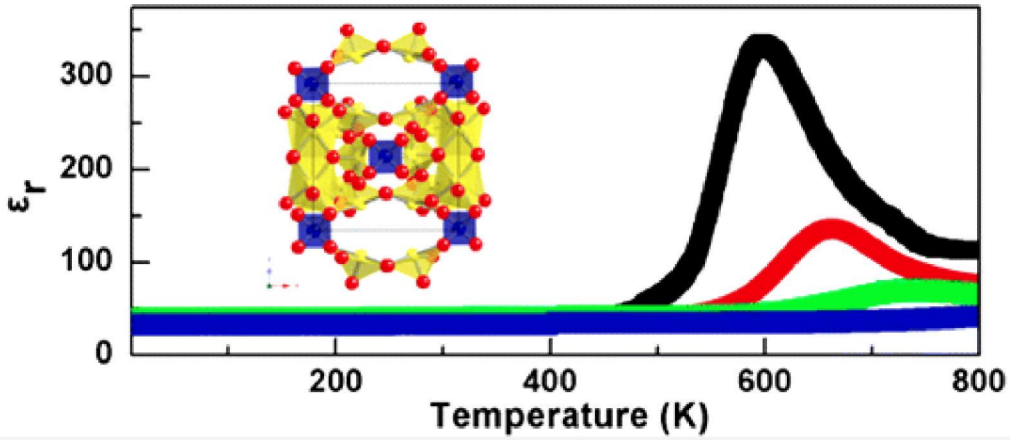
Electric Phenomena



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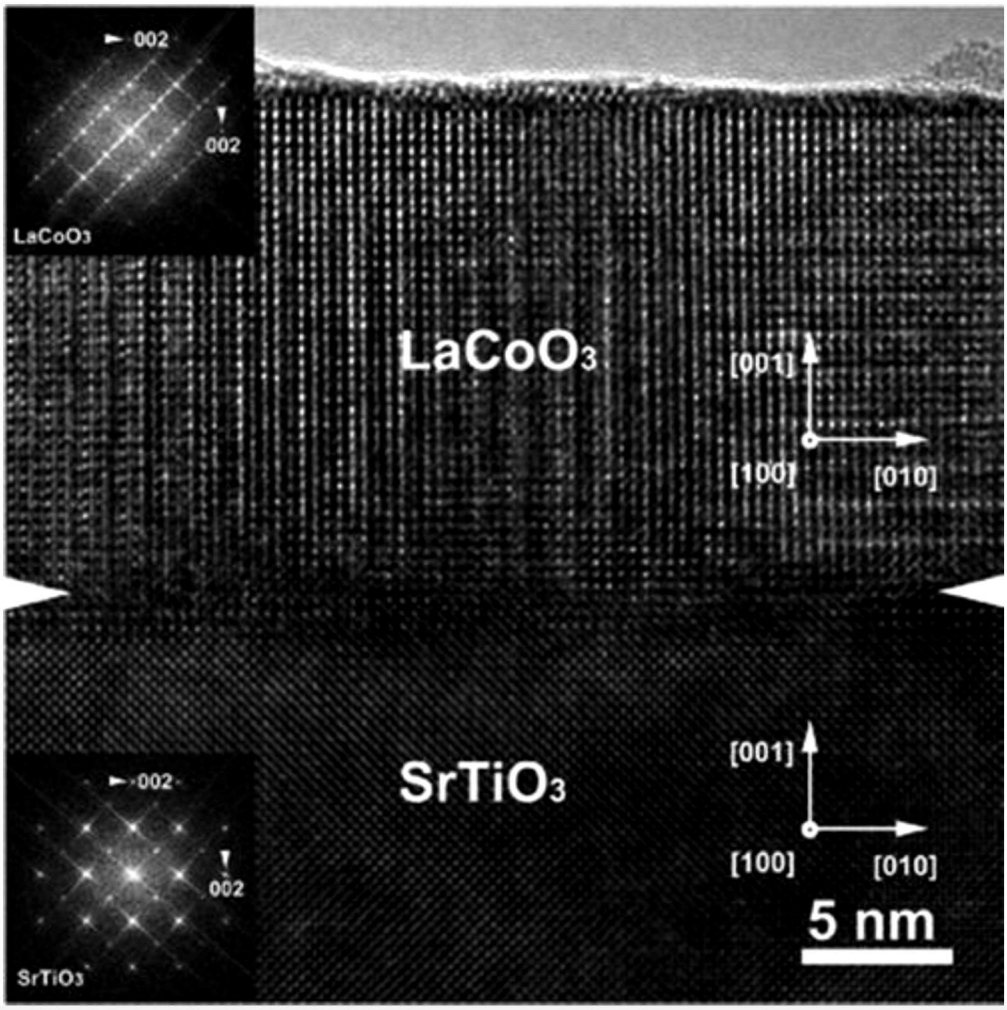
Strain-Induced Ferromagnetism and Magnetoresistance in Epitaxial Thin Films of $LaCoO_3$ Prepared by Polymer-Assisted Deposition

Francisco Rivadulla, Zhenxing Bi, Eve Bauer, Beatriz Rivas-Murias, José Manuel Vila-Fungueiriño, and Quanxi Jia

pp 55-58
Publication Date (Web): December 13, 2012 (Article)
DOI: 10.1021/cm3031472
Section:
Electric Phenomena



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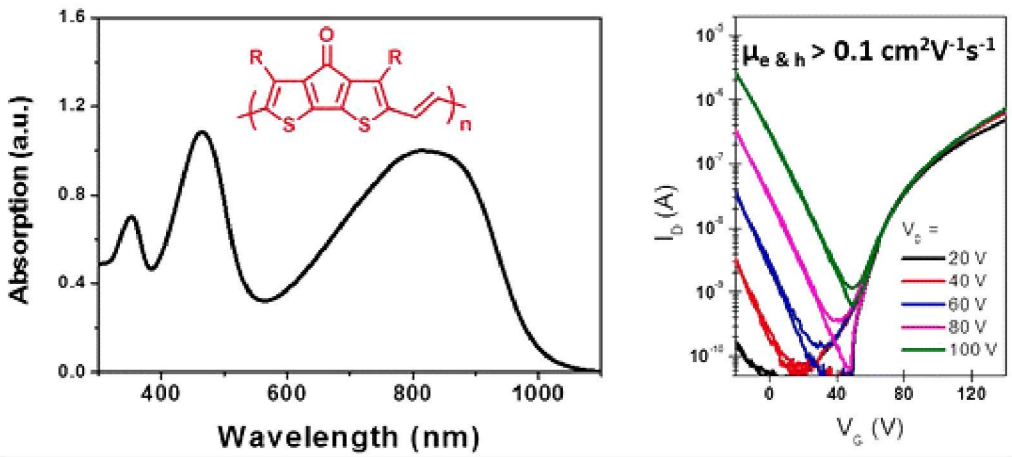
Near Infrared Absorbing Soluble Poly(cyclopenta[2,1-b:3,4-b′]dithiophen-4-one)vinylene Polymers Exhibiting High Hole and Electron Mobilities in Ambient Air

Zhuping Fei, Xiang Gao, Jeremy Smith, Pichaya Pattanasattayavong, Ester Buchaca Domingo, Natalie Stingelin, Scott E Watkins, Thomas D. Anthopoulos, R. Joseph Kline, and Martin Heeney

pp 59-68
Publication Date (Web): December 10, 2012 (Article)
DOI: 10.1021/cm303166z
Section:
Chemistry of Synthetic High Polymers



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Soluble, Chloride-Terminated CdSe Nanocrystals: Ligand Exchange Monitored by ^{1}H and ^{31}P NMR Spectroscopy

Nicholas C. Anderson and Jonathan S. Owen

pp 69-76
Publication Date (Web): December 7, 2012 (Article)
DOI: 10.1021/cm303219a
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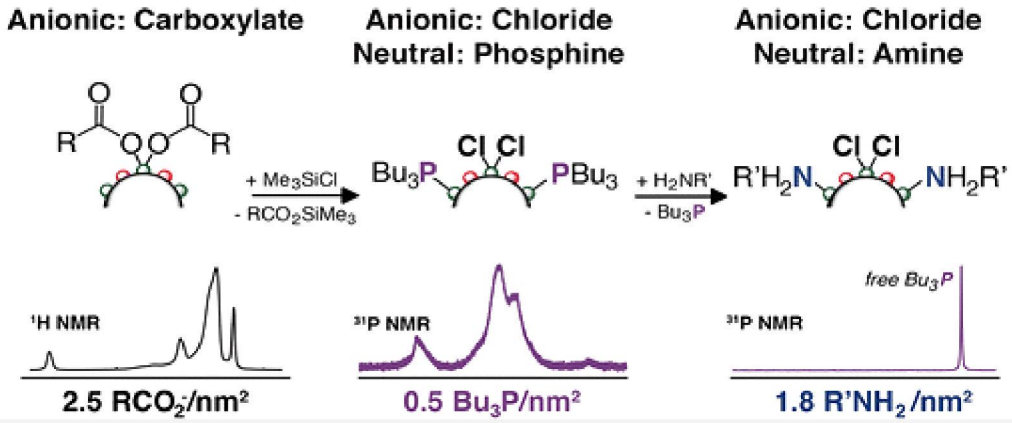
Inorganic Chemicals and Reactions



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Li–O_2 Battery Degradation by Lithium Peroxide (Li_2O_2): A Model Study

Reza Younesi, Maria Hahlin, Fredrik Björefors, Patrik Johansson, and Kristina Edström

pp 77-84
Publication Date (Web): December 11, 2012 (Article)
DOI: 10.1021/cm303226g
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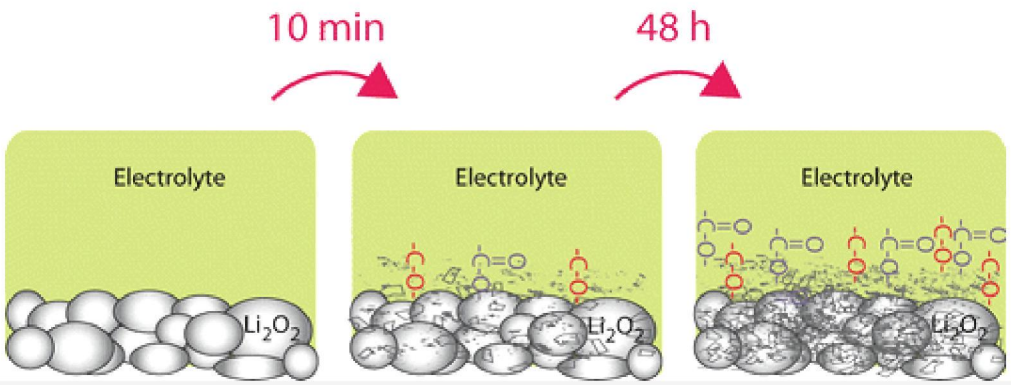
Electrochemical, Radiational, and Thermal Energy Technology



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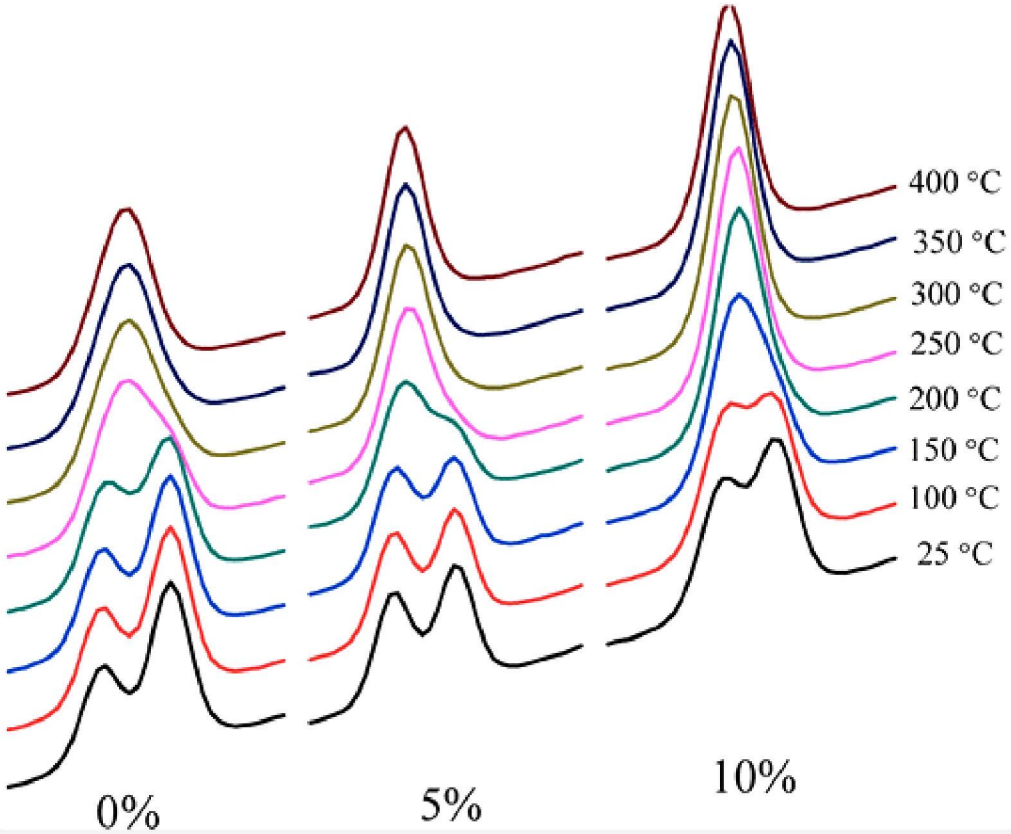
Why Substitution Enhances the Reactivity of $LiFePO_4$

Fredrick Omenya, Natasha A. Chernova, Ruibo Zhang, Jin Fang, Yiqing Huang, Fred Cohen, Nathaniel Dobrzynski, Sanjaya Senanayake, Wenqian Xu, and M. Stanley Whittingham

pp 85-89
Publication Date (Web): December 6, 2012 (Article)
DOI: 10.1021/cm303259j

Section:
Electrochemical, Radiational, and Thermal Energy Technology



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Sensitized Photografting of Diazonium Salts by Visible Light.

Meriem Bouriga, Mohamed M. Chehimi, Catherine Combellas, Philippe Decorse, Frédéric Kanoufi, Alain Deronzier, and Jean Pinson

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Publication Date (Web): December 3, 2012 (Article)
DOI: 10.1021/cm3032994

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Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes

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Mesoporous Silica Hollow Spheres with Ordered Radial Mesochannels by a Spontaneous Self-Transformation Approach

Zhaogang Teng, Xiaodan Su, Yuanyi Zheng, Jing Sun, Guotao Chen, Congcong Tian, Jiandong Wang, Hao Li, Yane Zhao, and Guangming Lu

pp 98-105
Publication Date (Web): December 14, 2012 (Article)
DOI: 10.1021/cm303338v

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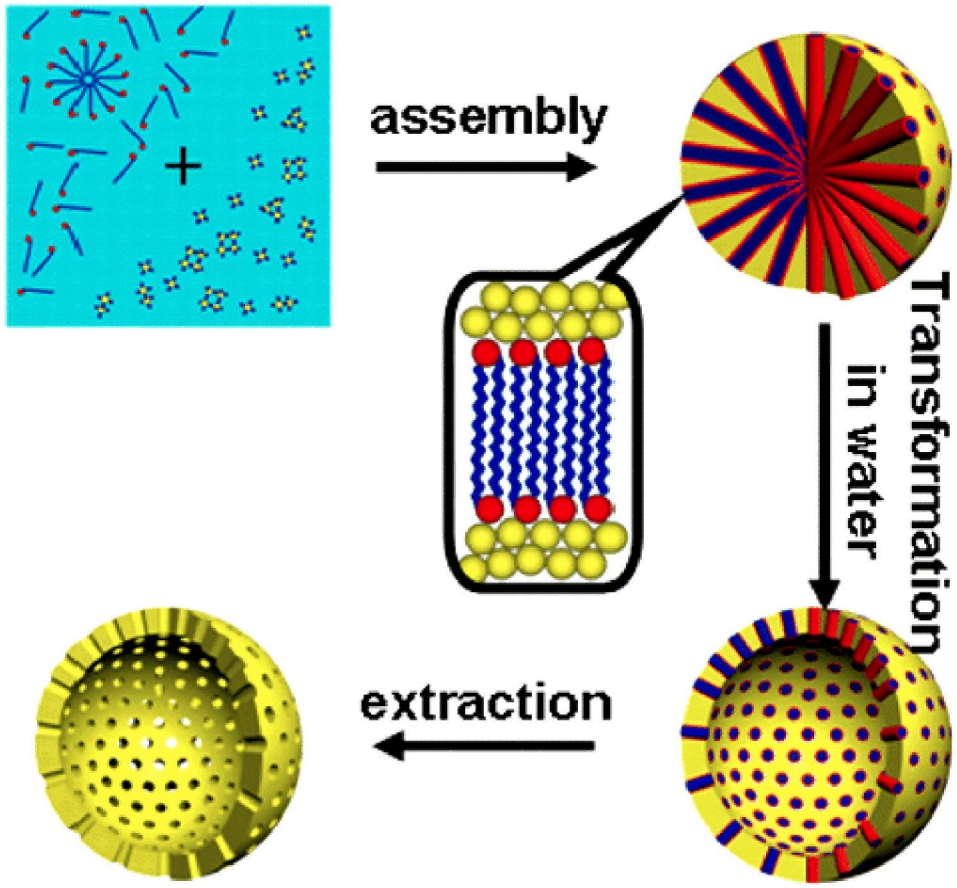
Surface Chemistry and Colloids



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Successive Layer-by-Layer Strategy for Multi-Shell Epitaxial Growth: Shell Thickness and Doping Position Dependence in Upconverting Optical Properties

Xiaomin Li, Dengke Shen, Jianping Yang, Chi Yao, Renchao Che, Fan Zhang, and Dongyuan Zhao

pp 106-112
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DOI: 10.1021/cm3033498

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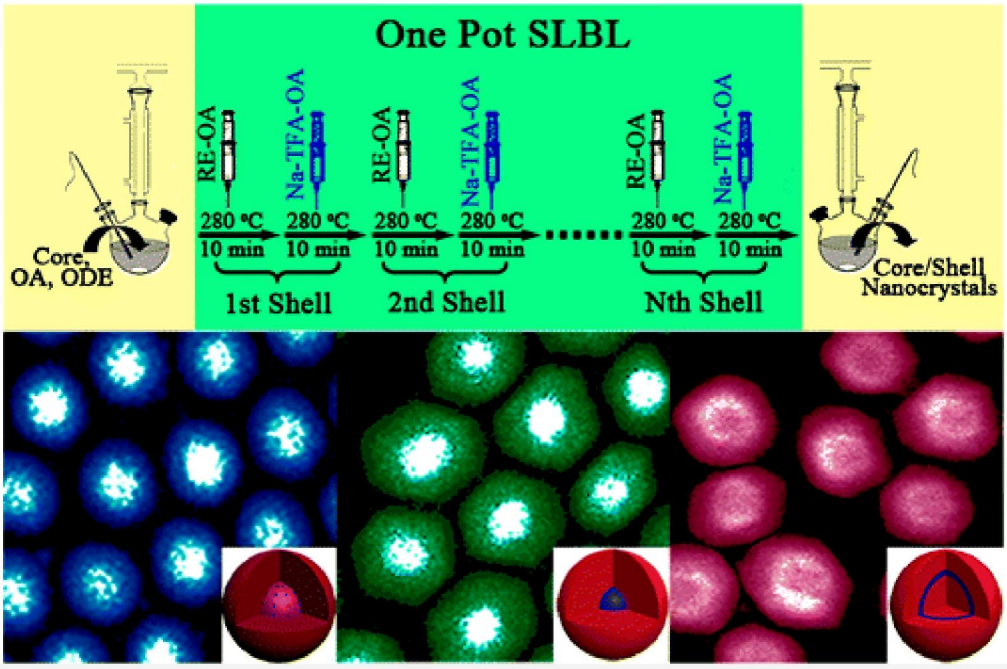
Optical, Electron, and Mass Spectroscopy and Other Related Properties



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ADDITIONS AND CORRECTIONS

Correction to In Situ Formation of Pyridyl-Functionalized Poly(3-hexylthiophene)s via Quenching of the Grignard Metathesis Polymerization: Toward Ligands for Semiconductor Quantum Dots

W. Michael Kochemba, Deanna L. Pickel, Joseph D. Keene, Sandra J. Rosenthal, Bobby G. Sumpter, Jihua Chen, and S. Michael Kilbey, II

pp 113-113
Publication Date (Web): December 20, 2012 (Addition/Correction)
DOI: 10.1021/cm303907t

Correction to Glycerol-Based Bicontinuous Cubic Lyotropic Liquid Crystal Monomer System for the Fabrication of Thin-Film Membranes with Uniform Nanopores

Blaine M. Carter, Brian R. Wiesenauer, Evan S. Hatakeyama, John L. Barton, Richard D. Noble, and Douglas L. Gin

pp 114-114
Publication Date (Web): December 24, 2012 (Addition/Correction)
DOI: 10.1021/cm3039366

Correction to Autonomic Hydrogels Through Postfunctionalization of Gelatin

Matthew L. Smith, Kevin Heitfeld, Connor Slone, and Richard A. Vaia

pp 115-115
Publication Date (Web): December 21, 2012 (Addition/Correction)
DOI: 10.1021/cm3039569