

NOVEMBER 20, 2014

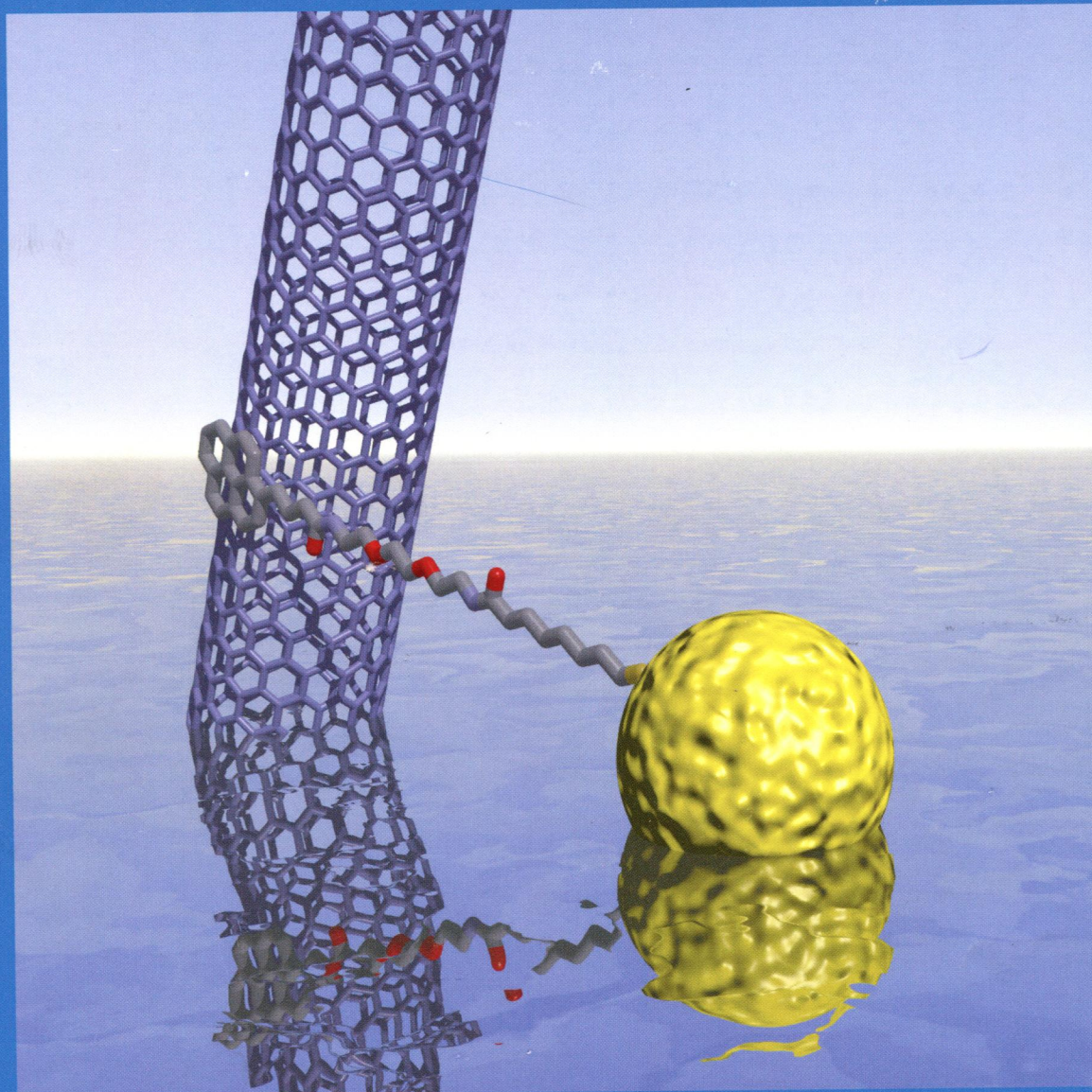
VOLUME 118

NUMBER 46

pubs.acs.org/JPCCK

# THE JOURNAL OF PHYSICAL CHEMISTRY

# C



Water-Soluble  
Nanohybrids Formed  
through Noncovalent  
Interactions between  
Carbon Nanotubes and  
Gold Nanoparticles  
(see page 27028)

ENERGY CONVERSION AND STORAGE, OPTICAL AND ELECTRONIC DEVICES,  
INTERFACES, NANOMATERIALS, AND HARD MATTER



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**ON THE COVER:** Water-soluble nanohybrids formed through noncovalent interactions between carbon nanotubes and gold nanoparticles. Through combination of different nanostructures, multifunctional hybrid materials can be obtained that not only take advantage of the properties of each constituent but also give rise to synergistic effects. Noncovalent interactions between carbon nanotubes and cofunctionalized gold nanoparticles have been quantitatively evaluated and used to promote selforganization. The resulting nanohybrids display a combination of useful properties, such as water solubility and photoluminescence in the near-infrared spectral region. Moreover, the proposed approach offers the possibility to decorate the surface of gold nanoparticles with additional functional groups, thus providing new properties to the nanohybrid. See page 27028

## Articles

### Energy Conversion and Storage; Energy and Charge Transport

26427  DOI: 10.1021/jp5049698

**Electronic Structure and Charge Transport Properties of a Series of 3,6-(Diphenyl)-s-tetrazine Derivatives: Are They Suitable Candidates for Molecular Electronics?**

Mónica Moral, Gregorio García, Andrés Garzón, José M. Granadino-Roldán, Mark A. Fox, Dmitry S. Yufit, Antonio Peñas, Manuel Melguizo, and Manuel Fernández-Gómez\*

26440  DOI: 10.1021/jp505303d

**Iron Pyrite from Iron Thin Films: Identification of Intermediate Phases and Associated Conductivity-type Transitions**

Antonio Pascual, Satoko Yoda, Mariam Barawi, José M. Clamagirand, José R. Ares, Isabel J. Ferrer,\* and Carlos Sánchez

26447  DOI: 10.1021/jp505535h

**Unexpected Dehydrogenation Behaviors of the 2LiBH<sub>4</sub>–MgH<sub>2</sub> Composite Confined in a Mesoporous Carbon Scaffold**

Kuikui Wang, Xiangdong Kang,\* Yujie Zhong, Chaohao Hu, Jianwei Ren, and Ping Wang\*

26454 DOI: 10.1021/jp505682f

**Effect of Intertube Junctions on the Thermoelectric Power of Monodispersed Single Walled Carbon Nanotube Networks**

Mingxing Piao, Min-Kyu Joo, Junhong Na, Yun-Jeong Kim, Mireille Mouis, Gérard Ghibaudo, Siegmard Roth, Wung-Yeon Kim, Ho-Kyun Jang, Gary P. Kennedy, Urszula Dettlaff-Weglikowska,\* and Gyu-Tae Kim\*

26462  DOI: 10.1021/jp506180k

**V<sub>oc</sub> from a Morphology Point of View: the Influence of Molecular Orientation on the Open Circuit Voltage of Organic Planar Heterojunction Solar Cells**

Ulrich Hörmann,\* Christopher Lorch, Alexander Hinderhofer, Alexander Gerlach, Mark Gruber, Julia Kraus, Benedikt Sykora, Stefan Grob, Theresa Linderl, Andreas Wilke, Andreas Opitz, Rickard Hansson, Ana Sofia Anselmo, Yusuke Ozawa, Yasuo Nakayama, Hisao Ishii, Norbert Koch, Ellen Moons, Frank Schreiber, and Wolfgang Brütting\*

- 26471  DOI: 10.1021/jp5063622  
**Investigation of the Chemical Disorder of  $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$  Lattice by Means of Extended X-ray Absorption Fine Structure Spectroscopy**  
G. Greco,\* S. Brutti, F. M. Vitucci, L. Lombardo, M. Köntje, A. Savoini, A. Paolone, and S. Panero
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- 26479  DOI: 10.1021/jp506538d  
**Porous Graphitic Carbon Nitride: A Possible Metal-free Photocatalyst for Water Splitting**  
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- 26485  DOI: 10.1021/jp507044n  
**Hopping Transport and Rectifying Behavior in Long Donor–Acceptor Molecular Wires**  
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- 26498  DOI: 10.1021/jp5097184  
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Robert K. Emmett, Mehmet Karakaya, Ramakrishna Podila, Margarita R. Arcila-Velez, Jingyi Zhu, Apparao M. Rao,\* and Mark E. Roberts\*
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- 26504  DOI: 10.1021/jp507291m  
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- 26513  DOI: 10.1021/jp508015c  
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- 26521  DOI: 10.1021/jp5080384  
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- 26530  DOI: 10.1021/jp508271k  
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- 26543  DOI: 10.1021/jp5082824  
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Alexander J. E. Rettie, Shirin Mozaffari, Martin D. McDaniel, Kristen N. Pearson, John G. Ekerdt, John T. Markert, and C. Buddie Mullins\*

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26551 **S** DOI: 10.1021/jp508543h  
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26560 DOI: 10.1021/jp508618t  
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26569 **S** DOI: 10.1021/jp5088724  
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26577 DOI: 10.1021/jp5089959  
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26584 DOI: 10.1021/jp5090229  
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Joshua J. Goings, Alina M. Schimpf, Joseph W. May, Robert W. Johns, Daniel R. Gamelin,\* and Xiaosong Li\*

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26591 **S** DOI: 10.1021/jp5093306  
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26599 DOI: 10.1021/jp510469b  
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Parveen and Rama Kant\*

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26613 DOI: 10.1021/jp501851f  
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26621 **S** DOI: 10.1021/jp508895u  
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DOI: 10.1021/jp5045805

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Eva Brandes, Peter Karageorgiev, Padmanabhan Viswanath, and Hubert Motschmann\*

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DOI: 10.1021/jp505171a

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Peng Shi, Yu Yang, Bingyun Ao, Ping Zhang, and Xiaolin Wang\*

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DOI: 10.1021/jp505642z

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Yuli Xiong, Daping He, Petra J. Cameron, and Karen J. Edler\*

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DOI: 10.1021/jp506812y

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DOI: 10.1021/jp5068878

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DOI: 10.1021/jp5065566

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Lingmin Yi,\* Xiaomei Meng, Xiaoping Tian, Wei Zhou, and Ruiwen Chen

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DOI: 10.1021/jp5069363

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Chaitanya Krishna Ande, Simon D. Elliott, and Wilhelmus M. M. Kessels\*

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DOI: 10.1021/jp506992c

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Abraham Wolcott, Theanne Schiros, Matthew E. Trusheim, Edward H. Chen, Dennis Nordlund, Rosa E. Diaz, Ophir Gaathon, Dirk Englund, and Jonathan S. Owen\*

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- 26703  DOI: 10.1021/jp507103c  
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- 26713  DOI: 10.1021/jp507138z  
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- 26721  DOI: 10.1021/jp507158x  
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- 26729  DOI: 10.1021/jp507303h  
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- 26737  DOI: 10.1021/jp507364h  
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- 26750  DOI: 10.1021/jp507395p  
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- 26764 DOI: 10.1021/jp507453h  
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- 26789  DOI: 10.1021/jp507576c  
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- 26796  DOI: 10.1021/jp5078399  
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- 26803 DOI: 10.1021/jp5078505  
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- 26808  DOI: 10.1021/jp508054v  
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- 26816  DOI: 10.1021/jp508108a  
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- 26825  DOI: 10.1021/jp5083032  
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- 26836 DOI: 10.1021/jp508525a  
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- 26845 DOI: 10.1021/jp5090668  
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- 26851 DOI: 10.1021/jp5090839  
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- 26877 DOI: 10.1021/jp509191b  
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- 26882 DOI: 10.1021/jp509195d  
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- 26894 DOI: 10.1021/jp509505j  
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- 26921  DOI: 10.1021/jp5095917  
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- 26926  DOI: 10.1021/jp509863t  
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- 26931 DOI: 10.1021/jp509947t  
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- 26939 DOI: 10.1021/jp510495w  
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- 26947 DOI: 10.1021/jp510595s  
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- 26955 DOI: 10.1021/jp505011x  
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- 26964 DOI: 10.1021/jp506043n  
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- 26973 DOI: 10.1021/jp5066264  
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- 26981 DOI: 10.1021/jp507482u  
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- 26987 DOI: 10.1021/jp5077565  
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- 27000 DOI: 10.1021/jp508507s  
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Gerrit Guenther, F. Einar Kruis, and Olivier Guillon\*

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27020  DOI: 10.1021/jp509841s

**Size-Dependent Phase Transformations in Bismuth Oxide Nanoparticles. II. Melting and Stability Diagram**  
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27028 DOI: 10.1021/jp505005e

**Noncovalent Interaction between Single-Walled Carbon Nanotubes and Pyrene-Functionalized Gold Nanoparticles in Water-Soluble Nanohybrids**  
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27039 DOI: 10.1021/jp505175t

**Enhanced Room-Temperature Ferromagnetism on Co-Doped CeO<sub>2</sub> Nanoparticles: Mechanism and Electronic and Optical Properties**  
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27048 DOI: 10.1021/jp506922s

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27063  DOI: 10.1021/jp5070903

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27081  DOI: 10.1021/jp507451b

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DOI: 10.1021/jp507484p

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DOI: 10.1021/jp5076912

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DOI: 10.1021/jp5077824

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DOI: 10.1021/jp507987x

**Theoretical Study on Thermodynamic and Spectroscopic Properties of Electro-Oxidation of *p*-Aminothiophenol on Gold Electrode Surfaces**  
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**Computational Study on Removal of Epoxide from Narrow Zigzag Graphene Nanoribbons**  
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DOI: 10.1021/jp508679t

**Tunable Band Gap in Bilayer Graphene by Trimesic Acid Molecular Doping**  
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DOI: 10.1021/jp5087448

**Carbon Allotropes Accelerate Hydrogenation via Spillover Mechanism**

Svetlana Pevzner,\* Ilan Pri-Bar, Itay Lutzky, Eyal Ben-Yehuda, Efrat Ruse, and Oren Regev\*

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DOI: 10.1021/jp509045d

**Soft-Chemical Synthetic Nonstoichiometric  $\text{Bi}_2\text{O}_{2.33}$  Nanoflower: A New Room-Temperature Ferromagnetic Semiconductor**

Hangmin Guan,\* Xiaodong Zhang,\* and Yi Xie

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DOI: 10.1021/jp509582x

**Initial Steps of Thermal Decomposition of Dihydroxylammonium 5,5'-bistetrazole-1,1'-diolate Crystals from Quantum Mechanics**

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## Additions and Corrections

27182 

DOI: 10.1021/jp5107982

**Correction to "Hierarchization of USY Zeolite by  $\text{NH}_4\text{OH}$ . A Postsynthetic Process Investigated by NMR and XRD"**

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