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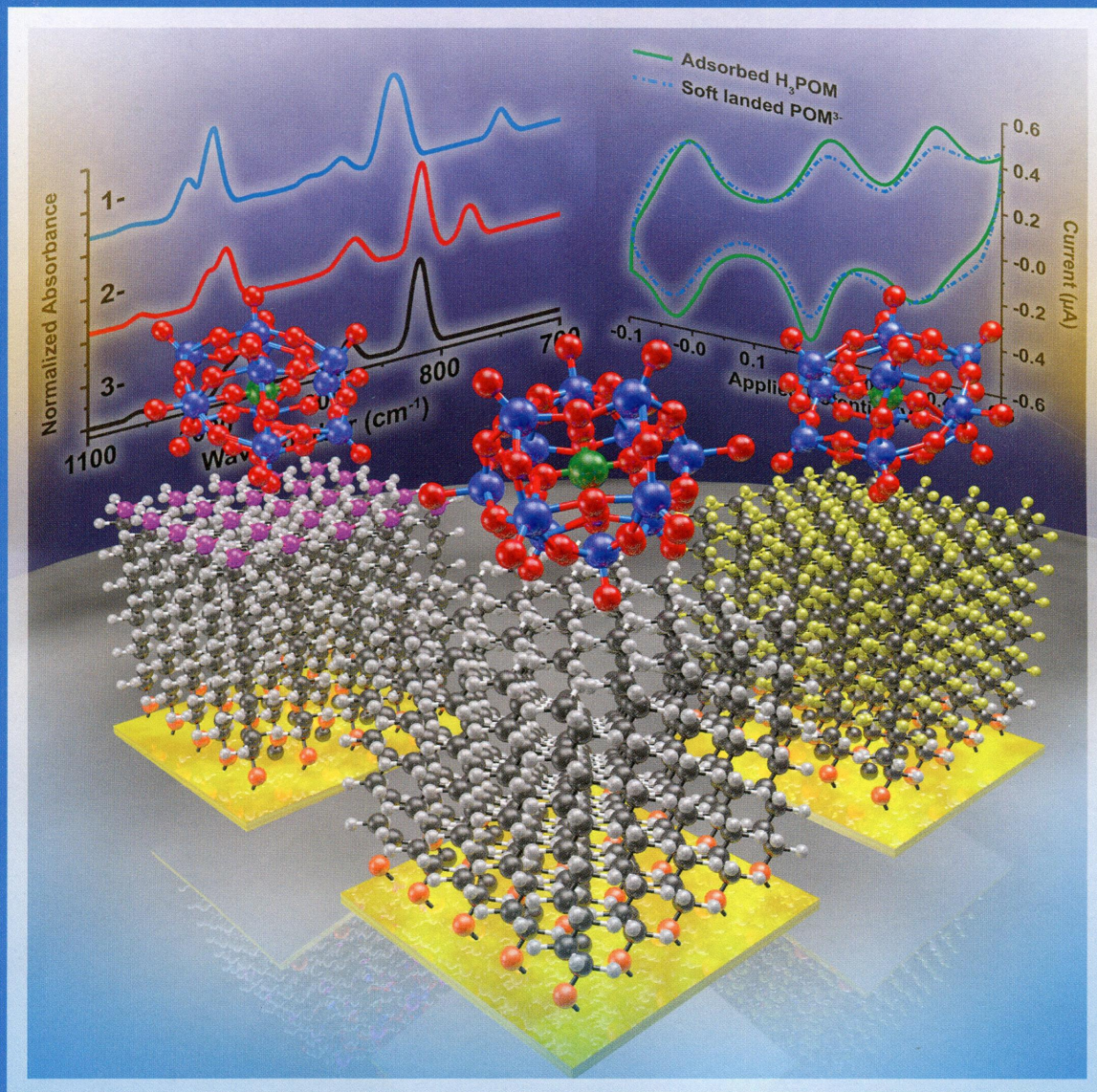
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Retention of Charge
and Redox Activity
by Soft-Landed
Polyoxometalate Ions
(see page 27611)

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



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ON THE COVER: Retention of charge and redox activity by soft-landed polyoxometalate ions. Soft landing enables the deposition of uniform films of intact, mass-selected, polyatomic ions in well-defined charge states from the gas phase onto surfaces. By selectively depositing polyoxometalate anions, we examined their vibrational features and electrochemical properties without interference from cations and solvent molecules that is unavoidable with other sample preparation techniques. Charge retention by the soft-landed anions was confirmed by analyzing the vibrational features in situ while cyclic voltammetry was used to assess redox activity in solution. The kinetic energy of the ion beam and the electron binding energy of the anion were observed to be the dominant factors affecting the extent of charge retention on the surface. Our findings pave the way for controlled preparation of substrates for electrochemical supercapacitors using ion soft landing. See page 27611.

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Energy Conversion and Storage; Energy and Charge Transport

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Controlling the Charge State and Redox Properties of Supported Polyoxometalates via Soft Landing of Mass-Selected Ions
K. Don D. Gunaratne, Grant E. Johnson, Amity Andersen, Dan Du, Weiyang Zhang, Venkateshkumar Prabhakaran, Yuehe Lin, and Julia Laskin*

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DOI: 10.1021/jp506951b

Electrolytic Conditioning of a Magnesium Aluminum Chloride Complex for Reversible Magnesium Deposition
Christopher J. Barile, Elizabeth C. Barile, Kevin R. Zavadil, Ralph G. Nuzzo, and Andrew A. Gewirth*

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DOI: 10.1021/jp506957y

Binary Protic Ionic Liquid Mixtures as a Proton Conductor: High Fuel Cell Reaction Activity and Facile Proton Transport
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DOI: 10.1021/jp507088t

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DOI: 10.1021/jp5074076

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DOI: 10.1021/jp508028t

Influences of Extended Selenization on $\text{Cu}_2\text{ZnSnSe}_4$ Solar Cells Prepared from Quaternary Nanocrystal Ink

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DOI: 10.1021/jp5081516

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DOI: 10.1021/jp508183t

Theoretical Study of Hydrogen Adsorption on Ru-Decorated (8,0) Single-Walled Carbon Nanotube

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DOI: 10.1021/jp508195n

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DOI: 10.1021/jp508497a

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DOI: 10.1021/jp5085058

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DOI: 10.1021/jp508581x

Effect of Mesopore Ordering in Otherwise Similar Micro/Mesoporous Carbons on the High-Rate Performance of Electric Double-Layer Capacitors

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Ab Initio Calculations of Band Gaps and Absolute Band Positions of Polymorphs of RbPbI_3 and CsPbI_3 : Implications for Main-Group Halide Perovskite Photovoltaics


Jakoah Brgoch, Anna J. Lehner, Michael Chabinyc, and Ram Seshadri*

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DOI: 10.1021/jp508918u

Magnetic Glassy Behavior of $\text{Pr}_{0.6}\text{Ca}_{0.4}\text{MnO}_3$ Nanoparticles: Effect of Intra and Interparticle Magnetic Interactions on Magnetodielectric Property

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DOI: 10.1021/jp508972v

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DOI: 10.1021/jp509298r

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DOI: 10.1021/jp5096322

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DOI: 10.1021/jp509930s

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DOI: 10.1021/jp510313a

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- 27890 DOI: 10.1021/jp508822v
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- 27901 DOI: 10.1021/jp5089993
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- 27911 DOI: 10.1021/jp509067u
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- 27920  DOI: 10.1021/jp509091a
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- 27933  DOI: 10.1021/jp509284d
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- 27954  DOI: 10.1021/jp509318z
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- 27961  DOI: 10.1021/jp509421j
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- 27973  DOI: 10.1021/jp5094492
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- 27981 DOI: 10.1021/jp5094614
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- 27989  DOI: 10.1021/jp509510j
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- 27998  DOI: 10.1021/jp5095307
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- 28007 DOI: 10.1021/jp509533g
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- 28017 DOI: 10.1021/jp509555m
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Catherine Dejoie,* Pauline Martinetto,* Nobumichi Tamura, Martin Kunz, Florence Porcher, Patrice Bordat, Ross Brown, Eric Dooryh e, Michel Anne, and Lynne B. McCusker

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Hierarchical Mordenite Dedicated to the Fluid Catalytic Cracking Process: Catalytic Performance Regarding Textural and Acidic Properties

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Chalcogenide-Ligand Passivated CdTe Quantum Dots Can Be Treated as Core/Shell Semiconductor Nanostructures

Kyle J. Schnitzenbaumer and Gordana Dukovic*

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Correlated Optical and Magnetic Properties in Photoreduced Graphene Oxide

Takaaki Taniguchi,* Hiroyuki Yokoi,* Masaki Nagamine, Hikaru Tateishi, Asami Funatsu, Kazuto Hatakeyama, Chikako Ogata, Masao Ichida, Hiroaki Ando, Michio Koinuma, and Yasumichi Matsumoto

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Nonhomogeneous Silica Promotes the Biologically Induced Delivery of Metal Ions from Silica-Coated Magnetic Nanoparticles

Ana B. Dávila-Ibáñez, Rosalía Mariño-Fernández, Melodie Maceira-Campos, Andrés García-Lorenzo, Vicenta Martínez-Zorzano, and Verónica Salgueiriño*

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Work Functions of Pristine and Heteroatom-Doped Graphenes under Different External Electric Fields: An *ab Initio* DFT Study

Reza Gholizadeh and Yang-Xin Yu*

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Photocurrent Generation and Conductivity Relaxation in Reduced Graphene Oxide Cd_{0.75}Zn_{0.25}S Nanocomposite and Its Photocatalytic Activity

Sankalpita Chakrabarty, Koushik Chakraborty, Arnab Laha, Tanusri Pal,* and Surajit Ghosh*

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Mechanical Properties, Electronic Structures, and Potential Applications in Lithium Ion Batteries: A First-Principles Study toward SnSe₂ Nanotubes

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Argon-Beam-Induced Defects in a Silica-Supported Single-Walled Carbon Nanotube

Alfredo D. Bobadilla and Jorge M. Seminario*

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Probing Molecular Mobility in Nanostructured Composites by Heteronuclear Dipolar NMR Spectroscopy

Boris B. Kharkov, Vladimir I. Chizhik, and Sergey V. Dvinskikh*

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Tunable Luminescence in CdSe Quantum Dots Doped by Mn Impurities

Vitaly Proshchenko and Yuri Dahnovsky*

High-Temperature Magnetism as a Probe for Structural and Compositional Uniformity in Ligand-Capped Magnetite Nanoparticles

Yury V. Kolen'ko,* Manuel Bañobre-López, Carlos Rodríguez-Abreu, Enrique Carbó-Argibay, Francis Leonard Deepak, Dmitri Y. Petrovykh, M. Fátima Cerqueira, Saeed Kamali, Kirill Kovnir, Dmitry V. Shtansky, Oleg I. Lebedev, and Jose Rivas

Additions and Corrections**28330** DOI: 10.1021/jp511482h
Correction to "Influence of Vibrational States on CO₂ Splitting by Dielectric Barrier Discharges"
Robby Aerts,* Tom Martens, and Annemie Bogaerts