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DECEMBER 18, 2014

VOLUME 118

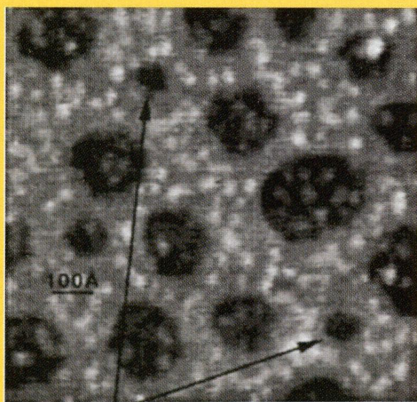
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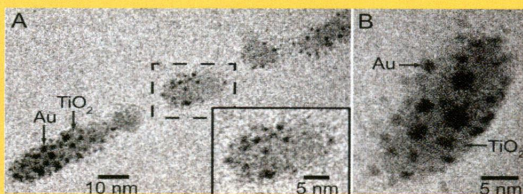
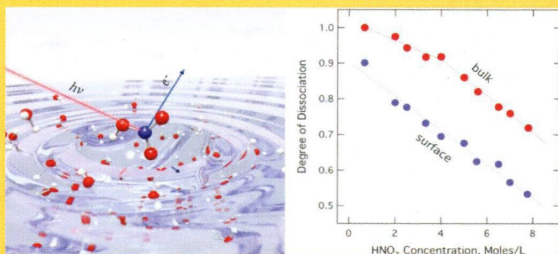
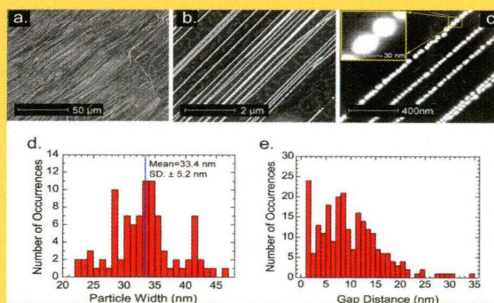
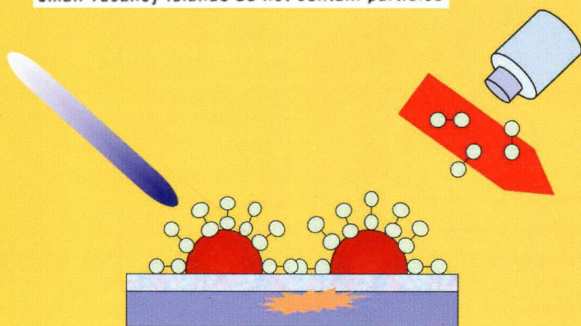
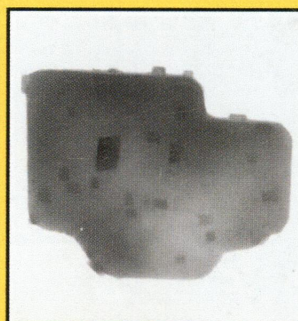
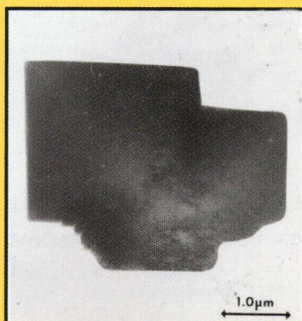
# THE JOURNAL OF PHYSICAL CHEMISTRY

# C

Examples of  
Research Interests of  
John C. Hemminger  
and His Students



small vacancy islands do not contain particles



## JOHN C. HEMMINGER Festschrift



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**ON THE COVER:** Clockwise from upper left: (a) STM image showing carbon particles formed from the dehydrogenation of ethylene on a Pt surface with monolayer deep “pit” defects. (From: Nafisi, K.; Samu, J.; Hemminger, J. C. Controlled Size, Nanometer-Scale, Reaction Vessels in Two Dimensions. *J. Phys. Chem. B* **2000**, *104* (44), 10111–10115.) (b) SEM image of NaNO<sub>3</sub> particles formed on a NaCl particle. (From: Finlayson-Pitts, B. J.; Hemminger, J. C. Physical Chemistry of Airborne Sea Salt Particles and Their Components. *J. Phys. Chem. A* **2000**, *104* (49), 11463–11477.) (c) SEM image of Ag nanoparticles aligned in rows at step edges on an HOPG surface that were utilized in polarized SERS experiments. (From: Lou, W.; van der Veer, W.; Chu, P.; Mills, D. L.; Penner, R. M.; Hemminger, J. C. Polarization-Dependent Surface Enhanced Raman Scattering from Silver 1D Nanoparticle Arrays. *J. Phys. Chem. C* **2008**, *112* (31), 11609–11613.) (d) TEM images of TiO<sub>2</sub> nanoparticles on HOPG that were decorated with Au nanoparticles by photoelectrochemical deposition. (e) Dissociation of nitric acid in water as a function of concentration as determined by liquid-jet X-ray photoelectron spectroscopy. (From: Lewis, T.; Winter, B.; Stern, A. C.; Baer, M. D.; Mundy, C. J.; Tobias, D. J.; Hemminger, J. C. Does Nitric Acid Dissociate at the Aqueous Solution Surface? *J. Phys. Chem. C* **2011**, *115* (43), 21183–21190.) (f) Schematic of a laser-induced thermal desorption postionization mass spectrometry experiment. This special issue was organized by Guest Editors Heather C. Allen, Hendrik Bluhm, Matthew A. Brown, and Barbara J. Finlayson-Pitts.

## SPECIAL ISSUE: JOHN C. HEMMINGER Festschrift

### Special Issue Preface

28923

Preface of John C. Hemminger Festschrift

Heather C. Allen, Hendrik Bluhm, Matthew A. Brown,\* and Barbara J. Finlayson-Pitts

DOI: 10.1021/jp509729v

28924

Autobiography of John C. Hemminger

John C. Hemminger

DOI: 10.1021/jp510402a

28927

Students, Postdoctoral Researchers, and Research Collaborators of John C. Hemminger

DOI: 10.1021/jp509836s

28929

Curriculum Vitae for John C. Hemminger

DOI: 10.1021/jp509832r

28930

Publications of John C. Hemminger

DOI: 10.1021/jp5098348

### Articles

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Internal Energy of Thermometer Ions Formed by Femtosecond Laser Desorption: Implications for Mass Spectrometric Imaging

Slobodan Milasinovic, Yang Cui, Robert J. Gordon, and Luke Hanley\*

DOI: 10.1021/jp504062u

28948

DOI: 10.1021/jp504409s

**Interaction of Coadsorbed CO and Deuterium on a Bimetallic, Pt Monolayer Island Modified Ru(0001) Surface**

H. Hartmann, J. Bansmann, T. Diemant, and R. J. Behm\*

28959 **S**

DOI: 10.1021/jp505360b

**Surface-Enhanced Vibrational Spectroscopy and Density Functional Theory Study of Isoniazid Layers Adsorbed on Silver Nanostructures**

Aaron R. Owen, Jon W. Golden, Adam S. Price, William A. Henry, William K. Barker, and Donald A. Perry\*

28970

DOI: 10.1021/jp409852v

**Interaction of Aluminum Ions with Fused Silica/Water Interfaces in the Presence of Oxalic Acid Tracked by Second Harmonic Generation**

David S. Jordan and Franz M. Geiger\*

28978

DOI: 10.1021/jp501202z

**Role of Water and Phase in the Heterogeneous Oxidation of Solid and Aqueous Succinic Acid Aerosol by Hydroxyl Radicals**

Man Nin Chan, Haofei Zhang, Allen H. Goldstein, and Kevin R. Wilson\*

28993

DOI: 10.1021/jp501783z

**Lithographically Patterned Nanoscale Electrodeposition of Plasmonic, Bimetallic, Semiconductor, Magnetic, and Polymer Nanoring Arrays**

Kyunghye Cho, Gabriel Loget, and Robert M. Corn\*

29001

DOI: 10.1021/jp502036q

**Interplay between Electronic Properties and Interatomic Spacing in Artificial Gold Chains on NiAl(110)**

N. Nilius, T. M. Wallis, M. Persson, and W. Ho\*

29007 **S**

DOI: 10.1021/jp502262f

**pH Dependent Electronic and Geometric Structures at the Water–Silica Nanoparticle Interface**

Matthew A. Brown,\* Marco Arrigoni, Florent Héroguel, Amaia Beloqui Redondo, Livia Giordano, Jeroen A. van Bokhoven, and Gianfranco Pacchioni\*

29017

DOI: 10.1021/jp502890s

**Molecular Dynamics Analysis of NaOH Aqueous Solution Surface and the Sum Frequency Generation Spectra: Is Surface OH<sup>-</sup> Detected by SFG Spectroscopy?**

Takako Imamura, Tatsuya Ishiyama, and Akihiro Morita\*

29028

DOI: 10.1021/jp503243x

**Computational Studies of Water-Exchange Rates around Aqueous Mg<sup>2+</sup> and Be<sup>2+</sup>**

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29034 **S** DOI: 10.1021/jp503253a  
**Permeation of a Single-Layer SiO<sub>2</sub> Membrane and Chemistry in Confined Space**  
Emre Emmez, Bing Yang, Shamil Shaikhutdinov,\* and Hans-Joachim Freund

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29043 DOI: 10.1021/jp503758t  
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Christopher C. Leon, Jae-Gook Lee, and S. T. Ceyer\*

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29058 DOI: 10.1021/jp5038975  
**Impact of a Mixed Oxide's Surface Composition and Structure on Its Adsorptive Properties: Case of the (Fe,Cr)<sub>3</sub>O<sub>4</sub>(111) Termination of the  $\alpha$ -(Fe,Cr)<sub>2</sub>O<sub>3</sub>(0001) Surface**  
M.A. Henderson\* and M.H. Engelhard

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29068 DOI: 10.1021/jp504020a  
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29077 DOI: 10.1021/jp504024t  
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K.D. Gibson and S. J. Sibener\*

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29084 **S** DOI: 10.1021/jp5041508  
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Chris H. Wohlgamuth, Marc A. McWilliams, Amir Mazaheripour, Anthony M. Burke, Kuo-Yao Lin, Linh Doan, Jason D. Slinker,\* and Alon A. Gorodetsky\*

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29091 **S** DOI: 10.1021/jp504187y  
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R. Scott Smith,\* Zhenjun Li, Zdenek Dohnálek, and Bruce D. Kay\*

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29101 **S** DOI: 10.1021/jp504195v  
**Gold Nanowire Thermophones**  
Rajen Dutta, Brian Albee, Wytze E. van der Veer, Taylor Harville, Keith C. Donovan, Dimitri Papamoschou, and Reginald M. Penner\*

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29108 **S** DOI: 10.1021/jp504285z  
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Min H. Kuo, Samar G. Moussa, and V. Faye McNeill\*

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29117  DOI: 10.1021/jp504399a  
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Aruni Gankanda and Vicki H. Grassian\*


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29126  DOI: 10.1021/jp504463z  
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Jack Deodato C. Jacob, T. Randall Lee,\* and Steven Baldelli\*


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29135  DOI: 10.1021/jp504673g  
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Johannes Seibel, Manfred Parschau, and Karl-Heinz Ernst\*

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29142  DOI: 10.1021/jp504707h  
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Isaak Unger, Stephan Thürmer, Daniel Hollas, Emad F. Aziz, Bernd Winter,\* and Petr Slavíček\*


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29151  DOI: 10.1021/jp505010e  
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F. Rifkha Kameel, F. Riboni, M. R. Hoffmann, Shinichi Enami, and A. J. Colussi\*

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29159 DOI: 10.1021/jp505114t  
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Joachim Sauer,\* Marc Pritzsche, and Jens Döbler

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29164  DOI: 10.1021/jp5052084  
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Wilfredo Cabrera, Mathew D. Halls, Ian M. Povey, and Yves J. Chabal\*

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29180 DOI: 10.1021/jp505243p  
**Multivariate Analysis Combined with Surface Mass Spectrometry (ToF-SIMS): Enabling Problem Solving and Expanding Application Space in an Industrial Environment**  
Kathryn G. Lloyd\*

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29187 DOI: 10.1021/jp505261z  
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John T. Newberg\*

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- 29196 **S** DOI: 10.1021/jp5052672  
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Yang Yang, Mark A. Ratner, and George C. Schatz\*
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- 29209 **S** DOI: 10.1021/jp505349f  
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David E. Starr\* and Hendrik Bluhm
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- 29218 **S** DOI: 10.1021/jp505351g  
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Da-Jiang Liu, Holly Walen, Junepyo Oh, Hyunseob Lim, J. W. Evans, Yousoo Kim, and P. A. Thiel\*
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- 29224 **S** DOI: 10.1021/jp505352k  
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Bonggeun Shong and Stacey F. Bent\*
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- 29234 DOI: 10.1021/jp505379j  
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Gregory P. Schill and Margaret A. Tolbert\*
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- 29242 **S** DOI: 10.1021/jp5053908  
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Till Cremer, Stephen C. Jensen, and Cynthia M. Friend\*
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- 29252 **S** DOI: 10.1021/jp505394e  
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- 29260 **S** DOI: 10.1021/jp505406r  
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Kedar Manandhar, Weronika Walkosz, Yuan Ren, Shigeki Otani, Peter Zapol, and Michael Trenary\*
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- 29270 **S** DOI: 10.1021/jp505433a  
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Junjie Shi, Andreas Schaefer, Andre Wichmann, M. Mangir Murshed, Thorsten M. Gesing, Arne Wittstock,\* and Marcus Bäumer

29278 

DOI: 10.1021/jp505440g

**Catalytic Dehydration of 2-Propanol by Size-Selected (WO<sub>3</sub>)<sub>n</sub> and (MoO<sub>3</sub>)<sub>n</sub> Metal Oxide Clusters**


Xin Tang, Dennis Bumüller, Alane Lim, John Schneider, Ulrich Heiz, Gerd Ganteför, D. Howard Fairbrother,\* and Kit H. Bowen\*

29287 

DOI: 10.1021/jp505441k

**Intrinsically Conductive Organo–Silver Linear Chain Polymers [–S–Ag–S–Biphenyl–]<sub>n</sub>, Assembled on Roughened Elemental Silver**

Stephen S. Sasaki, Yan-Ning Zhang, Shirshendu Dey, Nicholas Tallarida, Patrick Z. El-Khoury, V. A. Apkarian,\* and Ruqian Wu\*

29294 

DOI: 10.1021/jp5054452

**CoP as an Acid-Stable Active Electrocatalyst for the Hydrogen-Evolution Reaction: Electrochemical Synthesis, Interfacial Characterization and Performance Evaluation**

Fadi H. Saadi, Azhar I. Carim, Erik Verlage, John C. Hemminger, Nathan S. Lewis,\* and Manuel P. Soriaga\*

29301

DOI: 10.1021/jp505451h

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Xi Wang, Robert N. Sanderson, and Regina Ragan\*

29310

DOI: 10.1021/jp505494a

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Christopher A. Wolcott, Isabel X. Green, Trent L. Silbaugh, Ye Xu, and Charles T. Campbell\*

29322

DOI: 10.1021/jp505508c

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Daniel J. Higgs, Matthias J. Young, Jacob A. Bertrand, and Steven M. George\*

29333

DOI: 10.1021/jp505569c

**Deeper Insight into Depth-Profiling of Aqueous Solutions Using Photoelectron Spectroscopy**

Olle Björneholm, Josephina Werner, Niklas Ottosson, Gunnar Öhrwall, Victor Ekholm, Bernd Winter, Isaak Unger, and Johan Söderström\*

29340 

DOI: 10.1021/jp505587t

**Hydroxylation of Ultrathin Al<sub>2</sub>O<sub>3</sub>/NiAl(110) Films at Environmental Humidity**

A. Shavorskiy, K. Müller, J. T. Newberg, D. E. Starr,\* and H. Bluhm\*

29350 

DOI: 10.1021/jp5056039

**Liquid–Vapor Interface of Formic Acid Solutions in Salt Water: A Comparison of Macroscopic Surface Tension and Microscopic in Situ X-ray Photoelectron Spectroscopy Measurements**

Jefferson G. Pruyne, Ming-Tao Lee, Csaba Fábi, Amaia Belouqui Redondo, Armin Kleibert, Markus Ammann, Matthew A. Brown,\* and Maria J. Krisch\*


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29361  DOI: 10.1021/jp505653u

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Alexis M. Johnson and Peter C. Stair\*

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29370  DOI: 10.1021/jp505776d

**At What Size Do Neutral Gold Clusters Turn Three-Dimensional?**

Mikael P. Johansson,\* Ingolf Warnke, Alexander Le, and Filipp Furche\*

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29378 DOI: 10.1021/jp505947h

**Characterization of the Acetonitrile Aqueous Solution/Vapor Interface by Liquid-Jet X-ray Photoelectron Spectroscopy**

Kathryn A. Perrine, Marijke H. C. Van Spyk, Alexandria M. Margarella, Bernd Winter, Manfred Faubel, Hendrik Bluhm, and John C. Hemminger\*

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29389  DOI: 10.1021/jp505998k

**Environmental Influence on the Surface Chemistry of Ionic-Liquid-Mediated Lubrication in a Silica/Silicon Tribopair**

Andrea Arcifa, Antonella Rossi, Rosa M. Espinosa-Marzal, and Nicholas D. Spencer\*

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29401  DOI: 10.1021/jp506120t

**Structure, Dynamics, and Spectral Diffusion of Water from First-Principles Molecular Dynamics**

Pascal Renard, Awesa Karmakar, Vincenzo Carnevale,\* Amalendu Chandra, and Michael L. Klein\*

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29412 DOI: 10.1021/jp5062896

**Investigation of Interfacial and Bulk Dissociation of HBr, HCl, and HNO<sub>3</sub> Using Density Functional Theory-Based Molecular Dynamics Simulations**

Marcel D. Baer,\* Douglas J. Tobias, and Christopher J. Mundy\*

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29421  DOI: 10.1021/jp5065598

**Aqueous Phase Oligomerization of Methyl Vinyl Ketone by Atmospheric Radical Reactions**

Matthew L. Dawson, Mychel E. Varner, Véronique Perraud, Michael J. Ezell, Jacqueline Wilson, Alla Zelenyuk, R. Benny Gerber,\* Veronica Vaida, and Anne Monod\*

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29431  DOI: 10.1021/jp506560w

**Amine–Amine Exchange in Aminium–Methanesulfonate Aerosols**

Matthew L. Dawson, Mychel E. Varner, Véronique Perraud, Michael J. Ezell, Jacqueline Wilson, Alla Zelenyuk, R. Benny Gerber,\* and Barbara J. Finlayson-Pitts\*

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29441 DOI: 10.1021/jp5081274

**Single-Walled Carbon Nanotubes Modulate the B- to A-DNA Transition**

Gavin Bascom and Ioan Andricioaei\*

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$^{13}\text{C}=^{18}\text{O}/^{15}\text{N}$  Isotope Dependence of the Amide-I/II 2D IR Cross Peaks for the Fully Extended Peptides

Hiroaki Maekawa, Gema Ballano, Fernando Formaggio, Claudio Toniolo, and Nien-Hui Ge\*



## Effect of Alkyl Chain Length on Hygroscopicity of Nanoparticles and Thin Films of Imidazolium-Based Ionic Liquids

Amanda C. MacMillan, Theresa M. McIntire, Scott A. Epstein, and Sergey A. Nizkorodov\*