

Engineering Sciences and Fundamentals 2016

Core Programming Area at the 2016 AIChE Annual Meeting

San Francisco, California, USA
13 - 18 November 2016

Volume 1 of 2

ISBN: 978-1-5108-3434-7

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by AIChE
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact AIChE
at the address below.

AIChE
120 Wall Street, FL 23
New York, NY 10005-4020

Phone: (800) 242-4363
Fax: (203) 775-5177

www.aiche.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

(31a) A Microfluidic Study of Liquid-Liquid Extraction Mediated By Carbon Dioxide	1
<i>Gabriella A. Lestari</i>	
(31c) Modeling of Water Quality Downgradient of Mulch Biowall with Nearby Surface Water Receptor	2
<i>Matthew L. Alexander, Adewale Adeniran</i>	
(34a) Influence of Silica Nanoparticles on Transport and Interfacial Phenomena in Liquid/Liquid Systems	3
<i>Marc Petzold, Susanne Röhl, Lena Hohl, Dmitrij Stehl, Regine von Klitzing, Matthias Kraume</i>	
(34b) Molecular Dynamic Study of Hydrodynamic Drag and Diffusion for Nanoparticles at Liquid Vapour Interface	4
<i>Joel Koplik, Charles Maldarelli</i>	
(34d) Human Tear-Film Evaporation Rate from Simultaneous Ocular-Surface Temperature and Tear-Breakup Area	5
<i>Tom Dursch, Wing Li, Bazeem Taraz, Meng Lin, Clayton J. Radke</i>	
(34e) Enhancing the Spreading Behavior of Drug Formulations on Pulmonary Airway: Effect of Catanionic Surfactant Mixtures	6
<i>Gokce Alp, Nihal Aydogan</i>	
(34f) Dynamic Surface Tension Measurements with Maximum Bubble Pressure Tensiometry	7
<i>Norman Moreno, Theodore Walker, Camilla U. Ortiz, Adam Burshan, Vivek Sharma</i>	
(34g) Dynamic Contact Angles in Liquid-Liquid Systems	8
<i>Amer Al-Shareef, Parthasakha Neogi</i>	
(34h) Experimental Study of the Contact Line Region for a Pure Fluid and Binary Fluid Mixture on the ISS	9
<i>Thao T.T. Nguyen, Akshay Kundan, Peter C. Wayner, Joel L. Plawsky</i>	
(34i) Transport Properties in Ternary Liquid-Liquid Systems	10
<i>Marius Krapoth, Tim Zeiner</i>	
(34j) Hydrodynamics and Mechanism Study of Foam Column Trays with Various Contact Angles	11
<i>Peng Yan, Xingang Li, Hong Li, Xin Gao</i>	
(37j) Density Gradient Theory for Modeling Interfacial Properties of Surfactant Systems	12
<i>Xiaoqun Mu, Walter G. Chapman, Faruk O. Alpak</i>	
(37b) A Simple-to-Apply Predictive Wetting Model for Textured (Rough/Patterned) Surfaces and the Role of Re-Entrant Cavities	13
<i>Szu-Ying Chen, Yair Kaufman, Himanshu Mishra, Alex Schrader, Dong-woog Lee, Saurabh Das, Stephen H. Donaldson, Jacob N. Israelachvili</i>	
(37c) Obtaining Solid-Liquid Interfacial Free Energy for Realistic Systems	14
<i>Xin Qi, Kristen Fichthorn</i>	
(37d) Protein Interfacial Behavior Studied with Multiscale Simulations	15
<i>Mohammadreza Samieegohar, Tao Wei</i>	
(37e) Modeling Surface-Anchored Nematic Liquid Crystals for Chemoresponsive Application	16
<i>Tibor Szilvási, Luke T. Roling, Huaizhe Yu, Prabin Rai, Robert Twieg, Nicholas L. Abbott, Manos Mavrikakis</i>	
(37f) Molecular Dynamics Simulations of HIV-1 Regulatory Protein on Graphene	17
<i>Jian Zhou</i>	
(37g) A Thermodynamic Approach to Interfacial Transport Phenomena	18
<i>David Venerus, Hans Christian Öttinger</i>	
(37h) Adhesion and Translocation of Nanoparticles Through Lipid Bilayers Studied By Mesoscale Simulations	19
<i>Sean Burgess, Zhengjia Wang, Aleksey Vishnyakov, Alexander V. Neimark</i>	
(37i) Calculating the Interfacial Properties of CO₂/Water/Silica Systems Using Monte Carlo Molecular Simulations	20
<i>Adam R. Rall, Jeffrey R. Errington</i>	
(48a) Compositional Effect of Varying Feedstocks on Heavy Oil Upgrading By Supercritical Water	21
<i>Ramazan Oguz Caniaz, Can Erkey, Serhat Arca</i>	
(48b) Product Formation and Kinetics of the Non-Isothermal Hydrothermal Liquefaction of Soy Protein Isolate	22
<i>James Sheehan, Phillip E. Savage</i>	
(48c) An Investigation on Short Residence Time Macro Algae Hydro Thermal Liquefaction in a Batch Reactor	25
<i>Arash Izadpanah, Niccolo Le Brun, Klaus Hellgardt</i>	
(48d) Hydrothermal Liquefaction (HTL) of High-Ash Algal Biomass: The Effect of Ash Contents in HTL Reactions	26
<i>Wan-Ting Chen, Wanyi Qian, Karalyn Scheppe, Zachary Mazur, Lance Schideman, Chih-Ting Kuo, Peng Zhang, Yuanhui Zhang</i>	
(48e) Simultaneous Solid, Phosphorus Recovery and Biocrude Production through Hydrothermal Liquefaction of Algae	27
<i>Robert Hable, Sirwan Alimoradi, Shawn Benson, Colin White, Belinda S.M. Sturm, Susan M. Stagg-Williams</i>	
(48f) Supercritical Water Treatment of Fractions of Crude Oil: Quantification of the Products	28
<i>Soumya Gudiyella, Lawrence Lai, Isaiah Borne, Jianghuai Cai, Michael T. Timko, Geoffrey Tompsett, Alison Lui, William H. Green</i>	
(48g) Supercritical Water Process - Finding a Way to Accomodate into Petroleum Industry	29
<i>Ki-Hyouk Choi, Joo-Hyeong Lee, Ashok K. Punetha, Emad Shafei, Abdullah Abdulhadi, Muneef Qarzouh, Bader Al-Otaibi</i>	

(52a) A High Pressure Viscometer for the Assessment of Viscosity and Density of Lubricants and Polymer Solutions Under Pressure	30
<i>James Dickmann, John C. Hassler, Mark Devlin, Erdogan Kiran</i>	
(52b) Exploring the Temperature and Pressure Dependence of the Viscosities of Two Potential Deepwater Viscosity References	31
<i>Hseen O. Baled, Isaac K. Gamwo, Deepak Tapriyal, Babatunde A. Bamgbade, Mark A. McHugh, Robert M. Enick</i>	
(52c) Widom Line, Dynamical and Structural Crossovers in Supercritical Oxygen Via Molecular Dynamics Simulations	32
<i>Abhinav S. Raman, Huiyong Li, Y.C Chiew</i>	
(52d) Development and Evaluation of Molecular Models for the Calculation of Thermodynamic and Transport Properties of H₂O+CO₂+NaCl System	33
<i>Hao Jiang, Othonas A. Moulton, Ioannis G. Economou, Athanassios Z. Panagiotopoulos</i>	
(52e) Isobaric Heat Capacity of Supercritical Fluid Mixtures: Experimental Measurements and Molecular Simulations	34
<i>Mitchell Ishmael, Lauren Stutzman, Maciej Lukawski, Jefferson W. Tester</i>	
(52f) High-Pressure, Global Phase Behavior for the Guaiacol–CO₂ System	35
<i>Mark C. Thies, Julian Velez</i>	
(52g) Volumetric Properties of Cyclohexane + CO₂ Mixtures at High Pressures	36
<i>Michael Williams, James Dickmann, John C. Hassler, Erdogan Kiran</i>	
(52h) Prediction of Solid-Liquid-Gas Equilibrium for Binary Mixtures of Carbon Dioxide + Organic Compounds	37
<i>Chong-Yi Chen, Yi-Hsiu Ting, Chieh-Ming Hsieh</i>	
(52i) Simultaneous Description of Thermodynamic and Transport Properties Using the Extended Soft-SAFT Equation of State	38
<i>Fèlix Llovel</i>	
(53a) Explanation of Asphaltene Phase Behavior	39
<i>Walter Chapman, Francisco Vargas</i>	
(53b) Thermodynamic Modeling of Hydrogen-Bonded Mixtures	40
<i>Aseel Bala-Ahmed, James E. Jackson, Paul M. Mathias, Navin C. Patel, Timothy C. Frank, Dung T. Vu, Eric L. Cheluguet, Carl T. Lira</i>	
(53c) Modelling of Phase Behavior of Polyethylene Solutions	41
<i>Christoph Walowski, Sabine Enders</i>	
(53d) Multi-Criteria Optimization of Thermodynamic Models: Describing Water with PCP-SAFT As an Example	42
<i>Esther Forte, Jakob Burger, Kai Langenbach, Michael Bortz, Hans Hasse</i>	
(53e) Thermodynamic Property Needs for the Oleochemical Industry	43
<i>Olivia Ana Perederic, Sawitree Kalakul, Bent Sarup, John M. Woodley, Rafiqul Gani</i>	
(53f) Multi-Property Optimization of Vapor Pressure, Heat of Vaporization, and Liquid and Ideal Gas Heat Capacities	44
<i>Joseph W. Hogge, Neil Giles, Thomas A. Knotts, Richard L Rowley, W. Vincent Wilding</i>	
(53g) Modeling Minimum Free Energy Path for Crystallization of Drug Molecules in Different Solvents	45
<i>Chengxiang Liu, Erik E. Santiso, Geoffrey Wood</i>	
(54a) John Quinn: Master Weaver of a Remarkable Professional Tapestry	46
<i>Stephen L. Matson</i>	
(54b) John Quinn: Advisor, Mentor, and Friend	47
<i>William Ward</i>	
(54c) Facilitated Transport Membranes for CO₂ Separation and Capture	48
<i>Witopo Salim, Zi Tong, Varun Vakharia, Dongzhu Wu, W.S. Winston Ho</i>	
(54d) The Force on a Body in Active Matter	49
<i>John F. Brady, Wen Yan</i>	
(54e) A Talk on Bijels, in Honor of John A. Quinn	50
<i>Kathleen Stebe</i>	
(54f) Reverse Osmosis As a Tool in Water Treatment Strategies	51
<i>Thomas Stanley</i>	
(54g) Recombinant Oleosin As a Functional Surfactant	52
<i>Daniel A. Hammer</i>	
(54h) Driving Change in Pharmaceutical Development & Manufacturing through Innovation and Standards	53
<i>Paul McKenzie</i>	
(78a) Single-File Diffusion of Gas Mixtures in Dipeptide Nanochannels: High Field Diffusion NMR Study	54
<i>Akshita Dutta, Poorvajan Sekar, Muslim Dvoyashkin, Clifford R. Bowers, Kirk J. Ziegler, Sergey Vasenkov</i>	
(78b) Exploring Diffusion in Hierarchical Zeolites with Molecular Dynamics Simulations	55
<i>J. Ilja Siepmann, Peng Bai, Swagata Parhari, Emmanuel Haldoupis, Paul J. Dauenhauer, Michael Tsapatsis</i>	
(78c) Compressibility of Confined Fluid and Its Dependence on Pressure	56
<i>Gennady Gor, Daniel W. Siderius, Vincent K. Shen, Noam Bernstein</i>	
(78d) Supercooled Water in Small Nanotubes As a Shear-Thinning Fluid	57
<i>José Cobeña, Mahdi Khademi, Muhammad Sahimi</i>	
(78e) Rich Phase Behavior of Confined Water and Ice at the Nanoscale	58
<i>Xiao Cheng Zeng</i>	
(78f) Deep Eutectic Solvents in Confinement: Structure, Dynamics and CO₂ Solubility	59
<i>Yan Shen, Francisco R. Hung</i>	
(78g) Molecular Simulation Study on Interfacial Humid Ionic Liquids in Supercapacitors	60
<i>Guang Feng, Alexei A Kornyshev, Rui Qiao</i>	

(78h) Competitive Adsorption of Linear Alkanes on Nanoporous Carbon: Density Functional Theory and Molecular Dynamics Simulation	61
<i>Jinlu Liu, D. N. Asthagiri, Walter G. Chapman</i>	
(78i) Shifting Isotropic-Nematic Transition in Strongly Confined Semi-Flexible Polymer Solutions	62
<i>Yeng-Long Chen, Dmytro Luzhbin</i>	
(86a) Investigation of the Interactions of Drug Delivery Vehicles with Pulmonary Mucus Layer	63
<i>Gokce Alp, Nihal Aydogan</i>	
(86b) Interactions and Mechanical Characterization of Spiny Particles	64
<i>Zihao Qu, Haisheng Lin, Zifu Li, J. Carson Meredith</i>	
(86c) Generating Charged Liquid Droplets By Contact Electrification	65
<i>Siowling Soh</i>	
(86d) Adhesion Forces Between Individual Oxide Nanoparticles in Gas-Phase Processes	66
<i>Samir Salameh, Lutz Mädler, Jin Won Seo, J. Ruud van Ommen</i>	
(86e) Interfacial Activity of Isotropic Particles in Fluid-Fluid Interfaces	67
<i>Yi Zhang, J. Carson Meredith, Sven H. Behrens</i>	
(86f) Adhesion Characterization of Energetic Microparticles to Functionalized Surfaces	68
<i>Darby J. Hoss, Bryan W. Boudouris, Stephen P. Beaudoin</i>	
(86g) Pattern Formation of Amphiphilic Particles and Polymers Under 2D Confinement	69
<i>Ellen M. Knapp, Ilona Kretzschmar, Raymond Tu</i>	
(86h) Interactions Between Peptide-Mimetic Nanoparticles and Synthetic Cells	70
<i>Xiaolei Chu, Fikret Aydin, Geetartha Uppaladadiam, Meenakshi Dutt</i>	
(86i) Interfacial Thermal Active Modes and Dispersion Forces	71
<i>Rene Overney</i>	
(86j) Electrostatic Origin of Enhanced Rate of Silica Surface Dissolution	72
<i>Kai Kristiansen, Howard Dobbs, Markus Valtiner, George W. Greene, J. Boles, Jacob Israelachvili</i>	
(101a) Shaping the Behavior of Colloidal Fluids	73
<i>Sharon C. Glotzer</i>	
(101b) Modeling Biosynthetic Active Matter	74
<i>Michael J. Shelley</i>	
(101c) Gas-Solid Clustering: Not Your Ordinary Instability	75
<i>Christine M. Hrenya</i>	
(101d) Dynamic Solidification of Dense Suspensions Under Shear	76
<i>Heinrich Jaeger</i>	
(101e) Rheological Modeling of Granular Flows	77
<i>Ken Kamrin</i>	
(104a) Polymer-Surfactant Layer Structure Investigated with Soft Matter Imaging and Single Molecule Force Spectroscopy	78
<i>Blaise Tardy, Tianyi Bai, Raymond R. Dagastine</i>	
(104b) Insights into Surface Hydration through Parallel Measurements of Water Diffusivity and Surface Forces	79
<i>Alex Schrader, Jacob N. Israelachvili, Songli Han</i>	
(104c) The Structure of Polyelectrolyte Brushes in the Presence of Multivalent Counterions	80
<i>Jing Yu, Jun Mao, Wei Chen, Matthew V. Tirrell</i>	
(104d) Understanding the Conformation of a Nanometer-Thick Environmentally Friendly Hydrocarbon with Short Fluorinated Side-Chains on the Solid Substrate	81
<i>Andrew Kozbial, Lei Li</i>	
(104e) Combustion Ash As a Potential Electrode Material: Modifying Surface Structures Via Electrical Treatment	82
<i>Megan Webster, Ilona Kretzschmar, Nathan Winkler, Marco Castaldi</i>	
(104f) Characterizing the Electrochemically Enhanced Dissolution of Silica and Alumina in Alkaline Environments	83
<i>Howard Dobbs, Kai Kristiansen, Alex Schrader, Bradley F. Chmelka, Jacob Israelachvili</i>	
(104g) Load Induced Hydrodynamic Lubrication of Porous Polymers: An Explanatory Study of Underlying Mechanisms	84
<i>Shreyas Oak, Noshir Pesika, Tushar Khosla</i>	
(104h) Role of Surface Microstructure and Elasticity in Promoting Lubricated Contact and Adhesion	85
<i>Joelle Frechette, Georgia Pilkington, Charles Dhong</i>	
(104i) Bioinspired Multiphase Humidity- and Rate-Dependent Capillary Adhesives	86
<i>Donglee Shin, J. Carson Meredith</i>	
(104j) Influence of Humidity on Gecko-Inspired Adhesives	87
<i>Nicholas Cadirov, Jamie Booth, Kimberly Turner, Jacob N. Israelachvili</i>	
(105a) Development of Resorcinol Formaldehyde Aerogels with Enhanced Mechanical Properties Via Improved Particle Necking	88
<i>Mohammed Alshrah, Hani Naguib, Chul B. Park</i>	
(105b) Adsorptive Precipitation from Supercritical Solutions in Aerogels: A Way Towards Stable Amorphous Drugs	89
<i>Pavel Gurikov, Irina Smirnova</i>	
(105c) Protein Based Aerogels: Preparation, Applications and Potential for Food Engineering	90
<i>Irina Smirnova, Ilka Selmer, Ulrich Kulozik, Christian Kleemann</i>	
(105d) Alginic Acid Foams with Hierarchical Porosity: Promising Materials for Dyes Adsorption	91
<i>Nathalie Tanchoux, Asja Pettignano, Luca Bernardi, Thierry Vincent, Eric Guibal, Françoise Quignard</i>	

(105e) Thermoplastic Foaming Assisted By Microwave	92
<i>Elham Rezyanpanah, S. Reza Ghaffarian Anbaran, Ernesto Di Maio</i>	
(105f) Polyurethane Foam Expansion, Polymerization and Bubble Pressurization	98
<i>Rekha R. Rao, Lisa A. Mondy, Christine Cardinal Roberts, Kevin N. Long, David R Noble, Mathew C. Celina, Victor Bruhini</i>	
(105g) The Role of Viscoelasticity in Bubble Breaking	99
<i>Daniele Tammaro, Rossana Pasquino, Massimiliano M. Villone, Gaetano D'Avino, Ernesto Di Maio, Massimiliano Fraldi, Antonio Langella, Nino Grizzuti, Pier Luca Maffettone</i>	
(105h) The Use of the Viscoelasticity in Polymer Foaming to Obtain a Fully Opened Cell Structure	100
<i>Daniele Tammaro, Rossana Pasquino, Massimiliano M. Villone, Gaetano D'Avino, Ernesto Di Maio, Nino Grizzuti, Pier Luca Maffettone</i>	
(141a) Sprial Vortex Instability in Microfluidic Cross-Slot Flow	101
<i>Simon Haward, Noa Burshtein, Amy Shen</i>	
(141b) Multicomponent Polymer Gels with Enhanced Elasticity	102
<i>Wendy Hom, Bingqian Zheng, Surita Bhatia</i>	
(141c) Understanding Structural Changes in Complex Fluids at High Shear Rates: Developing μrheosans	103
<i>Javen Weston, Daniel Seeman, Daniel L. Blair, Kathleen Weigandt, Steven D. Hudson</i>	
(141d) The Effect of Branching on Shear Banding in Wormlike Micelles (WLMs) Under Large Amplitude Oscillatory Shear (LAOS).....	104
<i>Michelle A. Calabrese, Simon A. Rogers, Lionel Porcar, Norman J. Wagner</i>	
(141e) Structure and Rheology of Branched Micellar Fluids from Molecular Dynamics Simulations	107
<i>Kelechi Okoroafor, Subas Dhakal, Radhakrishna Sureshkumar</i>	
(141f) Distinguishing Shear Banding from Shear Thinning in Flows with a Shear Stress Gradient.....	108
<i>Peng Cheng, Michael C. Burroughs, L. Gary Leal, Matthew E. Helgeson</i>	
(141g) Associating Colloids and Active Surfaces; A Density Functional Theory Approach with Multi-Body Correlations.....	109
<i>Amin Haghmoradi, Le Wang, Walter G. Chapman</i>	
(141h) Single Molecule Studies of DNA-PNIPAM Copolymers	110
<i>Songsong Li, Charles M. Schroeder</i>	
(141i) System Size Dependent Rheology of Sheared Lamellar Phases	111
<i>Viswanathan Kumaran, Someshwar Jaju</i>	
(141j) From Microstructure to Macro-Rheology in Complex Fluids: Towards Targeted Rheology-Assisted Structural Assembly of Attractive Systems	112
<i>Safa Jamali, Gareth H. McKinley, Robert C. Armstrong</i>	
(151a) Enhancement of Van Der Waals Mediated Adhesion of Mosquito Leg to Fibrous Surfaces	115
<i>Leila Pashazanusi, Noshir Pesika, Nirbhay Kumar, Geetha P Bansal, Julie Albert, Baraka S Lwoya, Tushar Khosla</i>	
(151b) Filling of Initially Empty Cavities By Advancing Water Fronts.....	116
<i>Dongjin Seo, Alex Schrader, Dong-woog Lee, Yair Kaufman, Szu-Ying Chen, Yonas Gizaw, Peter Koenig, Jacob N. Israelachvili</i>	
(151c) Control of Microstructure During Roll-to-Roll Deposition of Self-Assembled Colloidal Monolayers	117
<i>James F. Gilchrist, Xue Li, Zhiqiao Zeng</i>	
(151d) Scalable Nanomanufacturing Platforms Enabled By Bottom-up Colloidal Self-Assembly	118
<i>Peng Jiang</i>	
(151e) Effect of the Surface Charge Distribution on the Fluid Phase Separation of Charged Colloids and Proteins	119
<i>Marco A. Blanco, Vincent K. Shen</i>	
(151f) Industrial Viability Study of the Synthesis of Nanoparticles for Use As Lubricant Additives.....	120
<i>Greg K. James, Mark Devlin, Jillian N. Stemmler</i>	
(151g) Dual-Responsive Block-Arm Star Copolymers for on-Demand Reduction or Enhancement of Friction and Adhesion	121
<i>John K. Riley, Robert D. Tilton</i>	
(151h) Self-Assembly of Thermoresponsive Colloidal Clusters of Patchy Particles Via Capillary Binding.....	122
<i>Bhuvnesh Bharti, David M. Rutkowski, Carol K. Hall, Orlin D. Velev</i>	
(151i) Synchrotron X-Ray Reflectivity and Computational Simulations of Structural Organization of the Binary Mixture 5CB/8CB Liquid Crystals at Liquid Crystal-Air Interface	123
<i>Monirosadat Sadati, Hadi Ramezani-Dakheel, Wei Bu, Emre Sevgen, Cem Erol, Nader Taheri Qazvini, Zhu Liang, Mohammad Rahimi, Binhua Lin, Nicholas L. Abbott, Benoit Roux, Mark Schlossman, Juan J. de Pablo</i>	
(151j) Interfacial Properties of Nanoconfined Ionic Liquids.....	124
<i>Yuanzhong Zhang, Ming Zhang, Younjin Min</i>	
(153a) Thermodynamic Models for Solid – Liquid – Gas Equilibrium of CO2 mixtures.....	125
<i>Ilias K. Nikolaidis, Georgios C. Boulougouris, Loukas D. Peristeras, Ioannis G. Economou</i>	
(153b) High Pressure Multiphase Equilibria Modeling with GCA-EoS	126
<i>Mariana Gonzalez Prieto, Francisco A., Sánchez, Selva Pereda</i>	
(153d) Modeling of Near-Critical and Supercritical Properties Via the Virial Equation of State	127
<i>Shu Yang, Navneeth Gokul, Andrew J. Schultz, David A. Kofke</i>	
(153e) Molecular Simulation of Double Retrograde Vaporization	128
<i>J. Ilja Stiepmann, Angel D. Cortés-Morales, Nikolaos I. Diamantonis, Ioannis G. Economou, Cor J. Peters</i>	
(153f) Modelling of Phase and Interfacial Behavior of Ternary Mixtures	129
<i>Sabine Enders</i>	
(153g) Interfacial Investigations of Gas Hydrates in Flow Assurance & Energy Applications.....	130
<i>Ahmad Abdul Majid, Erika Brown, Vishal Srivastava, Jose Dapena, M. Naveed Khan, Thomas Charlton, Carolyn A. Koh</i>	
(156a) The Prediction of Environmentally Important Properties for Hazardous Chemicals	131
<i>Stanley Sandler</i>	

(156b) Corresponding States Theory for Property Prediction at the Nanoscale	132
<i>Keith E Gubbins</i>	
(156c) Heat Induced and UV Induced Grafting of Poly(glycidyl methacrylate) on PBT Nonwovens for Bioseparations	133
<i>Ruben G. Carbonell, Michael Heller, Benham Pourdeyhimi</i>	
(156d) Thermodynamics and Statistical Mechanics of Drying at the Nano-Scale	134
<i>Pablo G. Debenedetti, Y. Elia Altabet</i>	
(156e) Harmonically-Mapped Averaging Applied to Lennard-Jones Crystal Phase	135
<i>Andrew J. Schultz, Apoorva Purohit, David A. Kofke</i>	
(156f) Computational-Hydrodynamic Studies of the Noh Compressible Flow Problem Using Non-Ideal Equations of State	136
<i>Kevin Honnell, Sarah Burnett, Scott Ramsey</i>	
(156g) Lattice Models, Polymers and DNA Topology	137
<i>Chris Soteris</i>	
(156h) Design of Macromolecular Biomaterials Using Atomistic and Coarse-Grained Molecular Simulations	138
<i>Arthi Jayaraman, Ahmadrza F. Ghobadi</i>	
(156i) Rational Design of Peptide-Based Stimuli-Responsive Biomaterials Via Multiscale Modeling	139
<i>Hung D. Nguyen</i>	
(161a) Dynamic Self-Assembly of Human Cells Using Inertial Microflow	140
<i>Hamed Haddadi, Dino Di Carlo, Hamed Nilchi, Soroush Kahkeshani</i>	
(161b) Theoretical Model for the Aspect Ratio-Based Separation of Ellipsoidal Particles in Field-Flow Fractionation	141
<i>Joontaek Park, Saman Monjezi, Angelica Oliva, Sutapa Barua, Jaeyeoung Choi, Seungho Lee</i>	
(161c) A Library of Soft Particles for the Study of Lateral Migration in Low Reynolds Number Flow	142
<i>Margaret Y. Hwang, Susan J. Muller</i>	
(161d) Microfluidic Particle Operations Based on One-Way Particle Transport in Asymmetric Traps	143
<i>Jaesung Lee, Mark A. Burns</i>	
(161e) Criteria for Drop Generation in Microfluidic Devices	144
<i>Joseph D. Buttacci, Michael Loewenberg</i>	
(161f) Droplet Locomotion Over Oil Immersed Superhydrophobic Surfaces	145
<i>Archit Dani, Charles Maldarelli</i>	
(161g) Controlled Oil Entrapment Through Photo-Patterned Obstacles	146
<i>Ankur Gupta, Hyundo Lee, T. Alan Hatton, Patrick Doyle</i>	
(161h) Measuring Partition Coefficients of Single Walled Carbon Nanotubes in Aqueous Two Phase Microliter Droplets	147
<i>Christopher W. Nelson, Shelley L. Anna</i>	
(161i) Deterministic Lateral Displacement of Semiflexible Chain Dynamics in Microfluidic Pillar Arrays	148
<i>Jingjing Zhao, Ziyi Zhu, Sibani Lisa Biswal</i>	
(161j) 3D Chaotic Printing: Using Simple Chaotic Flows to Fabricate Complex Microstructure	149
<i>Grissel Trujillo-de Santiago, Mario M. Alvarez, Gyan Prakash, Mohamadmahdi Samandari, Gouri Chandrabhatla, Byambaa Batzaya, Parisa Pour Shahid Saeed Abadi, Reginald K. Avery, Amir Nasajpour, Yu Shrike Zhang, Ali Khademhosseini</i>	
(178a) Kinetic Modeling of Propene Hydroformylation in Propane-Expanded Liquid with Rh-Based Complexes	150
<i>Dupeng Liu, Raghunath V. Chaudhari, Bala Subramaniam</i>	
(178b) Catalytic Cracking of Dodecane in Supercritical Water	151
<i>Azadeh Zaker, Patricia Guerra, Geoffrey Tompsett, Michael T. Timko</i>	
(178c) Demetallation of Biocrude From Hydrothermal Liquefaction of Microalgae	152
<i>Jimeng Jiang, Phillip E. Savage</i>	
(178d) Pilot-Scale Continuous Flow Reactor for Hydrothermal Liquefaction of Algae	153
<i>Catherine E. Brewer, Feng Cheng, Travis Le-Doux, Juanita Miller</i>	
(178e) Production of Biodiesel Fuel Via Sub/Supercritical Transesterification Reactions with Trace Amount of Homogeneous Catalysts	154
<i>Jiuxu Liu, Yue Nan, Lawrence L. Tavlarides</i>	
(178f) Molecular and Microkinetic Modeling of Supercritical Fluid and Liquid-Phase Fischer-Tropsch Synthesis	155
<i>Kenneth M. Benjamin, Alireza Asiaee</i>	
(178g) Intensified Hydrolysis By Employing the Synergy of Mixed Subcritical H₂O and Supercritical CO₂	156
<i>Armando Quitain, Akito Hashimoto, Saya Yamafuku, Mitsuru Sasaki, Tetsuya Kida</i>	
(201a) Session Keynote - Co-Extrusion: Advanced Manufacturing for Energy Devices	157
<i>Corie Cobb</i>	
(201b) Instability of Reversible Pump Turbines and Its Physical Origin	158
<i>Yuning Zhang</i>	
(201c) Simplified Model of a Redox Flow Battery for Deriving Design and Dispatch Strategies in a Resource Planning Tool	159
<i>Bharatkumar Suthar, Michael Scioletti, Alexandra Newman, Paul Kohl</i>	
(201d) Selection of Ion-Exchange Membrane for Vanadium Redox Flow Battery	160
<i>Jiri Vrana, Jiri Charvat, Petr Mazur, Jan Dundalek, Jaromir Poceedic, Juraj Kosek</i>	
(201e) Energy Storage for the Enhancement of Penetration Level of Wind Energy: A Case Study	161
<i>Yuning Zhang</i>	
(201f) An Investigation of a Polysulfide – Polyiodide Aqueous Redox Flow Battery	162
<i>Liang Su, Andres F. Badel, Fikile Brushett</i>	

(218a) Liquid Polyamorphism: From Metallic Hydrogen to Supercooled Water	163
<i>Mikhail A. Anisimov, Jan V. Sengers</i>	
(218b) Modeling of Alternative Solvents for Sustainable Processes: Supercritical CO₂ and Ionic Liquids.....	164
<i>Lourdes F. Vega, Felix Llovell</i>	
(218c) Volumetric Properties and Modeling of the Binary Mixtures of Ethanol with Ionic Liquids [BMIM]Ac and [BMIM]Cl.....	165
<i>James Dickmann, Carter Berry, Joon-Hyuk Yim, John C. Hassler, Erdogan Kiran</i>	
(218d) High-Pressure Hydroformylation Reaction Equilibria.....	166
<i>Gabriele Sadowski, Max Lemberg, Martin Gerlach, Emilija Kohls, Christof Hamel, Matthias Stein, Andreas Seidel-Morgenstern</i>	
(218e) Optimization of Hydrothermal Liquefaction of Palm Kernel Shell to Bio-Oil By Response Surface Methodology and Synergistic Effect of Supercritical CO₂	167
<i>Yi Heng Chan, Suzana Yusup, Armando Quitain, Yoshimitsu Uemura, Mitsuru Sasaki, Tetsuya Kida</i>	
(218f) Development of Solvent Selection Guide for CO₂ Spray Coating System.....	180
<i>Yoshiyuki Sato, Tomoki Shimada, Kohei Abe, Hiroshi Inomata, Shin-ichiro Kawasaki</i>	
(218g) Dilute Solution Thermodynamic Study of Phosphatidylcholine - Organic Solute Systems Using Inverse Gas Chromatography (IGC).....	186
<i>Jerry W. King, Rodrigo Araya, Jonathan M Curtis, Feral Temelli, Yuan-Yuan Zhao</i>	
(218h) Measurement and Correlation of Solubility and Diffusion Coefficient of Ethylene in Molten Propylene-Co-Polymers	187
<i>Suiri Takizawa, Yoshiyuki Sato, Hiroshi Inomata</i>	
(218i) Molecular Structure and Dynamics in Room Temperature Ionic Liquids – Insights from Molecular Experiment and Simulation.....	195
<i>Peter T. Cummings, Song Li, Guang Feng</i>	
(220a) Slip Slidin' Away: Three Decades of Adventures in Computational Rheology and Lubrication.....	196
<i>Peter T. Cummings, Clare McCabe, Christoph Klein, Christopher R. Iacovella</i>	
(220b) How to Make Particles Interact in Multiple Directions and Form Interconnected Networks: Colloidal Assembly Based on Field-Induced Multipoles.....	197
<i>Orlin D. Velev, Bhuvnesh Bharti</i>	
(220c) Polymers in Ionic Liquids	198
<i>Arun Yethiraj</i>	
(220d) Collective Dynamics of Dipolar and Multipolar Colloids: From Passive to Active Systems	199
<i>Sabine H.L. Klapp</i>	
(220e) Promising Vistas for Applied Chemical Thermodynamics: Statistical Mechanics As a First Step Toward Thermodynamic Properties.....	200
<i>John Prausnitz</i>	
(220f) A Biased Review About Computer Simulations of Protein Folding and Aggregation.....	201
<i>Daniel Forciniti</i>	
(220g) “Grafting Through” Polymerization	202
<i>Jan Genzer</i>	
(220h) Understanding Temperature-Responsive Behavior of Elastin-like Polypeptides	203
<i>Yaroslava G. Yingling</i>	
(220i) Utilizing Multivariate Analysis to Enhance Bioprocess Development and Operation	204
<i>Mauricio Futran</i>	
(220j) Self-Assembly of Colloids in Ordered Carrier Fluids	205
<i>Martin Schoen</i>	
(222a) The Relationship Between Chitinase Binding Affinity, Processivity, and Work Required to Decrystallize β-Chitin	206
<i>Suvamay Jana, Christina M. Payne, Anne G. Hamre, Morten Sørlie</i>	
(222c) Studying Peptoid Side-Chain/Structure Relationships Using Metadynamics and the Generalized Charmm Force Field.....	207
<i>Laura Weiser, Erik E. Santiso</i>	
(222d) Reactive Molecular Dynamics Simulation of Liquid Water and Ice Crystal (Ice-1h) Using a New Generation of Reactive Force Fields Based on Polarized Charge Distributions and Valance Bond Concepts	208
<i>Saber Naserifar, Sergey Zybin, Andres Jaramillo-Botero, William A. Goddard</i>	
(222e) Effect of Functionalization on Surfactant Activity of Amphipathic Surfactants – Physics of Bile Salts and Counter-Ions in Aqueous Suspensions of Single-Walled Carbon Nanotubes.....	209
<i>Ketan S. Khare, Frederick R. Phelan</i>	
(222f) Investigating the Planarity of Aromatic Rings in Bimolecular Modeling.....	210
<i>Faramarz Joodaki, Lenore M. Martin, Michael L. Greenfield</i>	
(222g) Probing the Structure and Aggregation Features of 1-N-alkyl-3-Methyl Imidazolium Octylsulfate Ionic Liquid Homologous Series Using Molecular Dynamics Simulations.....	211
<i>Utkarsh Kapoor, Jindal K. Shah</i>	
(222h) Bulk Property Changes in Glassy Materials Induced By Photoisomerization of Azobenzene	212
<i>Lucas Antony, Juan De Pablo, Mark Ediger, Sankaran Thayumanavan, Yue Qiu, Poornima Rangadurai</i>	
(222i) Multi-Scale Modeling of Periodic Mesoporous Silica Materials: Exploring the Role of Silica Oligomers.....	213
<i>Szu-Chia Chien, Germán Pérez-Sánchez, M. Natália D. S. Cordeiro, José R. B. Gomes, Miguel Jorge, Scott M. Auerbach, Peter A. Monson</i>	
(222j) Dsmc Simulations of Leading Edge Flat-Plate Boundary Layer Flows at High Mach Number	214
<i>Sahadev Pradhan</i>	

(230p) Multiscale Modeling of Reacting Polymer Foams Via Computational Fluid Dynamics and Molecular Dynamics	218
<i>Mohsen Karimi, Erik Laurini, Maurizio Fermeglia, Sabrina Pricl, Daniele Marchisio</i>	
(230e) Capillary Disconnect During Evaporation in Porous Media: Visualization of Transition from Stage-1 to Stage-2 Evaporation Regime	219
<i>Ayorinde Rufai, John Crawshaw, Geoffrey Maitland</i>	
(230ax) Visualization Phases Distributions in the Pilot-Scale Bubble Column with Internals Via γ-Ray Computed Tomography (CT) Technique	220
<i>Abbas Sultan, Laith Sabri, Al-Dahhan Muthanna</i>	
(230al) Microalgae's Cells Mapping By Radioactive Particle Tracking (RPT)	221
<i>Laith Sabri, Abbas Sultan, Al-Dahhan Muthanna</i>	
(230aa) Discrete Element Model of Concentrated Colloidal Dispersions: Linking Viscosity to Cluster Properties	222
<i>Martin Kroupa, Michal Vonka, Miroslav Soos, Juraj Kosek</i>	
(230ab) Relationships Between Structure and Permeability in Colloidal Networks	223
<i>Lev Gelb, Alex Mertz, Marc Ingber, Alan L. Graham, Antonio Redondo</i>	
(230av) Scalable Tools for Generating Synthetic Isotropic Turbulence with Arbitrary Spectra	224
<i>Tony Saad, Derek Cline, James C. Sutherland</i>	
(230o) Head Loss in Gate and Globe Valves on Pumping Thixotropic Polymer Solutions	225
<i>Daniel Torneiros, Vitor Rosa, Marco Cesar Matos, Maria Elena Taqueda, José Paiva, Deovaldo Moraes Júnior</i>	
(230c) Bubble and Droplet Coalescences in Microchannels	226
<i>Kai Wang, Qianqian Zhou, Sun Yue, Lu Yang, Guangsheng Luo</i>	
(230j) Collective Dielectrophoretic Trapping Assisted By AC Electrokinetic Flow	227
<i>Hsien-Hung Wei, Tzu-Han Liang, Yi-Ching Chen, Chih-Yi Lin</i>	
(230ad) Label Free Size Separation Strategies for Polydisperse Vesicle Suspensions	228
<i>Kari J. Storslett, Susan J. Muller</i>	
(230w) A Graph-Based Method for Structure Classification in Amorphous Materials	229
<i>Yuxing Zhou, Scott T. Milner</i>	
(230f) Two-Layer Spin Coating Flow of Newtonian Liquids: A Computational Study	230
<i>Subhadarshinee Sahoo, Akash Arora, Pankaj Doshi</i>	
(230i) High Throughput Microfluidic Platform to Characterize Flow Resistance of Trapped Deformable Particles	231
<i>Naureen Suteria, Valeria Garbin, Siva Vanapalli</i>	
(230s) Dynamics of Linear and Comb DNA Solutions Using Efficient Brownian Dynamics Techniques	232
<i>Amir Saadat, Danielle J. Mai, Bamin Khomami, Charles M. Schroeder</i>	
(230h) Mechanism Driving Fluid Circulation in a Microcavity Junction Due to Immiscible Displacement Flow	233
<i>William S. Wang, Siva A. Vanapalli</i>	
(230t) Gelation Process of in Situ Crosslinkable Hydrogels in the Static Mixer	234
<i>Takuro Hozumi, Seiichi Ohta, Taichi Ito</i>	
(230k) Structure of Internal Circulations in Slug Flow Through a Rectangular Micro-Channel	235
<i>B. Dinesh, Sundari Ramji, S. Pushpavanam</i>	
(230b) Hierarchical Emulsion Networks from Endoskeletal Droplets	236
<i>Tamás A. Prileszky, Eric M. Furst</i>	
(230q) Microrheological Measurements of the Degradation of Covalently Adaptable Hydrogel Scaffolds	237
<i>Francisco Escobar, Daniel McKinnon, Kristi S. Anseth, Kelly M. Schultz</i>	
(230ay) Modeling of Ultra-High Density Bio-Reactor	238
<i>Sumitava De, Nikolaos Kladias, Aravind Rammohan</i>	
(230r) Single Molecule Studies of Ring Polymer Dynamics in Dilute and Semi-Dilute Solutions	239
<i>Kai-Wen Hsiao, Charles Sing, Gregory B. McKenna, Charles M. Schroeder</i>	
(230ap) Lda Measurement of a Simplified Nasal Cavity	240
<i>Manuel Berger, Martin Pillei, Michael Kraxner</i>	
(230y) Shear-Induced Structural Changes in Electrostatically Gelled Nanoparticle Dispersions	241
<i>Javen Weston, Kathleen Weigandt</i>	
(230ak) Theory of Margination in Blood and Other Multicomponent Suspensions	242
<i>Michael Graham, Rafael G. Henríquez Rivera, Xiao Zhang</i>	
(230ac) Gravitational Collapse of Colloidal Gels: Structure, Dynamics, and Rheology	243
<i>Poornima Padmanabhan, Roseanna N. Zia</i>	
(282d) Water-in-Diesel Fuel Emulsions Using Non-Ionic Surfactants: An Experimental Study	244
<i>Richa Tungal</i>	
(230ai) Stretching Behavior of Red Blood Cells at High Strain Rates	245
<i>Jordan E. Mancuso, William D. Ristenpart</i>	
(230n) Capillary Flow Dynamics in 3D Printed, Open Microchannels	246
<i>Robert Lade, Erik Hippchen, Christopher W. Macosko, Lorraine F. Francis</i>	
(230aj) Time Evolution of Shear-Induced Particle Margination and Migration in a Cellular Suspension	247
<i>Qin M. Qi, Eric S. G. Shaqfeh</i>	
(230ae) A New Dielectric Rheosans Instrument for the Simultaneous Interrogation of Rheology, Microstructure, and Electronic Properties of Flow Battery Electrodes	248
<i>Jeffrey J. Richards, Norman Wagner, Paul Butler</i>	
(230l) Using Microfluidic Device to Study Rheological Properties of Heavy Oil	249
<i>Kiarash Keshmiri, Saeed Mozaffari, Plamen Tchoukov, Haibo Huang, Neda Nazemifard</i>	

(230au) Early Atherogenesis: How Blood-Pressure-Driven Flow and Membrane Proteins Influence Artery Wall Mechanics and Mass Transfer Across the Artery Wall	257
<i>Shripad D. Joshi, Chirag B. Raval, David S. Rumschitzki</i>	
(230an) Viscoelasticity of Mucus Layers Secreted By Intestinal Epithelial Cells	258
<i>Charles W Manke, David M. Liberati, Lawrence N. Diebel, Bhanu P. Jena, Kenneth Lewis, Emily J. Harvey</i>	
(230at) Dynamics of Thrombus Formation in a Microfluidic Network Mimicking Vasculature	259
<i>Jevgenia Zilberman-Rudenko, Joanna L. Sylman, Owen J T McCarty, Jeevan Maddala</i>	
(230af) Nonlinear Relaxation Modulus Via Dual-Frequency Medium Amplitude Oscillatory Shear (MAOS): General Framework and a Case Study for a Dilute Suspension of Brownian Spheroids	260
<i>Toni Bechtel, Aditya S. Khair</i>	
(230ag) Modeling the Viscosity of Polydisperse Suspensions	261
<i>Paul M. Mwasame, Norman J. Wagner, Antony N. Beris</i>	
(230d) Impact of Colloidal Stability on the Electric Field Driven Break-up of Non-Aqueous Suspension Drops	262
<i>Javier Lanauze, Aditya S. Khair, Lynn M. Walker</i>	
(230z) Microstructure-Rheology Relationships in Strongly Shear Thickening Colloidal Dispersions	263
<i>Norman Wagner, Kevin Whitcomb</i>	
(230v) A Universal Interpretation of Transient Viscoelastic Extensional Dynamics: Application to Single Polymer Experiments	264
<i>Yuecheng Zhou, Charles M. Schroeder, Simon A. Rogers</i>	
(230u) Free Surface Flows and Extensional Rheology of Polymer Solutions	265
<i>Jelena Dinic, Leidy N. Jimenez, Madeleine Biagioli, Alexandro Estrada, Vivek Sharma</i>	
(230ao) Drosophila Melanogaster Embryo As an Active Granular Fluid: Intercellular Coordination Via Mechanical Feedback During Morphogenesis	266
<i>Michael C. Holcomb, Guo-Jie Jason Gao, Jeffrey H. Thomas, Jerzy Blawdziewicz</i>	
(230am) Two Spheres and a Spring Make a Good Swimmer	267
<i>Daphne Kloitsa, Kyle A. Baldwin, Richard J. A. Hill, Michael R. Swift, Roger M. Bowley</i>	
(230ar) Predicting Fractional Flow Reserve Using Computational Fluid Dynamics and Response Surface Method Statistics	268
<i>Javad Hashemi, Shahab Ghafghazi, R. Eric Berson</i>	
(230m) Numerical Study of the Effect of Wall Wettability on CO₂-Water Two-Phase Flow with Mass Transfer in Microchannels	269
<i>Chongwei Xiao, Hariganesh Bheema</i>	
(230a) Miscible, Unstable Viscous Fingering Patterns in a Radial Hele-Shaw Cell	270
<i>Britany Swann</i>	
(230ah) Probing Dynamics of a Magnetic Colloidal Chain Confined in a Spherical Cavity	271
<i>Ziyi Zhu, Sibani Lisa Biswal</i>	
(230g) Estimation of the Drying Length During Particle Assembly By Convective Deposition	272
<i>Kedar Joshi, James F. Gilchrist</i>	
(230x) Shear-Induced Clustering of Brownian Colloids in Associative Polymer Networks at Moderate Peclet Number	273
<i>Juntae Kim, Matthew E. Helgeson</i>	
(232ab) On the Electrical Double Layers of Multi-Component Electrolytes	274
<i>Kenji Kiyohara, Masaki Yamagata, Masashi Ishikawa</i>	
(232ah) Heat Transfer Enhancement from a Hot Steel Plate Using Triton X-100 Surfactant Additive in Water Jet	275
<i>Ishita Sarkar, Surjya K. Pal, Sudipto Chakraborty</i>	
(232i) Phase Behaviors and Physical Properties of Microemulsion of Palm Oil and Ethanol Emulsified By Low HLB Type of Anionic and Cationic Surfactants	276
<i>Atthaphon Maneedaeng, Somruethai Simla</i>	
(232a) Removal of Endotoxins Using Polymer Nanoparticles	277
<i>Andrew Lyon, Sutapa Barua</i>	
(232n) Shape-Controlled Synthesis of Ag Nanocrystals Mediated By Polyvinylpyrrolidone: Thermodynamics Vs. Kinetics	278
<i>Xin Qi, Kristen Fichthorn</i>	
(232p) Controlled Synthesis of Organic Nanowires on Gold Nanoparticle Seeds for Sensors Applications	279
<i>Xuecheng Yu, Pedram Jahanian, Guangzhao Mao</i>	
(232o) Customizing Polyelectrolyte Complex Shape Through Photodirected Assembly	280
<i>Udaka K. de Silva, Njideka H. Okoye, Justin A. Wengatz, Yakov Lapitsky</i>	
(232k) Self-Assembly of Anionic Surfactants in Aprotic Imidazolium Ionic Liquids	281
<i>Jacek Gregorowicz, Beata Kusiak, Piotr Bernatowicz, Piotr Korczyk</i>	
(232v) A Theoretical Approach to Predict Adsorption Isotherms of Isomers Using Density-Functional-Theory and Lattice-Cluster-Theory	282
<i>Patrick Zimmermann, Thomas Goetsch, Tim Zeiner, Sabine Enders</i>	
(232m) Shape Driven Colloidal Crystal—Crystal Transitions	285
<i>Chrisy Xiyu Du, Greg van Anders, Richmond S. Newman, Sharon C. Glotzer</i>	
(232ac) Penetration of a Non-Swelling Liquid into a Tableted Porous Medium	286
<i>Jesus Esteban, Serafim Bakalis, Claire Duckitt, Hossam Tantawy, Peter J. Fryer</i>	
(232w) Cyclopentane Hydrate Formation Equilibria with Varying HLB Numbers in Sorbitan Monoester Surfactants	296
<i>Seungjun Baek, Juwon Min, Jae W. Lee</i>	

(232ad) Ionic Conductance in Alumina Nanochannels: Temperature and pH Effects	297
<i>Yen-Shao Su, Li-Hsien Yeh</i>	
(232d) Current Rectification in a Nanopore with Biomimetic Functional Groups	298
<i>Chu-Han Chang, Yen-Shao Su, Li-Hsien Yeh</i>	
(232z) Fabrication of pH-Sensitive Ionic Diodes in Highly Ordered Alumina Nanochannel Arrays	299
<i>Wen-Hung Lan, Yen-Shao Su, Li-Hsien Yeh</i>	
(232t) Effect of Surfactant Architecture on Micelle and Reverse Micelle from iSAFT Molecular Density Functional Theory	300
<i>Le Wang, Amin Haghighmoradi, George J. Hirasaki, Clarence A. Miller, Walter G. Chapman</i>	
(232aa) Rectifying Ionic Current in Polyelectrolyte-Functionalized Bipolar Nanopores	301
<i>Chih-Yuan Lin, Li-Hsien Yeh, Jyh-Ping Hsu</i>	
(232ae) Development of Approaches to Couple Aerosol Charging with Aerosol Coagulation	302
<i>Yong-ha Kim, Sotira Yiacoumi, Athanasios Nenes, Costas Tsouris</i>	
(232u) Molecular Dynamics Study of the Capacitive Performance of Oxidized Graphene	303
<i>Yu Zhang, Boris Dyatkin, C. Heath Turner, Yury Gogotsi, Peter T. Cummings</i>	
(232c) Peg-Coated Silver Nanoparticle Surface Activity and Lipid Monolayer Interactions	304
<i>Nasim Ganji, Iftheiker Khan, Geoffrey D. Bothun</i>	
(727j) Continuous Flow Synthesis of Noble Metal Patchy Particles	305
<i>Thomas Meincke, Robin N. Klupp Taylor</i>	
(232q) Gelation of Polymer-Grafted Silica Nanoparticles Studied with X-Ray Photon Correlation Spectroscopy (XPCS) and Rheology	306
<i>Subramanian Ramakrishnan, John Telotte, Divya Bahadur</i>	
(232h) Understanding Optimal Oil-in-Water Emulsifier Formulation Using Interfacial Tensiometry and Microstructural Studies	307
<i>David Riehm, Alon McCormick</i>	
(232r) Simulating Total Internal Reflection Microscopy of Anisotropic Particles	308
<i>Idin Rashidi, Christopher Wirth</i>	
(262aw) Ionic Current Rectification in a Polyelectrolyte-Modified Conical Nanopore	309
<i>Shiojenn Tseng, Chih-Yuan Lin, Hou-Hsueh Wu, Jyh-Ping Hsu</i>	
(262ax) Diffusiophoresis of a pH-Regulated Toroidal Polyelectrolyte in a Solution Containing Multiple Ionic Species	310
<i>Shang-Hung Hsieh, Jyh-Ping Hsu, Shiojenn Tseng</i>	
(262bd) Study on the Transient Interfacial Tension in a Microfluidic Droplet Formation Coupling Interphase Mass Transfer Process	311
<i>Wenjie Lan, Shaowei Li, Che Wang, Xuqiang Guo, Guangsheng Luo</i>	
(262k) Equation of State Selection for Organic Rankine Cycle Modeling Under Uncertainty	312
<i>Jerome Frutiger, John O'Connell, Jens Abildskov, Gürkan Sin</i>	
(262j) Computational Thermodynamic Analysis of a Solar Thermochemical Manganese Oxide - Manganese Sulfate Water Splitting Cycle	313
<i>Rahul Bhosale, Parag N. Sutar, Fares Almomani, Dureen Dardor, Marc Rosen</i>	
(262ar) Phase Equilibria Prediction for Systems Containing Lipids	326
<i>Olivia Ana Perederic, Larissa P. Cunico, Bent Sarup, John M. Woodley, Rafiqul Gani</i>	
(262as) Viscosity and Density of (CO₂ + Synthetic Crude Oil) Mixtures at Temperatures From (298 to 423) K and at Pressures up to 100 Mpa	327
<i>Claudio Calabrese, Geoffrey Maitland, J. P. Martin Truster</i>	
(262a) A Fundamental Understanding of Cation Transport in Mixed Metal Ferrite Spinel	328
<i>Christopher L. Muhich, Victoria J. Aston, Ryan Trottier, Alan W. Weimer, Charles B. Musgrave</i>	
(262o) Designing an Extraterrestrial Submarine for Titan. III. Estimating Titan Sea Mixture Properties	329
<i>Jason W. Hartwig, Peter Meyerhofer, Ian Richardson, Steve Oleson, Anthony Colozza, Ralph Lorenz</i>	
(262bc) Solubility of Gases in Conventional Solvents and an Ionic Liquid for Synthesis Gas and Natural Gas Sweetening from Monte Carlo Simulations	330
<i>Seyed Hossein Jamali, Mahinder Ramdin, Thijs J. H. Vlugt</i>	
(262m) Prediction of Flash Points: A Review and Practice on Ethanol-Blends	331
<i>Bernard Liat Wen Loo, Kok Hwa LIM, Guo Zhen, Reginald Thio</i>	
(262af) Phase Equilibrium of Major Components of Essential Oils in Liquid and Supercritical Carbon Dioxide	332
<i>Odell L. Glenn</i>	
(262am) Prediction of Liquid Kinematic Viscosities Using the Eos + GE Mixing Rule with Eyring-Activity Coefficient Models	333
<i>Katsumi Tochigi, Hiroyuki Matsuda, Kiyofumi Kurihara, Toshitaka Funazukuri, V.K. Rattan</i>	
(262q) Development of a Thermodynamic Model for Confined Fluids	334
<i>Noura Dawass, Michelle D'Lima, Ioannis G. Economou, Marcelo Castier</i>	
(262be) Understanding Adsorption on the Anatase TiO₂ (101) Surface	335
<i>Samantha L. Miller, Ryan Trottier, Christopher L. Muhich, Alan W. Weimer, Charles B. Musgrave</i>	
(262d) Phase Transition of Acid Clathrate Hydrate Related to the Proton Conduction: Structural Analysis of Perchloric Acid Hydrate	336
<i>Kyuchul Shin, Minjun Cha, Wonhee Lee, Huen Lee</i>	
(262g) Mixing Behavior in Aupt Bimetallic Nanoparticles	337
<i>Srikanth Divi, Abhijit Chatterjee</i>	
(262y) Mathematical Modeling of Compressed CO₂ Expansion through a Coanda Nozzle	338
<i>Odell L. Glenn</i>	

(262s) Modification of Staverman-Guggenheim Combinatorial Entropy Expression	339
<i>Yifan Hao, M. R. Islam, Chau-Chyun Chen</i>	
(262h) First Principles Design of Active and Durable Catalysts Toward Oxygen Reduction and Evolution Reactions	340
<i>Byungchan Han, Jeemin Hwang</i>	
(262t) Spectroscopic Identification of Hydroxyl Group Positioning in Butanol Hydrates	341
<i>Minjun Cha, Yeobum Youn</i>	
(262ac) Solubility of Squalene and Squalene + Palmitic Acid in Supercritical Carbon Dioxide	342
<i>Teresa Rosales-García, Gloria Dávila-Ortiz, Alfredo Pimentel-Rodas, Luis A. Galicia-Luna, Darío I. Téllez-Medina</i>	
(262az) A SAFT-Based Equation of State for Electrolyte Solutions; Focused on Second Order Thermodynamic Properties	343
<i>Mohammad Reza Dehghani, Reza Shahriari</i>	
(262w) Eulerian Volume-Averaged Model and Numerical Simulations of Reactive Solid-Liquid Mixtures	357
<i>Costa Reis Martina, Heß Julian, Wang Yongqi</i>	
(262u) Volumetric and Viscometric Properties of a Binary Mixture of a Model Diesel Compound with a Biobased Additive	365
<i>Jesus Esteban, Tom Simons, Halina Murasiewicz, Serafim Bakalis, Peter J. Fryer</i>	
(262ba) Consideration of Ionic Liquid Dissociation in Thermodynamic Modeling of Ionic Liquids and Mixtures	368
<i>Nazir Hossain, Chau-Chyun Chen</i>	
(262z) Accurate and Efficient Thermodynamic Properties from Molecular Simulation By Combining Lammgs and Gcmc	369
<i>S. Mostafa Razavi, J Richard Elliott, Marcel Balçık, M. Göktug Ahunbay</i>	
(262au) Influence of Ionic Activity on the Osmotic Energy Generation in a Nanotube	370
<i>Li-Hsien Yeh, Chun-Chieh Yu, Chia-Hsi Lo</i>	
(262b) Spray Cooling of Hot Steel Plate Using Water Based TiO₂ Nanofluid	371
<i>Samarshi Chakraborty, Surjya K. Pal, Sudipto Chakraborty</i>	
(262ap) Empirical Fundamental Equations of State Correlations Based on Hybrid Datasets	372
<i>Andreas Köster, Jadran Vrabec, Monika Thol, Gabor Rutkai, Rolf Lustig, Roland Span</i>	
(262ay) Physico-Chemical Characterization of Fluorinated Ionic Liquids for Their Use As Blood Substitutes	373
<i>Margarida Ferreira, Fèlix Llovel, Ana B. Pereira, João M. M. Araújo, Manuel Piñeiro, Luís P. N. Rebelo, Lourdes F. Vega</i>	
(262aa) Effect of Branching on Phase Behavior of Chain Molecules from a New SAFT Based Model	374
<i>Yuchong Zhang, Walter G. Chapman</i>	
(262bg) Comparative Study Between Dissociation Conditions of H₂o + N₂+ Undecane and H₂o + CO₂+ Undecane Mixtures in Hydrate Formation	375
<i>Raúl A. Santos-Serena, Luis E Juárez-Vergara, Pedro Esquivel-Mora, Birzavit J. Escamilla-Martín, Luis A. Galicia-Luna</i>	
(262at) A Comprehensive Molecular Thermodynamic Model for Major Electrolytes in High Salinity Produced Water	376
<i>Sheik Tanveer, Chau-Chyun Chen</i>	
(262bb) Thermodynamic Modeling of Polyelectrolyte Solutions with Electrolyte Nrtl Model	377
<i>Yue Yu, Yuan Li, Chau-Chyun Chen</i>	
(262bf) Effect of Liquid Hydrocarbons (C₆, C₈, and C₁₀) in Experimental Dissociation Points of Hydrates Formed By H₂o + CO₂	378
<i>Birzavit J. Escamilla-Martín, Pedro Esquivel-Mora, Luis E Juárez-Vergara, Luis A. Galicia-Luna, Jose J. Castro-Arellano, Alfredo Pimentel-Rodas</i>	
(262ad) Real-Component Based Molecular Characterization of Petroleum Fluids	379
<i>Meng Wang, Chau-Chyun Chen</i>	
(262ae) Predicting Mosced Parameters for Nonelectrolyte Solids Using Electronic Structure Calculations	380
<i>Andrew Paluch, Jeremy Phifer</i>	
(262v) Modeling Phase Equilibria Using Numerical Algebraic Geometry	381
<i>Hythem Sidky, Dhagash Mehta, Alan Liddell, Jonathan Hauenstein, Jonathan K. Whitmer</i>	
(262ag) Volumetric, Acoustic and Viscometric Properties of Binary Mixtures of (n-Butylammonium based ionic liquid + Ethanol) at Different Temperatures	382
<i>Ricardo B. Torres, Samara S. Bittencourt, Heloisa E. Hoga, José V. H. D'Angelo</i>	
(262av) Apparent Molar Volumes of Saccharides in Aqueous Sodium Chloride Mixtures at Different Temperatures	383
<i>Ricardo B. Torres, Barbara M. Ortega, Ronaldo G. Santos</i>	
(262ab) Remote Read-out System for Thermal Barcode Based on Phase Change Materials	384
<i>Sichao Hou, Ming Su</i>	
(262ah) Modeling Sorption and Phase Equilibria Using CP2K Software Suite	385
<i>Neeraj Rai, Himanshu Goel, Charles Butler, Zachary Windom, Amber Jackson</i>	
(262e) Aluminum Nitride Hydrolysis Enabled By Hydroxyl-Mediated Surface Proton Hopping	386
<i>Christopher J. Bartel, Christopher L. Muhich, Alan W. Weimer, Charles B. Musgrave</i>	
(262ai) Molecular Modeling of Nonionic Block Copolymer Micelles	387
<i>Shun Xi, Walter G. Chapman</i>	
(262al) SAFT-Q: A Transferable Parameter Quartic Equation of State Version of the Statistical Associating Fluid Theory for Pure Fluids and Mixtures	388
<i>Arthur S. Gow, Jonathan Smolen, Matthew Seaman</i>	
(271a) Directing Colloidal Self-Assembly	389
<i>Eric M. Furst</i>	

(271b) Dynamic Factors Controlling Bacterial Adhesion to Polymeric and Nanopatterned Surfaces	390
<i>Maria M. Santore</i>	
(271c) Interfacial Phenomena Undergird Human Eye Health	391
<i>Clayton J. Radke</i>	
(283a) The Sedimentation of Particulate Suspensions Under Orthogonal Shear: Mechanisms at Finite Weissenberg Number	392
<i>Sreenath Krishnan, William L. Murch, Eric S.G. Shaqfeh, Gianluca Iaccarino</i>	
(283b) Stress-Gradient-Induced Polymer Migration in Microfluidics	393
<i>Ronald G. Larson, Hossein Rezvantalab</i>	
(283c) Simultaneous Flow and Drying in Open Microchannels	394
<i>Robert Lade, Christopher W. Macosko, Lorraine F. Francis</i>	
(283d) Plug Flow of Shear-Thinning Liquids in Microchannels	395
<i>Evangelia Roumpea, Maxime Chinaud, Lyes Kahouadji, Omar K. Matar, Panagiota Angeli</i>	
(283e) Single Polymer Dynamics in Large Amplitude Oscillatory Extension (LAOE)	398
<i>Yuecheng Zhou, Charles M. Schroeder</i>	
(283f) Shear Induced Demixing in Large Amplitude Oscillatory Shear Flows	399
<i>Joseph Peterson, Gary Leal</i>	
(283g) Molecularly Based Criteria for Shear Banding in Transient Flow of Entangled Polymeric Fluids	400
<i>Mouge Mohagheghi, Bamin Khomami</i>	
(283h) Effect of Chain Flexibility on Non-Linear Extensional Response of Linear Polymer Melts	401
<i>Luisa Palmese, Samantha Morelly, Hiroshi Watanabe, Nicolas J. Alvarez</i>	
(283i) Investigating Droplet-Breakup Dynamics for Characterizing Low-Viscosity Elasticity of Dilute Polymer Solutions	402
<i>Kristin A. Marshall, Travis W. Walker</i>	
(283j) Brownian Dynamics Simulations of Knotted Polymers Moving through Pores Under a Constant or Periodic External Field	403
<i>Vivek Narsimhan, C. Benjamin Renner, Patrick S. Doyle</i>	
(299a) Decellularization of Porcine Aorta Using Supercritical Carbon Dioxide	404
<i>Dominic M. Casali, Michael A Matthews</i>	
(299b) Supercritical Fluid Immobilization of Horseradish Peroxidase on Mesoporous Carbon for Environmental Remediation	418
<i>Akshay Jain, Sundaramurthy Jayaraman, Rajasekhar Balasubramanian, M.P. Srinivasan</i>	
(299c) Supercritical Fractionation of Oligomeric Pyrene Pitches for Kinetic Modeling	419
<i>William Lamie, Mark C. Thies</i>	
(299d) Highly Dispersed Metals on Metal Oxide Supports Via Reactive Deposition from Supercritical CO₂	420
<i>Christy Wheeler West, Jacob W. Deal, Kevin N. West</i>	
(299e) Quantum Dots Synthesis in Continuous Supercritical Micro-Millireactors	421
<i>Samuel Marre, Baptiste Giroire, Arkajyoti Chakrabarty, André Del Guerro, Thierry Cardinal, Alain Garcia, Uday Maitra, Cyril Aymonier</i>	
(299f) CO₂ As an Expanded Solvent for the Fractionation of Lignin	422
<i>Adam S. Klett, Mark C. Thies</i>	
(299g) Confinement Effect on Chemical Reaction Yield: The Nitric Oxide Dimer Reaction	423
<i>Erik E. Santiso, Deepti Srivastava, Keith E. Gubbins, C. Heath Turner</i>	
(308a) Self-Assembly of Gemini Surfactants	426
<i>Arun Yethiraj</i>	
(308b) Digital Alchemy for Molecular Design of Thermodynamically Stable Structures	427
<i>Sharon C. Glotzer</i>	
(308d) Understanding Gas Separations Using Polymeric Membranes	428
<i>Sanat Kumar</i>	
(308e) Simulations of Activity Coefficients and Solubilities for Aqueous Electrolytes: Why Are Our Models Off?	429
<i>Athanasios Z. Panagiotopoulos</i>	
(312a) Progress in Electro Acoustic Signal Analysis	430
<i>Dan Steingart</i>	
(312b) Model-Assisted Development of Microfabricated 3D Ni(OH)₂ Electrodes with Rapid Charging Capabilities	431
<i>Chenpeng Huang, Andac Armutlulu, Sue Ann Bidstrup Allen, Mark G. Allen</i>	
(312c) Electrode-Supported Macroporous Ceramic Membrane Separator for Lithium Ion Batteries	432
<i>Jerry Y.S. Lin, Gaurav Sharma, Yi Jin</i>	
(312d) First-Principles Density Functional Theory Modeling of Li Binding: Thermodynamics and Redox Properties of Quinone Derivatives for Lithium-Ion Batteries	433
<i>Ki Chul Kim, Tianyuan Liu, Seung Woo Lee, Seung Soon Jang</i>	
(312e) Conductivity Degradation of Polyvinylidene Fluoride Binder during Cycling: Measurements and Simulations for Lithium-Ion Batteries	434
<i>Anne M. Grillet, Thomas Humplik, Emily K. Stirrup, Dave A. Barringer, Scott A. Roberts, Chelsea Snyder, Madison R. Janvrin, Christopher A. Aplett</i>	
(312f) Polymeric Electrolyte Additives for Suppressing Zinc Dendrite Formation in Rechargeable Batteries with Zinc Anodes	435
<i>Stephen J. Banik, Karun K. Rao, Rohan Akolkar</i>	
(321a) Experimental Investigation of Relaminarization of Turbulence during Natural Circulation Cooling of a Very Hot Channel	436
<i>Apoorva Rudra, Narbeh Artoun, Sanjoy Banerjee, Masahiro Kawaji</i>	

(321b) Identification of High Energetic Flow Structures in the Separation Chamber of a Uniflow Cyclone with POD	437
<i>Martin Pillei, Tobias Kofler, Michael Krasner</i>	
(321c) Experimental Studies of Solid-Liquid Pipe Flow Using LDV	438
<i>Sarah E. Mena, Jennifer Sinclair Curtis</i>	
(321d) The Influence of Hydrodynamic Fluctuations on Turbulent Mixing and Chemical Reactions in a Rotating Channel Flow	439
<i>Charles A. Petty, André Bénard</i>	
(230aw) Computational Study of Turbulent Bubbly Flows	440
<i>Nithin S. Panicker, Alberto Passalacqua, Rodney O. Fox</i>	
(321f) An Explicit Variable-Density Projection Method for Low-Mach Reacting Flows on Structured Uniform Grids	441
<i>Tony Saad, James C. Sutherland</i>	
(321g) RANS Modeling of Cluster-Induced and Shear Turbulence in Particle-Laden Channel Flow	442
<i>Michael Baker, Rodney O. Fox, Olivier Desjardins, Jesse Capecelatro</i>	
(321h) Why Fibers Are Better Turbulent Drag Reducing Agents Than Polymers	443
<i>Arnout Boelens, Murugappan Muthukumar</i>	
(321i) Turbulent Drag Reduction, Flow Development, and Degradation of Polyox U310 Solutions in a Smooth Pipe	444
<i>Preetinder S. Virk, Nicholas Mannarino, Ogagaoghene Attah, Reginaldo Gomes, Raja Selvakumar</i>	
(321j) Effects of Drag-Reducing Polymers on the Transition and Growth of Turbulent Coherent Structures	445
<i>Xue Bai, Li Xi</i>	
(322a) Evaluating Electrocatalysts for Solar Fuels: Experimental Methods, Performance Metrics, and Catalyst Design Strategies	446
<i>Thomas F. Jaramillo</i>	
(322b) Electrochemical Pathways for Sustainable Manufacturing	447
<i>Gerardine G. Botte</i>	
(322c) Challenges and Current Development of Sulfur Cathode in Lithium-Sulfur Battery	448
<i>Juchen Guo</i>	
(322d) Mathematical Modeling of Lithium Ion Cells and Batteries	449
<i>John W. Weidner</i>	
(329a) Solid-in-Oil (S/O) Nanodispersions for Transdermal Cancer Immunotherapy	450
<i>Masahiro Goto, Noriho Kamiya, Rie Wakabayashi</i>	
(329b) Micromotors Generating Self-Propelled Regular Motion By Organic Fuels	451
<i>Daigo Yamamoto, Akihisa Shioi</i>	
(329c) Pattern Formation of Interfacially Confined Periodically Sequenced Polypeptides	452
<i>Raymond Tu</i>	
(329d) Self-Assembly Under Conditions Mimicking Deep-Sea Hydrothermal Vents	453
<i>Shigeru Deguchi</i>	
(329e) Preparation and Properties of Niosomes Prepared with Polyglycerol Fatty Acid Esters Using the Supercritical Carbon Dioxide Reverse Phase Evaporation Method	454
<i>Shunsuke Yamaguchi</i>	
(329f) Poloxamer-Based Formulations: Function through Molecular Self-Assembly and Directed Assembly	465
<i>Paschalis Alexandridis</i>	
(349a) Dynamics of Colloidal Droplets Under Rotating Magnetic Fields	466
<i>Sibani Lisa Biswal, Elaa Hilou, Di Du</i>	
(349b) Supramolecular Structural Forces Influence Drainage and Stratification Kinetics in Stratifying Foam Films	467
<i>Subinuer Yilixiati, Yiran Zhang, Rabees Rafiq, Ewelina Wojcik, Vivek Sharma</i>	
(349c) Understanding Beer Foam with Dynamic Fluid-Film Interferometry	468
<i>John M. Frostad, Gigi Lin, Luciano Santollani, Gerald G. Fuller</i>	
(349d) Elucidating the Role of Interfacial Rheology on Foam Wetness	469
<i>Gigi Lin, John M. Frostad, Gerald Fuller</i>	
(349e) 2D Modeling of Foam Flow Using an Interface Tracking Method for Analysing Its Stress-Strain Behavior	470
<i>Gouthami Sentharamaikkannan, Ian D. Gates</i>	
(349f) Monitor and Optimize Emulsion Droplet Size with Real-Time in Situ Measurements	484
<i>Guillermo Smart, Jack Shu, Terry P. Redman</i>	
(349g) Arrested Coalescence of Viscoelastic Droplets: Restructuring Dynamics	485
<i>Patrick T. Spicer, Prema Dahiya, Marco Caggioni</i>	
(349h) Stability of Drop and Bubble Collisions: Coalescence Maps	486
<i>Joe Berry, Raymond R. Dagastine</i>	
(349i) Nanoemulsion Formation: Controlling and Predicting Droplet Size	487
<i>Ankur Gupta, T. Alan Hatton, Patrick Doyle</i>	
(349j) Fluorocarbon Oil Reinforced Triple Emulsion Drops	488
<i>Hyomin Lee, Chang-Hyung Choi, Alireza Abbaspourrad, Chris Wesner, Marco Caggioni, Taotao Zhu, Saraf Nawar, David A. Weitz</i>	
(351a) Ionic Memristors and Nonlinear Ionic Circuits for Future Massively Multiplexed Liquid Biopsy Electrochemical Biosensor Arrays	489
<i>Gongchen Sun</i>	
(351b) High Energy Density Carbides and Nitrides Based Supercapacitors	490
<i>Abdoulaye Djire, Levi T. Thompson</i>	

(351c) Revealing the Dynamics of Electrochemical Interfaces in Lithium Batteries	491
<i>Peng Bai</i>	
(351d) Electrocatalytic Water Splitting at Ultrathin (Oxy)Hydroxide Films/Precious Metal Interfaces	492
<i>Zhenhua Zeng, Jeffrey P. Greeley</i>	
(351e) the Fabrication and Use of Bipolar Membrane in Hybrid PEM/AEM Fuel Cells	493
<i>John Ahlfield, Lisha Liu, Paul A. Kohl</i>	
(351f) High Efficiency, Low Cost Electrochemical Ammonia Production: Challenges and Opportunities	494
<i>Julie N. Renner, Lauren F. Greenlee, Andrew M. Herring, Luke Wiles, Shelby Foster, Katherine Ayers, Wayne Gullett</i>	
(351g) Improving Performance in Alkaline Membrane Fuel Cells through Enhanced Water Management	495
<i>Travis J. Omasta, Xiong Peng, Connor A. Lewis, John R. Varcoe, William E. Mustain</i>	
(354a) Surface Transport in Charged Porous Media	496
<i>Jorge F. Gabitto, Costas Tsouris</i>	
(354b) Self-Diffusion of Heptane inside Aggregates of Porous Alumina Crystallites By Pulsed Field Gradient NMR	497
<i>Evan M. Forman, Matthias A. Trujillo, Kirk J. Ziegler, Steven A. Bradley, Haiyan Wang, Sesh Prabhakar, Sergey Vasenkov</i>	
(354c) Mutual Diffusion of Binary Liquid Mixtures Containing Methanol, Ethanol, Acetone, Benzene, Cyclohexane, Toluene and Carbon Tetrachloride	498
<i>Jadran Vrabec, Gabriela Guevara-Carrion, Tatjana Janzen, Yonny M. Munoz-Munoz</i>	
(354d) Transport of Chemotactic Bacteria in Granular Media Containing a Distribution of Non-Aqueous Phase Liquid Contaminants	499
<i>Joanna S. T. Adadevoh, C. Andrew Ramsburg, Roseanne M. Ford</i>	
(354e) Size- and Morphology-Controlled Synthesis of Zinc Oxide Nanoparticles in a Two-Phase Millifluidic Reactor	500
<i>Brian G. Zukas, Nivedita R. Gupta</i>	

VOLUME 2

(354f) Analysis of High-Speed Rotating Flow in Polar (r-θ) Coordinate	501
<i>Sahadev Pradhan</i>	
(354g) Nanoscale Dynamics of Silica-Based Nanofluids for Asphaltene Removal and Wettability Alteration	550
<i>Tatiana Montoya, Nashaat N. Nassar, Gerardo Vitale</i>	
(354h) Impact of Non-Ideality Revealed in Numerical Simulations of Mixing of Hydrocarbons and Supercritical Water	551
<i>Ping He, Francisco A., Sánchez, Selva Pereda, Ahmed F. Ghoniem</i>	
(354i) Scaleout of Pipeline Drag Reduction By Wall-Injected Polyox U310 Solutions to Marine Boundary Layers	552
<i>Preetinder S. Virk, Nicholas Mannarino, Hannah Capponi, Moriel Levy, Veronica Wilson</i>	
(356a) SNG Technology Via Clathrate Hydrates for Large Scale Storage of Natural Gas	553
<i>Hari Prakash Veluswamy, Praveen Linga</i>	
(356b) A Water-Immiscible Heavy Guest Molecule for Fast Methane Hydrate Formation	554
<i>Hyery Kang, Yun-Ho Ahn, Dong-Yeun Koh, Seungjun Baek, Jae W. Lee, Huen Lee</i>	
(356c) Molecular Dynamics Studies of Structure II Hydrate Nucleation Using Advanced Sampling Techniques	555
<i>Ryan DeFeaver, Sapna Sarupria</i>	
(356d) Estimation of Direct Transition Mechanism for Molecular Diffusion in Type I Gas Hydrates Using Density Functional Theory	556
<i>Manuel M. Piñeiro, Ángel Vidal-Vidal, Martín Pérez-Rodríguez</i>	
(356e) Measurements and Modeling of Gas Hydrate Formation from High Salinity Systems	557
<i>Amadeu K. Sum, Yue Hu, Bo Ram Lee</i>	
(356f) Performance of Biodegradable Kinetic Inhibitors on Natural Gas Hydrate Formation	558
<i>Nagu Daraboina, Nicolas von Solms, Alexander Kolvait</i>	
(356g) Towards a Consistent Thermodynamic Theory for Gas-Hydrates	559
<i>Shivanand Vessam, Sudeep Punnathanam</i>	
(356h) Exploring the Free Energy Landscape of Gas Hydrate Nucleation By Forward Flux Sampling	560
<i>Yuanfei Bi, Tianshu Li</i>	
(358a) Nonlinear Velocity Profiles of Sheared Active Bacterial Suspensions	561
<i>Devranjan Samanta, Yi Peng, Xiang Cheng</i>	
(358b) Effects of Elasticity and Hydrodynamic Interactions on Locomotion in a Coarse-Grained Model of Monotrichous Bacteria	562
<i>Frank Nguyen, Michael Graham</i>	
(358c) Effects of Director Field on Dynamics of Bacteria in Liquid Crystals	563
<i>Shuang Zhou, Chenhui Peng, Taras Turiv, Yubing Guo, Qihuo Wei, Andrey Sokolov, Igor Aranson, Oleg Lavrentovich</i>	
(358d) Locomotion of C. Elegans: 2D and 3D Maneuvers in Undulatory Burrowing and Swimming	564
<i>Alejandro Bilbao, Amar Patel, Mizanur Rahman, Siva A. Vanapalli, Jerzy Blawdziewicz</i>	
(358e) Reverse Marangoni Surfing	565
<i>Vahid Vandadi, Saeed Jafari Kang, Hassan Masoud</i>	
(358f) A New Class of Colloidal Swimmers Based on Magnetically Actuated Assemblies of Metallo-Dielectric Microcubes	566
<i>Koohee Han, Bhuvnesh Bharti, C. Wyatt Shields, Gabriel P. Lopez, Paulo E. Arratia, Orlin D. Velev</i>	
(358g) Origins of Concentration Gradients for Diffusiophoresis	567
<i>Darrell Velegol, Rejarshi Guha, Manish Kumar, Astha Garg</i>	

(358h) Boundary Guidance Due to Hydrodynamics Interactions in the Navigation of Diffusiophoretically Self Propelled Colloid	568
<i>Ali Mozaffari, Joel Koplik, Charles Maldarelli</i>	
(358i) Collective Dynamics of Catalytically Self-Propelled Particles	569
<i>Nima Sharifi-Mood, Mir Karim, Ali Mozaffari, Ubaldo Córdoba-Figueroa</i>	
(358j) Diffusion of Ellipsoids in Active Fluids	570
<i>Yi Peng, Ou Yang, Xinliang Xu, Xiang Cheng</i>	
(372a) Emergence of Force Chains in Granular Materials	571
<i>Krishnaraj KP, Prabhu R Nott</i>	
(372b) Transition in a Dense Granular Flow Down an Inclined Plane	572
<i>Viswanathan Kumaran</i>	
(372c) DNS Simulation of Liquid Bridges Between Particles	573
<i>Nikoletta Patsaki, Johannes G. Khinast, Robert Scharler</i>	
(372d) Fingering Instability of a Suspension Film Spreading on a Spinning Disk	574
<i>Subhadarshinee Sahoo, Mayuresh Kulkarni, Pankaj Doshi, Ashish V. Orpe</i>	
(372e) A Rheological Signature of Frictional Interactions in Shear Thickening Suspensions	575
<i>John R. Royer, Daniel L. Blair, Steven D. Hudson</i>	
(372f) A New Conformation Tensor Based Macroscopic Model for Emulsions at Finite Reynolds Numbers	576
<i>Paul M. Mwasame, Norman J. Wagner, Antony N. Beris</i>	
(372g) Direct Tracking of Particles and Quantification of Margination in Blood Flow	577
<i>Erik Carboni, Brice Bognet, Grant M. Bouchillon, Andrea Kadilak, Leslie M. Shor, Michael Ward, Anson Ma</i>	
(372h) The Partial Drift Volume Induced By a Translating Spherical Bubble at Finite Reynolds Number	578
<i>Nicholas G. Chisholm, Aditya S. Khair</i>	
(372i) Motion of a Spherical Particle Near a Porous Boundary	579
<i>Phani Kanth Sanagavarapu, Prabhu R Nott</i>	
(372j) A Reciprocal Theorem for Convective Heat and Mass Transfer from a Particle in Stokes and Potential Flows	580
<i>Vahid Vandadi, Saeed Jafari Kang, Hassan Masoud</i>	
(381b) Interfacial Tensions of Industrial Fluids from a Molecular-Based Square Gradient Theory	581
<i>Erich A. Muller, Jose Matias Garrido, Manuel Piñeiro, Felipe J. Blas, Andres Mejía</i>	
(381c) Nonequilibrium Molecular Dynamics Simulations to Understand Thermal Rectification and the Role of Interfacial Resistances in Solid-Liquid and Liquid-Liquid Systems	582
<i>Sohaïl Murad, Ishwar K. Puri</i>	
(381d) Modeling Water+Hydrocarbons and Water+Oxygenates Phase Equilibrium with the GC-PPC-SAFT Equation of State	583
<i>Saifuddin Ahmed, Nicolas Ferrando, Jean-Pierre Simonin, Olivier Bernard, Olivier Baudouin, Jean Charles De Hemptinne</i>	
(381e) A Novel Approach of Modeling Orientational Hydrogen Bonding Interactions in Associating Fluids with the COSMO-SAC Activity Coefficient Model	584
<i>Wei-Lin Chen, Shiang-Tai Lin</i>	
(381f) Automatized Determination of Fundamental Eos Based on Molecular Simulations in the Cloud	585
<i>Colin W. Glass, Jadran Vrabec, Andreas Köster, Gabor Rutkai</i>	
(381g) Phase Behavior and Density Measurements of (CO₂ + Toluene) at Temperatures from (298 to 448) K and Pressures up to 65 Mpa	586
<i>Yolanda Sanchez-Vicente, Weparn J. Tay, Saif Al Ghafri, Emmanuel C Ejika, J. P. Martin Trusler</i>	
(391a) Direct Measurements of Cholesterol's Impact on Lipid Hydration and Packing in Phosphatidylcholine Lipid Bilayers	588
<i>Tonya L. Kuhl, Erik B. Watkins, James Kurniawan</i>	
(391b) Growth Behavior of Amyloid Fibrils on Membrane Interfaces of Lipid Membranes	589
<i>Toshinori Shimanouchi, Saki Fukuma, Miki Iwamura, Yukitaka Kimura, Hiroshi Umakoshi</i>	
(391c) Influence of Gold Nanoparticle Surface Chemistry and Diameter upon Alzheimer's Disease Amyloid-β Protein Aggregation	590
<i>Kelly A. Moore, Kayla Pate, Deborah Soto-Ortega, Sam Lohse, Nicholas van der Munnik, Mihyun Lim, Kaliah Jackson, Venetia Lyles, Lemeisha Jones, Nisha Glasgow, Vanessa Napumecho, Shanee Mobley, Mark J. Uline, Rahina Mahtab, Catherine Murphy, Melissa A. Moss</i>	
(391d) Chiral Recognition of Small Molecules at Boundary Edge in Heterogeneous Liposome Membranes	591
<i>Hiroshi Umakoshi, Takaaki Ishigami, Atsushi Tauchi, Keishi Suga, Yukihiko Okamoto, Yusuke Kishi</i>	
(391e) Enzyme-Reactive Self-Assembling Peptides for Biomacromolecular Functionalization	592
<i>Rie Wakabayashi, Masahiro Goto, Noriho Kamiya</i>	
(391f) Module Library Approach for Designing the High Performance Artificial Cellulosome on Nanomaterials	593
<i>Hikaru Nakazawa, Yuri Ishigaki, Eiko Kobayashi, Izumi Okada, Mitsuo Umetsu</i>	
(394a) Simulating Airflow in Human and Nonhuman Primate Airways with Applications to Aerosolized Drug Delivery Animal Testing	594
<i>Taylor S. Geisler, Sourav Padhy, Gianluca Iaccarino, Eric S. G. Shaqfeh</i>	
(394b) Aerosol Emission during Human Speech	595
<i>Sima Asadi, William D. Ristenpart</i>	
(394c) Investigating the Effect of Spatially Varying Wall Shear Stress on Lymphatic Endothelial Cell Alignment and Transcriptional Regulation	596
<i>Eleftheria Michalaki, Vinay Surya, Alexander R. Dunn, Gerald G. Fuller</i>	
(394d) Sub-Cellular Modeling of Platelet Transport and Adhesion in Microcirculation	597
<i>Bruce Caswell, Alireza Yazdani, George Em Karniadakis</i>	

(394e) Quantifying Protein Viscosity As a Method for Determining Biopharmaceutical Degradation	598
<i>Katherine N. Clayton, Dong Hoon Lee, Steven T. Wereley, Tamara L. Kinzer-Ursem</i>	
(394f) Ellipsoidal Microhydrodynamics: New Velocity Representations for Stokes Flow in Ellipsoidal Geometries	599
<i>Sangtae Kim</i>	
(394g) Modulation of Self-Assembly in Biological Motor Complexes	600
<i>Ravi Chawla, Katie Ford, Pushkar Lele</i>	
(394h) Collective Motion in Viscoelastic Fluids	601
<i>Gaojin Li, Arezoo Ardekani</i>	
(394i) Population Dynamics of Chemotactic Bacteria in Response to Multiple Chemical Stimuli	602
<i>Gabrielle Chen, Roseanne M. Ford</i>	
(394j) Transport of Filamentous Viruses As Reporters in Lateral Flow Assays	603
<i>Jinsu Kim, Katerina Kourentzi, Richard C. Willson, Jacinta C. Conrad</i>	
(405a) Polyoxometalate Application in Redox Flow Battery	604
<i>Jee-Jay J. Chen, Mark A. Barteau</i>	
(405c) Insights into the Solvation of Vanadium Ions in the Vanadium Redox Flow Battery Electrolyte Using Molecular Dynamics and Metadynamics	605
<i>Sukriti Gupta, Nyunt Wai, Tuti Mariana Lim, Samir H. Mushrif</i>	
(405e) Membraneless Electrolyzers for Water Electrolysis	606
<i>David Brown, Jonathan Davis, Glen D. O'Neil, Ji Qi, Daniel V. Esposito</i>	
(405f) Formation of Percolating Carbon Networks in Battery Processing and Their Effects on Electrode Performance	607
<i>Maureen H. Tang, Nicolas J. Alvarez, Samantha Morelly</i>	
(405g) Multi-Scale Model of Electrochemical Double Layer Capacitors: Predicting Performance Limitations	608
<i>Martin Kroupa, Gregory Offer, Juraj Kosek</i>	
(405h) Novel Columnar Liquid Crystals Functionalized Reduced Graphene Oxide Based Electrodes for Photocapacitor Applications	609
<i>Allen A. Rodriguez-Silva, Joe Reczek, John Staser</i>	
(406a) On the Origin of the Interfacial Phase Transition Causing the Stabilization of Water/Oil Emulsions By Asphaltenes: Accounting for Excluded Area Effects through a Lattice Gas Equation of State	610
<i>Shaghayegh Darjani, Joel Koplík, Vincent Pauchard</i>	
(406b) Aging Oil-Water Interfaces with Asphaltene Adsorption: Interface Rheology and Heterogeneity	611
<i>Chih-Cheng Chang, Arash Nowbahar, Vincent Mansard, Jodi Mecca, Adam Schmitt, Tom Kalantar, Tzu-Chi Kuo, Todd M. Squires</i>	
(406c) Novel Colloid Chemistry Approach to Resolving Emulsions for Fouling Control in Steam Crackers	612
<i>Erica Pensini, Leo Vleugels, Martijn Frissen, Kuldeep Wadhwa, Roy van Lier, Gerard Kwakkenbos</i>	
(406d) Mechanisms of Pickering Foam Stabilization during Bioreactor Operation	613
<i>Dane A. Grismer, Crista Gregg, Rachel Ferguson, Kevin Chang, Douglas Osborne, Orlin D. Velev</i>	
(406e) Formation of Multi-Nanoemulsions for Colloidal Synthesis	614
<i>Mengwen Zhang, Paula Malo de Molina, Samir Mitragotri, Matthew E. Helgeson</i>	
(406f) Novel Surfactants for Stabilizing CO₂-in-Oil Emulsions and Natural Gas-in-Oil Foams for Dry Hydraulic Fracturing	615
<i>Robert M. Enick, Jason J. Lee, Stephen Cummings, Eric J. Beckman, Robert J. Perry, Shehab Alzobaidi, Keith P. Johnston</i>	
(406g) Water-Oil Janus Emulsions: Microfluidic Synthesis and Morphology Design	616
<i>Xuehui Ge, Jianhong Xu, Jian Chen, Guangsheng Luo</i>	
(406h) Multiscale Design of Emulsions with Vegetable Oils of Promising Amazonian Species	617
<i>Juliana Erika Cristina Cardona Jaramillo, Marcela Piedad Carrillo Bautista, Oscar A. Alvarez, Andres Fernando González Barrios</i>	
(406i) Effect of Solid Particles on Interfacial Rheology and Transient Stability of Water-in-Oil Emulsions	619
<i>Ashwin Yegya Raman, Jarred Kelsey, Nicholas Briggs, Jeff White, Steven Crossley, Clint P. Aichele</i>	
(406j) Microstructural Origins of Gel-like Rheology in Solid-Stabilized Emulsions	620
<i>Max Kaganyuk, Ali Mohraz</i>	
(411a) Experimental Verification of Structural Transition and Dissociation Enthalpy Change during CH₄ - CO₂ Replacement That Occurs in Various Gas Hydrate Structures	621
<i>Yohan Lee, Yongwon Seo</i>	
(411b) Investigation of Hydrate Shell Formation on Water-Containing Particles	622
<i>Yutaek Seo, Colin Wood</i>	
(411c) Natural Gas Hydrates in Marine Locations: Effect of Stimulation Temperature on Gas and Water Production	629
<i>Zheng Rong Chong, Praveen Linga</i>	
(411d) Enhanced Kinetic Inhibition of Gas Hydrate Formation Using the Mixture of Poly(N-vinylcaprolactam) and Ionic Liquids	630
<i>Seong-Pil Kang, Ki-Sub Kim, Wonhee Lee</i>	
(411e) Mechanism for the Replacement of CH₄ in Methane Hydrates with CO₂ in the Solid Phase	631
<i>Hsuan Lo, Shiang-Tai Lin</i>	
(411f) Phase Equilibrium Measurements for Semi-Clathrate Hydrates of Water+Decane+Carbon Dioxide+Tbab Systems	632
<i>Pedro Esquivel-Mora, Luis E Juárez-Vergara, Birzavit J. Escamilla-Martín, Luis A. Galicia-Luna, Alfredo Pimentel-Rodas</i>	
(411g) Thermodynamic Study on Proline Inhibition of Methane Hydrate Formation	633
<i>Bo Chen, Xuqiang Guo</i>	

(411h) Fundamental Investigation into the Thermal Decomposition of Methane Hydrates and the Impact of CO₂ Sequestration	641
<i>Swanand Tupsakhare, Marco J. Castaldi</i>	
(416a) Charge Transport Model to Predict Intrinsic Reliability for Dielectric Materials in Integrated Circuits	642
<i>Sean P. Ogden, Juan Borja, Joel L. Plawsky, Toh-Ming Lu, Kong Boon Yeap</i>	
(416b) Fluid Dynamics Modeling for a Novel High Throughput Pipette Viscometer	645
<i>Laura J. Dietsche, Suraj Deshmukh, Matthew Bishop, Daniel Dermody, Tzu-Chi Kuo, Melissa MushRush</i>	
(416d) The Generalized Onsager Model and Dsmc Simulations of High-Speed Rotating Flow with Swirling Feed	646
<i>Sahadev Pradhan</i>	
(416e) A Numerical Model of Chemically Reacting Flow Through Additively Manufactured 3D Structures	709
<i>Maher Salloum, David B. Robinson</i>	
(416f) Computational Fluid Dynamics Modeling of Momentum and Heat Transfer in Nanofluids	710
<i>Masoudeh Ahmadi, Gerold A. Willing</i>	
(416h) The Soret Effect in Polyaromatic Hydrocarbons: Thermal Separation From Alkanes	711
<i>Sara M. Hashmi, Sid Senthilnathan, Abbas Firoozabadi</i>	
(420f) Next-Generation High-Efficiency Hybrid Solar to Hydrogen Conversion with Integrated Storage	712
<i>Christos N. Markides</i>	
(420g) Understanding and Eliminating Interaction of Cells in an Electrochemical Stack	713
<i>Ashwini Kumar Sharma, Erik Birgersson</i>	
(420a) Advancement of Hydrogen Storage Technologies	714
<i>Patrick Adametz, Karsten Müller</i>	
(420c) Thermodynamic and Economic Evaluation of Hydrogen Transport Technologies	715
<i>Patrick Adametz, Karsten Müller, Wolfgang Arlt</i>	
(420d) State-of-the-Art of the Liquid Organic Hydrogen Carrier (LOHC) Technology	716
<i>Wolfgang Arlt, Daniel Teichmann, Peter Wasserscheid</i>	
(420e) On Using CO₂ and Renewable Energy for Autonomous Cities	717
<i>Raluca Suciu, Luc Girardin, Samuel Hanchoz, Daniel Favrat, François Maréchal</i>	
(423a) Dielectrophoretic Assembly of Nanowires in Shear Flows	718
<i>Roger T. Bonnecaze, Talha A. Arshad</i>	
(423b) Microstructure of Rigid Rod Suspensions	719
<i>Charles A. Petty, André Bénard, Yo Chan Kim</i>	
(423c) Dynamics of Rigidly Foldable Sheets in Shear Flow	720
<i>Sarit Dutta, Michael Graham</i>	
(423d) In Search of Physical Meaning: Defining Transient Parameters for Nonlinear Viscoelasticity	721
<i>Simon Rogers</i>	
(423e) Numerical Study of the Shear Rheology of Suspensions in Viscoelastic Fluids at Low Volume Fraction	722
<i>Mengfei Yang, Sreenath Krishnan, Eric S. G. Shaqfeh</i>	
(423f) Numerical Analysis of DNA-Functionalized Colloidal Particle Deposition in a Channel Flow	723
<i>Young Ki Lee, Scott L Diamond, John C. Crocker, Talid Sinno, Christopher Porter</i>	
(423g) Stress-Driven Colloidal Crystal Reassembly through Darcy Flow during Vibration Assisted Convective Deposition	724
<i>Midhun Joy, Mark A. Snyder, James F. Gilchrist</i>	
(423h) The Role of Hydrodynamic Interactions in Colloidal Dispersions with Short-Ranged Attraction and Long-Ranged Repulsion	725
<i>Zsigmond Varga, James Swan</i>	
(423i) Time Resolved Study of Shear-Induced Microstructures of Concentrated Silica Dispersions By SAXS	726
<i>Jonghun Lee, Xiao-Min Lin, Alec Sandy, Suresh Narayanan</i>	
(423j) The Motion of Magnetic Oblate Spheroids Suspended in Newtonian Fluids Under Magnetic Fields	727
<i>Mingyang Tan, Travis W. Walker</i>	
(441a) Modeling of CO₂ Solubility in Electrolyte Solutions and Brines Using Statistical Associating Fluid Theory	728
<i>Hao Jiang, Athanassios Z. Panagiotopoulos, Ioannis G. Economou</i>	
(441b) Molecular Simulations of Ammonium-Based Protic Ionic Liquids	729
<i>Amir Taghavi Nasrabadi, Lev Gelb</i>	
(441c) Molecular Dynamics Simulations of Mixtures of Refrigerants and Deep Eutectic Solvents	730
<i>Rubaiyet Abedin, John C. Flake, Francisco R. Hung</i>	
(441d) Phase Equilibria in Ionic Liquid- Alkanol Solutions	731
<i>Liudmila Mokrushina, Peter Hausmann, Wolfgang Arlt</i>	
(441e) Modeling Gas Separation of Greenhouse Gases with Ionic Liquids and Deep Eutectic Solvents	732
<i>Fèlix Llovell, Joel Orduña, Lourdes F. Vega</i>	
(441f) Modeling Aqueous Alkanolamine + Carbon Dioxide Mixtures Using the SAFT-VR Mie and SAFT-γ Mie Equations of State	742
<i>Edward Graham, Hajar Khalit, Amparo Galindo, George Jackson, Claire S. Adjiman</i>	
(441g) Comprehensive Thermodynamic Modeling of Complex Mixed-Solvent Electrolyte Systems: An Investigation on Water-Hydrogen Chloride-Methanol Ternary System	743
<i>Sina Hassanjani Saravi, Chau-Chyun Chen</i>	
(441h) Thermophysical Properties of Ionic Liquids - Ithermo Archival Database: 3. Engineering Applications	744
<i>Andrei Kazakov, Joseph W. Magee, Robert Chirico, Vladimir Diky, Chris Muzny, Kenneth Kroenlein</i>	
(458a) Clickable Janus Particles	745
<i>Laura Bradley, Kathleen Stebe, Daeyeon Lee</i>	

(458b) Synthesis of Optically Complex, Porous and Anisometric Polymeric Microparticles By Templating from Liquid Crystalline Droplets	746
<i>Nicholas L. Abbott, Xiaoguang Wang, Emre Bukusoglu</i>	
(458c) Soft Polyhedral Colloids	747
<i>Patrick T. Spicer, Haiqiao Wang, Per Zetterlund, Cyrille Boyer</i>	
(458d) Measuring the Interactions of Anisotropic Particles Using Total Internal Reflection Microscopy	748
<i>Christopher Bolton, Raymond R. Dagastine</i>	
(458e) Colloidal Molecules Assembled from Binary Spheres Under an AC Electric Field	749
<i>Kelley Heatley, Fuduo Ma, Ning Wu</i>	
(458f) 3D Position and Orientation Control of Single and Assembled Colloidal Superellipsoids in Electric Fields	750
<i>Michael A. Bevan, Bradley Rupp, Isaac Torres-Diaz</i>	
(458g) Assembly and Actuation in Concentrated Suspensions of Janus Ellipsoids	751
<i>Sepideh Razavi, Yanliang Liu, Michael J. Solomon</i>	
(458h) Clustering and Dynamics in Anisotropic Colloidal Glasses and Gels Containing Weakly Adsorbing Polymers	752
<i>Bingqian Zheng, Suhasini Kishore, Sunita Srivastava, Surita Bhatia</i>	
(458i) Dynamics of a Magnetic Colloidal Chain in a Confined Spherical Cavity	753
<i>Ziyi Zhu, Sibani Lisa Biswal</i>	
(458j) The Surface Pressure and Microstructure of Carbon Nanotubes at an Air-Water Interface	754
<i>Sahil R. Vora, Brice Bognet, Huseini S. Patanwala, Francisco Chinesta, Anson Ma</i>	
(464a) Electrophoresis in Dense Colloidal Suspensions: Role of Particle Concentration and Debye Layer Thickness	755
<i>Sepideh Razavi, Michael J. Solomon</i>	
(464b) New Methods for Rapid Calculation of Thermal Forces in Coarse Grained Simulations of Complex Fluids	756
<i>James Swan, Andrew Fiore</i>	
(464c) Effect of Ion Sterics on Diffusiophoresis in Concentrated Electrolytes	757
<i>Robert Stout, Aditya S. Khair</i>	
(464d) Gravitational Collapse of Reversible Colloidal Gels Via Large-Scale Dynamic Simulation	758
<i>Roseanna N. Zia, Poornima Padmanabhan</i>	
(464e) Dynamics and Rotational Regimes of Semi-Flexible Colloidal Chains	759
<i>Steve Kuei, Sibani Lisa Biswal</i>	
(464f) Catalytic Motors Near Curved Surfaces: Guided and Trapped Motion	760
<i>Ubaldo Córdova-Figueroa, Pablo G. Diaz Hyland, Nima Sharifi-Mood</i>	
(464g) The Effect of Suspended Colloidal Particles on the Stability of High-Density Particles Against Sedimentation	761
<i>Yung-Jih Yang, Elias I Franses, David S. Corti</i>	
(464h) Deformation of Fractal Clusters Under Mixed Shear Flows	762
<i>Marco Lattuada</i>	
(464i) The Rheology and Microstructure of an Aging Thermoreversible Colloidal Gel	763
<i>Melissa B. Gordon, Christopher J. Kloxin, Norman Wagner</i>	
(464j) Influence of Attractive Forces and Particle Size Distribution on Shear Thickening of Suspensions	764
<i>Sidhant Pednekar, Jeffrey Morris, Jaehun Chun</i>	
(475g) Material Design for High-Performance Electrocatalyst for the Reduction of Oxygen	765
<i>Hong Yang</i>	
(475h) Highly Stable and Active Carbon Supports for Pt Cathode Catalysts in Polymer Electrolyte Fuel Cells	766
<i>Gang Wu</i>	
(475c) Metal Oxides As Protective Layers on Carbons and Electrocatalyst Supports	767
<i>Yangchuan Xing</i>	
(475d) Novel Metal Oxide As Highly Acid Stable Electrocatalyst for Oxygen Evolution Reaction in Water Splitting	768
<i>Pei-Chieh Shih, Jaemin Kim, Hong Yang</i>	
(475e) Transition-Metal Doped Carbon Electrocatalysts for Oxygen Reduction	769
<i>Gang Wu</i>	
(475f) Probing the Synergy in Nickel-Molybdenum Hydrogen Evolution Catalysts	770
<i>Jay Schwalbe, Ian McKay, Joshua Willis, Emmett Goodman, Matteo Cargnello, Arun Majumdar</i>	
(481a) High Pressure Fluid Phase Behavior of Two Essential Oil Systems with CO₂	771
<i>Cor J. Peters</i>	
(481b) A New Pure-Component Equation of State Designed for Accurate Reproduction of Phase-Equilibrium, Caloric and Volumetric Properties with Emphasis on Supercritical-Property Prediction	772
<i>Jean-Noël Jaubert, Romain Privat, Yohann Le Guennec, Silvia Lasala</i>	
(481c) New Procedure for Enhancing SAFT Molecular Parameters Transferability: The Role of Derivative Properties	779
<i>Lourdes F. Vega, Fèlix Llovel, Mariana B. Oliveira, Joao A. P. Coutinho</i>	
(481d) Description and Prediction of Polymer Phase Behavior with Lattice Cluster Theory: An Homage to One of the Great Experimentalists	780
<i>Sabine Enders, Michael Fischlschweiger, Kai Langenbach, Christoph Walowski, Tim Zeiner</i>	
(481e) Phase Equilibria of Mixtures Containing Alternative Solvents for Green Chemistry	781
<i>Hiroyuki Matsuda, Yoshihiro Inoue, Yuki Nakazato, Kiyofumi Kurihara, Katsumi Tochigi</i>	
(481f) The Symbiosis of Measuring and Predicting Property Data	782
<i>Sebastian Kaminski, André Bardow, Kai Leonhard</i>	

(481g) Bubble Pressure, Enthalpy of Mixing and Excess Volume Measurement and Prediction for n-Alkane + Aromatic and Naphthenic Hydrocarbon Binary Mixtures	783
<i>Sourabh Ahitan, Qingchen Liu, Amin Pourmohammadbagher, John M. Shaw</i>	
(483b) Surface Tension-Driven Flows for Convective Deposition	784
<i>James F. Gilchrist, Kedar Joshi</i>	
(483c) Elastic Deformation of Soft Supported Films of Finite Thickness during the Drainage of a Viscous Fluid	785
<i>Joelle Frechette, Yumo Wang</i>	
(483d) Dynamic Wetting Failure in Surfactant Solutions	786
<i>Chen-Yu Liu, Marcio S. Carvalho, Satish Kumar</i>	
(483e) Rinsing Flow Instabilities on Rotating Silicon Wafers – Effect of Viscosity and Wettability	787
<i>Aadithya Kannan, Vineeth Chandran Suja, Andy Ylitalo, John M. Frostad, Gerald G. Fuller</i>	
(483f) Flow in the Thin Film Created By Normal and Oblique Turbulent Liquid Jets Impinging on a Vertical Wall: Application to Cleaning	788
<i>Rajesh Kumar Bhagat, D. Ian Wilson</i>	
(483g) Nanoscopic Thickness Transitions and Domain Growth Dynamics in Stratifying, Micellar Foam Films	789
<i>Yiran Zhang, Subinuer Yilixiati, Vivek Sharma</i>	
(483h) Ultra-Fast Microfluidic Mixing By Soft-Wall Turbulence	790
<i>Viswanathan Kumaran</i>	
(483i) Bubble Shape Hysteresis: The Effect of Compressibility	791
<i>Vineeth Chandran Suja, John M. Frostad, Gerald Fuller</i>	
(483j) Three-Dimensional Numerical Simulation of Spherical Drops in Liquid-Liquid and in Liquid-Gas Systems with Emphasis on the Influence of the State of Internal Motion on Drag	792
<i>Christopher A. Edelmann, Patrick C. Le Clercq, Berthold Noll</i>	
(519a) Shear-Induced Alignment of Janus Particle Lamellar Structures	800
<i>Ronal A. DeLaCruz-Araujo, Daniel J. Beltran-Villegas, Ronald G. Larson, Ubaldo M. Córdoba-Figueroa</i>	
(519b) Hydrodynamic Simulations of Constant Stress and Pressure Rheology of Dense Colloidal Suspensions	801
<i>Mu Wang, John F. Brady</i>	
(519c) Hydrodynamically Interacting Colloids inside a Spherical Cavity As a Model for Intracellular Transport: Hydrodynamic Entrainment and Active Motion	802
<i>Christian Aponte-Rivera, Roseanna N. Zia</i>	
(519d) Modeling the Transient Shear Flow of a Carbon Black Soft Colloidal System Using a Scalar Structural Parameter Thixotropic Model	803
<i>Norman Wagner, Matthew Armstrong, Antony N. Beris</i>	
(519e) Microrheological Characterization of the Dynamic Transition of Hydrogenated Castor Oil Colloidal Gels Due to Osmotic Pressure Gradients	804
<i>Matthew Wehrman, Seth Lindberg, Kelly Schultz</i>	
(519f) Microrheology of Monoclonal and Bispecific Antibodies	805
<i>Eric M. Furst, Lilian Lam Josephson, Danielle L. Leiske, William J. Galush</i>	
(519g) Microstructure and Yielding of Microfiber Gels	806
<i>Patrick T. Spicer, Jie Song, Todd M. Squires, Marco Caggioni</i>	
(519h) Transient Yield in Reversible Colloidal Gels: A Micro-Mechanical Perspective	807
<i>Lilian C. Johnson, Benjamin J. Landrum, Roseanna N. Zia</i>	
(519i) Role of Particle Roughness in Shear Thickening Colloidal Suspensions	808
<i>Lilian C. Hsiao, Safa Jamali, Daniel J. Beltran-Villegas, Ronald G. Larson, Michael J. Solomon</i>	
(519j) Axial Dispersion of Brownian Colloids in Microfluidic Channels	809
<i>Michael P. Howard, Aishwarya Gautam, Athanassios Z. Panagiotopoulos, Arash Nikoubashman</i>	
(525a) Bubble Meets Droplet: Particle-Assisted Reconfiguration of Wetting and Dewetting	810
<i>Carson Meredith, Sven H. Behrens, Yi Zhang</i>	
(525b) In Situ Mechanical Testing of Bijel Fibers	811
<i>Martin F. Haase, Nima Sharifi Mood, Daeyeon Lee, Kathleen J. Stebe</i>	
(525c) Structural Effects on Adsorption Kinetics of Phosphatidylcholine Vesicles at an Air-Water Interface	812
<i>Jennifer Staton, Stephanie R. Dungan</i>	
(525d) Tau Misfolding and Assembly at Lipid Membrane Interfaces	813
<i>Emmalee M. Jones, Ann Junghans, Jacek Biernat, Eckhard Mandelkow, Jaroslaw Majewski, Eva Y. Chi</i>	
(525e) MD Simulation Study of Direct Permeation of Nanoparticle Across Cell Membrane Under External Electric Field	814
<i>Hideya Nakamura, Kenta Shimizu, Kyohei Sezawa, Satoru Watano</i>	
(525f) Curvature Capillary Repulsion	815
<i>Iris B. Liu, Lu Yao, Nima Sharifi-Mood, Kathleen J. Stebe</i>	
(525g) On Precipitation During the Coalescence of Reactive Droplets	816
<i>Marie Jehannin, Stefan Karpitschka, Helmuth Moehwald, Hans Riegler, Thomas Zemb, Sophie Charton</i>	
(525h) Kinetic Influence of Polyvinylpyrrolidone in the Shape-Control Mechanism of Ag Nanocrystal Synthesis	817
<i>Tomam Balankura, Kristen Fichthorn</i>	
(525i) Microfluidic Mass Transfer Process Intensification for Micron Droplet Generation with Dilute Surfactant Concentration	818
<i>Yankai Li, Kai Wang, Jianhong Xu, Guangsheng Luo</i>	
(525j) Novel Methodology to Measure the Contact Angle Between a Liquid and a Powder Bed By Using Droplet Penetration Technique	819
<i>Gerardo Callegari, Zhanjie Liu, German Drazer</i>	

(530a) Improvements in the Anion Exchange Membrane Transport of Carbonate and Bicarbonate for Low-Temperature CO₂ Capture and Energy Conversion	820
<i>Travis J. Omasta, Xiong Peng, John R. Varcoe, William E. Mustain</i>	
(530b) A New Approach to Measure Internal Resistance of Microbial Fuel Cells	821
<i>Alim Dewan, Laura Paez, Jonathan P. Raftery, M. Nazmul Karim</i>	
(530c) Ab Initio Insights into the Electrochemical Double Layer	822
<i>Leanne D. Chen, Michal Bajdich, Alan C. Luntz, Karen Chan, Jens K. Norskov</i>	
(530d) In-Situ Formation of Polyethylene Glycol (PEG) Hydrogel Membrane in Microfluidic Fuel Cells	823
<i>Kun-Lin Yang, Wing Fat Ho</i>	
(530e) Identifying Layered Double Hydroxides for Electrochemical Anion Intercalation	824
<i>Matthias J. Young, Nicholas M. Bedford, Tatyana Kiryutina, Taylor J. Woehl</i>	
(530f) Ion Selectivity in the Nanoporous Electrodes of Electrical Double Layer Capacitors with Room-Temperature Ionic Liquids	825
<i>Justin Neal, David J. Wesolowski, Jianzhong Wu</i>	
(530g) Charge Storage Mechanisms of High-Surface-Area Carbides and Nitrides	826
<i>Abdoulaye Djire, Priyanka Pande, Aniruddha Deb, Jason Siegel, Lilin He, Alice E. S. Sleightholme, Saemin Choi, James Penner-Hahn, Levi T. Thompson, Jean Yves Ishimwe</i>	
(530h) Pseudocapacitive Hydrogen and Hydroxide Storage in High-Surface-Area Carbides and Nitrides	827
<i>Abdoulaye Djire, Jason Siegel, Lilin He, Aniruddha Deb, Saemin Choi, James Penner-Hahn, Levi T. Thompson</i>	
(535a) Pendant Drops and Liquid Jets in Miscible Environments	828
<i>Dan Walls, Gerald Fuller, Simon Haward, Amy Shen</i>	
(535b) Reversible and Irreversible Deformation of Particle-Coated Droplets	829
<i>Jeremy Marston, Momene Moradiafrapoli</i>	
(535d) Controlling Interfacial Composition, Coverage and Mechanics for Stable Capsule Formation	830
<i>Charles Sharkey, Stephanie Kirby, Anthony P. Kotula, Lynn Walker, Shelley L. Anna</i>	
(535e) Coalescence Inhibition Through Asphaltene Adsorption	831
<i>Simone Bochner de Araujo, Maria Merola, Dimitris Vlassopoulos, Gerald G. Fuller</i>	
(535f) Continuous Droplet-Based Viscometer	832
<i>Yunzi Li, Kevin R. Ward, Mark A. Burns</i>	
(535g) On the Effect of Surfactants on Drop Coalescence with Liquid/Liquid Interfaces	833
<i>Teng Dong, Weheliye Hashi Weheliye, Victor Voulgaropoulos, Panagiota Angeli</i>	
(535h) The Effect of a Yield Stress on the Drainage of the Thin Film Between Two Colliding Newtonian Drops	836
<i>Sachin Goel, Arun Ramachandran</i>	
(535i) Theory for Thin-Film Evolution Between a Sphere and a Planar Free Surface	837
<i>Joseph M. Barakat, John M. Frostad, Mariana Rodriguez-Hakim, Gerald G. Fuller, Eric S. G. Shaqfeh</i>	
(535j) Numerical Calculations of the Rheology and Droplet Behavior of Emulsions in the Presence of Surfactants	838
<i>Richard Martin, Alexander Zinchenko, Robert H. Davis</i>	
(536a) Multianalyte Electrochemical Sensors on a Monolith Electrode By Optically Probing the Electrical Double Layer	839
<i>Santanu Roy, Abhijeet Prasad, Rahul Tevatia, Seung-Woo Lee, Ravi Saraf</i>	
(536b) Role of Defects in Enhancing the Electrochemical Properties of Transition Metal Oxide	840
<i>Vidhya Chakrapani</i>	
(536c) The Degradation of Additives during the Electrodeposition of Copper for Metamaterial Fabrication	841
<i>Shendu Yang, Zach Thacker, Evan Allison, Patrick J. Pinhero, Nicholas Cole</i>	
(536d) Field Effect Control of Electrochemical Reaction Kinetics at Back-Gated, Ultrathin Semiconductor Electrodes	842
<i>Chang-Hyun Kim, C. Daniel Frisbie</i>	
(536e) Electrochemical Synthesis of Organic Nanorods on Gold Nanoparticles Seeds	843
<i>Xuecheng Yu, Pedram Jahanian, Guangzhao Mao</i>	
(536f) Interfacial Structure and Capacitance of Li-Doped Ionic Liquid Electrolytes from Molecular Simulations	844
<i>Justin B. Haskins, John W. Lawson</i>	
(536g) Reactivity of an Alucone Thin Film Coating on a Lithiated Si Anode of Li-Ion Batteries	845
<i>Jose L. Gomez-Ballesteros, Perla B. Balbuena</i>	
(536h) Microstructure of Room-Temperature Ionic Liquids at Charged Surfaces Revealed By Integrated Modeling and Experimental Approaches	846
<i>Guang Feng, Jennifer Black, Nina Balke, Peter T. Cummings</i>	
(536i) Mathematical Models for the Impedance Response of Subcutaneous Glucose Sensors	847
<i>Morgan Harding, Mark E. Orazem</i>	
(536j) The Effect of Alkali and Quaternary Ammonium Cations on the Electrochemical Interface Studied By in-Situ Infrared Spectroscopy	848
<i>Marco Dumwell, Yushan Yan, Bingjun Xu</i>	
(588a) Using Polymers As Solvents for Active Pharmaceutical Ingredients	849
<i>Gabriele Sadowski</i>	
(588b) Molecular Thermodynamics for Branched Networks and Bicontinuous Phases in Water+Oil+Surfactant Microemulsions	850
<i>Anna Shishkina, Alexey Victorov</i>	
(588c) Properties of Amphiphilic Dendritic Polymers in Solutions, at the Air/Water Interface and on Solid Substrates	851
<i>Jacek Gregorowicz, Anna Brzozowska, Jan Paczesny, Marek Luszczczyk, Kostyantyn Nikiforov, Volodymyr Sashuk, Pawel Parzuchowski, Gabriel Rokicki</i>	

(588d) Comparative Study Between Simultaneous Determinations of Dynamic Viscosity and Density of Ethanol Using a Straight and Coil Capillary Viscometers at Temperatures Between (313-353) K and Pressures up to 30 Mpa	852
<i>Alfredo Pimentel-Rodas, Luis A. Galicia-Luna, Jose J. Castro-Arellano</i>	
(588e) Fluid Phase Equilibria at High Pressures	853
<i>Richard J. Sadus</i>	
(588f) Spray Drying of Pharmaceuticals- Solubility and Diffusivity in the Acetone-Hpmcas System	854
<i>Derek R. Sturm, Ronald P. Danner, Justin D. Moser</i>	
(588g) Computing Equation of State Parameters of Gases from Monte Carlo Simulations	855
<i>Mahinder Ramdin, Tim Becker, Seyed Hossein Jamali, Thijs J. H. Vlugt</i>	
(590a) Low-Salinity Waterflooding of Carbonate Reservoirs: Bulk and Surface Aqueous Speciation of Calcite	856
<i>Maxim P. Yutkin, John Y. Lee, Himanshu Mishra, Tadeusz W. Patzek, Clayton J. Radke</i>	
(590b) Utilizing Solubilized Solvent for Surfactant Based Enhanced Oil Recovery	857
<i>Khoa Bui, I. Yucek Akkutlu, Andrei Zelenev, James Silas</i>	
(590c) Wettability at the Pore Level: A New Set of Spectacles for Higher Spatial Resolution	858
<i>Omar Bashir Wani, Syed Mohamid Raza Quadri, Chia-Yun Lai, Mariam Ali Almahri, Matteo Chiesa, Saeed Alhassan</i>	
(590d) Diffusiophoresis of Colloidal Particles in the Limit of Very High Ionic Strength	859
<i>Dennis C. Prieve, Stephanie M. Malone, Mazen Kanj</i>	
(590e) Surfactant-Oil Interactions on Surfaces	860
<i>Yi Zhang, Tess Placek, Paschalis Alexandridis, Marina Tsiannou</i>	
(590f) Eco-Friendly Sacrificial Amphiphiles As Chemical Herders for Oil Spill Remediation	861
<i>Hao Zhou, George John, Charles Maldarelli</i>	
(590g) Interfacial Properties of Skins at the Crude Oil – Water Interface: Effect of Salt Concentration, Temperature and Surface Active Chemicals	862
<i>Tomás-Eduardo Chávez-Miyauchi, Abbas Firoozabadi</i>	
(590h) Studies of Low Salinity Waterflooding Via Glass Micromodels with Triangular Pore-Throat Architectures	863
<i>Yafei Liu, Erica Block, Jeff Squier, Vladimir Alvarado, John Oakey</i>	
(590i) Visualization Foam Destruction in Porous Media Micromodels	864
<i>Yongchao Zeng, Siyang Xiao, Sibani Lisa Biswal</i>	
(590j) Modeling Foam Flooding in Varied Dimensions: The Transport of CO2 Soluble Surfactant for Foam Mobility Control	865
<i>Yongchao Zeng, Rouhi Farajzadeh, Aarthi Muthuswamy, Maura Puerto, George J. Hirasaki, Sibani L. Biswal</i>	
(591a) Molecular Dynamics Simulation Study on Dicationic Ionic Liquid Electrolytes in Supercapacitors	866
<i>Song Li, Guang Feng, Peter T. Cummings</i>	
(591b) Impurities in a Room-Temperature Ionic Liquid for Supercapacitors: Friend or Foe?	867
<i>Kun Liu, Jianzhong Wu</i>	
(591c) Influence of Molecular Simulation Model Accuracy on the Interfacial Properties of an Ionic Liquid	868
<i>Justin B. Haskins, John W. Lawson</i>	
(591d) Elucidating the Cytotoxic Mechanism of Imidazolium-Based Ionic Liquids Via Molecular Simulations	869
<i>Brian Yoo, Yingxi Elaine Zhu, Edward J. Maginn</i>	
(591e) Time-Dependent Density Functional Theory for Ion Transport in Room-Temperature Ionic Liquids	870
<i>Cheng Lian, Honglai Liu, Jianzhong Wu</i>	
(591f) Measuring Ion Dynamics at Ionic Liquid-Fluid Interfaces	871
<i>Alexandra V. Bayles, Matthew E. Helgeson, Todd M. Squires</i>	
(591j) Solution Thermodynamics of Amphiphilic Polymers in Ionic Liquids	872
<i>Zhiqi He, Paschalis Alexandridis</i>	
(591h) Ionic Liquids in Microdroplet System: Droplet Formation and Interfacial Mass Transfer Study	873
<i>Lin Bai, Yuhang Fu, Kexin Bi, Yi Cheng</i>	
(591i) The Unique Simultaneously Oleophobic/Hydrophilic Behavior of a Nanometer-Thick Ionic Liquid on the Silica Surface	874
<i>Victor Manrique, Lei Li</i>	
(594a) Evaluating Performance of PYR13FSI As an Electrolyte with Lifsi Salt	875
<i>Gregory D. Chipman, Thomas F. Fuller</i>	
(594b) A Comprehensive Approach to Produce Industrially Relevant Sulfur Cathode for Lithium-Sulfur Batteries	876
<i>Juchen Guo, Haiping Su</i>	
(594c) Effect of Salt Concentration on the Reactivity and Dynamics of the Electrolyte at the Li Anode of Lithium/Sulfur Batteries	877
<i>Luis E. Camacho-Forero, Taylor Smith, Perla B. Balbuena</i>	
(594d) Countering the Polysulfide Shuttle Reaction with Next Generation Cathodes and Electrolytes	878
<i>Ethan P. Kamphaus, Perla B. Balbuena</i>	
(594e) Nanostructured Transition Metal Nitrides As Promising Cathode Materials for Lithium Sulfur Batteries	879
<i>Negar Mosavati, Steven Salley, Simon Ng</i>	
(594f) Vertically Ordered Titanium Nitride Nanotube As a Highly Efficient Cathode Material for Lithium Sulfur Batteries	880
<i>Negar Mosavati, Steven Salley, Simon Ng</i>	
(594g) Non-Invasive in Operando Imaging of Lithium-Sulfur Battery Using Light Microscopy	881
<i>Nian Liu, Steven Chu, Yi Cui</i>	
(620a) Diffusiophoretic Effects on Coffee Ring Patterns	882
<i>Darrell Velegol, Rajarshi Guha, Farzad Mohajerani, Ayusman Sen</i>	

(620b) Microdynamics and Elasticity of Fractal Gels with Embedded Active Colloids	883
<i>Megan Szakasits, Tianhui Ma, Wenxuan Zhang, Michael J. Solomon</i>	
(620c) Investigation of the Motion of Patchy Particle Swimmers Near Fluid/Fluid and Solid/Liquid Interfaces	884
<i>Zohreh Jalilvand, Ilona Kretzschmar</i>	
(620d) Acitve Toroids	885
<i>Ya-Wen Chang, Ricardo Cruz, Alexandros Fragkopoulos, Andres Garcia, Alberto Fernandez-Nieves</i>	
(620e) Simultaneous Aggregation and Height Bifurcation of Colloidal Particles Near Electrodes in Oscillatory Electric Fields	886
<i>Scott C. Bukosky, William D. Ristenpart</i>	
(620f) Sticking and Slipping of Active Bacteria on Silanized Glass Surfaces	887
<i>Sumedha Sharma, Yuly A. Jaimés-Lizcano, Ryan B. McLay, Patrick C. Cirino, Jacinta C. Conrad</i>	
(620g) A Quantitative Theory of Magnetic Janus Particle Assembly	888
<i>Thomas Long, Joel Koplik, Ilona Kretzschmar</i>	
(620h) Active Janus Motors in Acoustic Confinement	889
<i>Sho Takatori, Raf De Dier, Jan Vermant, John F. Brady</i>	
(620i) Shape-Directed Micro-Rotors Powered By Ultrasound	890
<i>Syeda Sabrina, Suzanne Ahmed, Allan Brooks, T. Mallouk, Kyle J. M. Bishop</i>	
(620j) Influence of Electrolyte Concentration on the Aggregation Ofcolloidal Particles Near Electrodes in Oscillatory Fields	891
<i>Sukhleen Saini, Scott C. Bukosky, William D. Ristenpart</i>	
(644a) Influence of Cobalt and Sodium Doping on MnO/CNT Composite Anode Materials for Li-Ion Batteries	892
<i>Alessandro Palmieri, Raana Kashfi-Sadabad, Sajad Yazdani, Michael T Pettes, William E. Mustain</i>	
(644b) Engineered Silicon Graphene Oxide Anodes for Lithium Ion Batteries	893
<i>Kurt B. Smith, M. Silvina Tomassone</i>	
(644c) High Throughput Approach to Accelerate Electrolyte Discovery for Post Li-Ion Batteries	894
<i>Nav Nidhi Rajput, Xiaohui Qu, Kristin Persson</i>	
(644d) Electrolyte Salt Considerations Toward a High-Capacity, Reversible Li-Air (Li-O₂) Battery	895
<i>Colin M. Burke, Bryan D. McCloskey</i>	
(644e) Computational and Experimental Investigation of Stable Polymer-Based Electrolytes for Li-O₂ Batteries	896
<i>Shuting Feng, Livia Giordano, Chibueze Amanchukwu, Mao Chen, Robinson Anandakathir, Jeremiah A. Johnson, Yang Shao-Horn</i>	
(644f) Mechanistic Insights into the Sodium-Oxygen Battery Cathode Electrochemistry	897
<i>Jessica E. Nichols, Bryan D. McCloskey</i>	
(644g) Anode Performance and Safety Evaluation of Potassium-Ion Batteries	898
<i>Ryan A. Adams, Arvind Varma, Vilas G. Pol</i>	
(655a) Nucleation of Entropic Crystals	899
<i>Julia Dshemuchadse, Richmond S. Newman, Samantha Nola, Sharon C. Glotzer</i>	
(655b) Two-Step Crystal Nucleation Is Selected Because of Lower Surface Free Energy Barrier	900
<i>Peter Vekilov</i>	
(655c) Modeling the Step Velocity of Non-Centrosymmetric Growth Units and Accounting for Stable/Unstable Layers	901
<i>Carl Tilbury, Mark Joswiak, Michael F. Doherty, Baron Peters</i>	
(655d) The Use of Ionic Liquids for API Purifications and Its Effect on Nucleation Kinetics	902
<i>Samir Kulkarni, Allan Myerson, Cameron Weber</i>	
(655e) Homogeneous Bubble Nucleation in Liquid Carbon Dioxide from a Hybrid of Molecular Dynamics Simulation and Density Gradient Theory	903
<i>Kai Langenbach, Martin Horsch, Manfred Heilig, Hans Hasse</i>	
(655g) Simulation of Homogeneous Nucleation of Co-Crystals from a Binary Hard Sphere Fluid Mixture	906
<i>Praveen Kumar Bommineni, Sudeep Punnathanam</i>	
(662a) Molecular Self-Assembly in Liquid Crystals	907
<i>Nicholas L. Abbott, Xiaoguang Wang, Emre Bukusoglu</i>	
(662b) Using Advanced Rheological and Neutron Scattering Techniques to Determine Signatures of Branching in Wormlike Micelles (WLMs)	908
<i>Michelle A. Calabrese, Simon A. Rogers, Lionel Porcar, Norman J. Wagner</i>	
(662c) Ionically Crosslinked Polymer Networks for the Multiple-Month Release of Small Molecules	911
<i>Patrick G. Lawrence, Udaka K. de Silva, Jennifer L. Brown, Yakov Lapitsky</i>	
(662d) Photo-Controlled Bcl-2 siRNA and Paclitaxel Co-Delivery Via Azobenzene Based Catanionic Vesicles	912
<i>Zumra Peksaglam, Xiaoyang Zhang, Pin Wang, C. Ted Lee</i>	
(662e) Succession of Alkane Conformational Motifs Bound within Hydrophobic Nano-Capsule Assemblies	913
<i>Hank Ashbaugh, J. Wesley Barnett</i>	
(662f) Self-Assembly of Nanoparticles into Biomimetic Capsid-like Nanoshells	914
<i>Ming Yang, Nicholas A. Kotov</i>	
(662g) Interactions Between Antimalarials and Hematin Crystal Surface Sites Determine the Mode of Growth Inhibition	915
<i>Katy N. Olafson, Peter Vekilov, Jeffrey D. Rimer</i>	
(662h) pH Driven Reorientation of Cytochrome c on Silica Nanoparticles: Effect of Surface Charge Distribution and Dipole Moment	916
<i>Jens Meissner, Gerhard H. Findenegg, Bhuvnesh Bharti</i>	
(665a) Destabilization of Proteins in Extreme Conditions: Molecular Simulations of the Denaturation of Trp-Cage Miniprotein	917
<i>Sang Beom Kim, Jeremy C. Palmer, Pablo G. Debenedetti</i>	

(665b) Understanding the Structural Differences Between Psychrophilic and Thermophilic Enzymes: A Molecular Dynamics Study	918
<i>Siva Dasetty, Weigao Wang, Sapna Sarupria, Mark A. Blenner</i>	
(665c) Self-Assembled Peptides with RGD Motifs As Scaffolds for Tissue Engineering	919
<i>Graziano Deidda, Sai Vamshi R Jonnalagadda, Jacob W Spies, Anthi Ranella, Estelle Mossou, V. Trevor Forsyth, Edward P Mitchell, Anna Mitraki, Phanourios Tamamis</i>	
(665d) Membrane Guided Self-Assembly of Dimers and Trimers of Tight Junction Proteins	920
<i>Flaviyan Jerome Irudayanathan, Xiaoyi Wang, Nan Wang, Shikha Nangia</i>	
(665e) Insights into Self-Assembly Mechanisms of Intrinsically Disordered Proteins from Atomistic Simulations	921
<i>Gul H. Zerze, Jeetain Mittal</i>	
(665f) How Macromolecular Solvation Influences Its Conformations	922
<i>Zhitong Jiang, Amish Patel</i>	
(665g) Viscous Solvents Enable a Model Prebiotic Nucleic Acid Replication Cycle	923
<i>Christine He, Martha A. Grover, Isaac Gallego, Brandon Laughlin, Nicholas Hud</i>	
(665h) Tension-Dependent Free Energies of Nucleosome Unwrapping	924
<i>Joshua Lequeieu, Andres Cordoba, Juan J. de Pablo</i>	
(665i) An Optimization-Based Approach for the Design of Self-Assembled DNA Tiles	925
<i>Yu Gao, Yongli Mi, Richard Lakerveld</i>	
(666a) Linear Independence and Optimality Concepts Revisited in Thermodynamics and Kinetics	928
<i>Patricia Pichardo, Vasilios Manousiouthakis</i>	
(666b) Designing an Extraterrestrial Submarine for Titan. I. Nitrogen Solubility Modeling in the Titan Hydrocarbon Seas	929
<i>Jason W. Hartwig, Peter Meyerhofer, Steve Oleson, Anthony Colozza, Ralph Lorenz</i>	
(666c) Testing DFT Predictions at Finite Temperatures: Anomalous Phase Behavior and Long-Range Superstructures of CoPt	930
<i>Elizabeth Decolvenaere, Michael Gordon, Anton Van der Ven</i>	
(666d) Demonstration of the Equivalence of Ring-Additivity and Group-Contribution Methods for Properties of Unsubstituted Polycyclic Aromatic Hydrocarbons (PAH)	931
<i>Christopher Pope</i>	
(666e) Experimental Measurements and Predictions of the Properties of Refrigerant Fluids Using Ab-Initio, SAFT-VR Mie and COSMO Calculations	934
<i>Patrice L. Paricaud, Olivier Baudouin, Christophe Coquelet, Abdelatif Baba-Ahmed, Louis Campagnolo, Johnny Deschamps, Laurent Catoire, Jiri Janecek, Julien Glorian, Celine Houriez, Jamal El Abbadi, Gilbert Fuchs</i>	
(666f) Exploring the Bulk Phase Properties and Structural Properties for CO₂ and so₂ Via First Principles Calculations	935
<i>Himanshu Goel, Neeraj Rai</i>	
(666h) First-Principles Phase Diagrams: Iron at Earth's Inner Core Conditions with Full Inclusion of Anharmonic and Finite-Size Effects	936
<i>Sabry G. Moustafa, Andrew J. Schultz, Eva Zurek, David A. Kofke</i>	
(673a) Resolving Non-Specific and Specific Adhesive Interactions of Catechols at Solid/Liquid Interfaces at the Molecular Scale	937
<i>Thomas Utzig, Philipp Stock, Markus Valtiner</i>	
(673b) Using Replica Exchange Molecular Dynamics Simulations to Examine Sequence Specificity in the Adsorption of Single-Stranded DNA (ssDNA) on Chiral Single-Walled Carbon Nanotubes (SWCNTs)	938
<i>Kevin R. Hinkle, Frederick R. Phelan</i>	
(673c) Adsorption Characterization of Biomolecular Growth Modifiers of Calcium Oxalate Monohydrate Crystals	939
<i>Jun Ha Kwak, Pankaj Karande</i>	
(673d) Single Particle Tracking in Cushioned, Blebbed Supported Lipid Bilayers Enables Studies of Transmembrane Protein Diffusion	940
<i>Rohit Singh, Martin Ian Malgapo, Maurine Linder, Susan Daniel</i>	
(673e) Protein Release from Contact Lenses Monitored By Interfacial Viscoelasticity	941
<i>Noelle I. Rabiah, Gerald Fuller</i>	
(673f) Protein Self-Assembly at the Blood-Brain Barrier Tight Junction Interface	942
<i>Flaviyan Jerome Irudayanathan, Shikha Nangia</i>	
(673g) Targeted Mutagenesis and Combinatorial Library Screening Enables Control of Protein Orientation on Surfaces and Increased Activity of Adsorbed Proteins	943
<i>Carlos Cruz-Teran, Kevin Carlin, Kirill Efimenko, Jan Genzer, Balaji Rao</i>	
(673h) Controlling Protein Unfolding at the Solution-Solid Interface By Modifying the Nanoscale Environment of the Surface	944
<i>James S. Weltz, Daniel K. Schwartz, Joel L. Kaar</i>	
(673i) Role of the Air-Solution Interface on the Mechanism of Subvisible Particle Formation in an IgG1 Mab Solution	945
<i>Saba Ghazyini, Cavan Kalonia, David Volkin, Prajnaparamita Dhar</i>	
(673j) Elucidation of Self-Assembly of Silk Fibroin Proteins into Functional Biomaterials	946
<i>Yuanzhong Zhang, Younjin Min</i>	
(678a) Solutio-Inertial Phenomena: Designing Long Range, Long-Lasting, Surface-Specific Colloidal Interactions	947
<i>Anirudha Banerjee, Todd M. Squires</i>	
(678b) Microfluidic Synthesis of Janus Particles with Controlled Size and Hydrophilic/Hydrophobic Domains for Stable Pickering Emulsion Formation	948
<i>Bobby Haney, Liheng Cai, Subramanian Ramakrishnan, David A. Weitz, Dong Chen</i>	

(678c) Behavior of Metallodielectric Janus Particles Under Direct Current Electric Fields: Electrokinetics and Assembly	949
<i>Carlos A. Silvera Batista, Michael J. Solomon</i>	
(678d) Non-Equilibrium Colloidal Interactions and Chain Folding Dynamics in Time-Dependent Magnetic Fields	950
<i>Anna Coughlan, Michael A. Bevan</i>	
(678e) Characterizing Phase Separation in Colloid-Polymer Dispersions through Solvent Extraction in Microfluidic Droplet Arrays	951
<i>Blake J. Bleier, Shelley L. Anna, Lynn M. Walker</i>	
(678f) Dynamic Simulation of Aging in a Hard-Sphere Colloidal Glass after Volume-Fraction Jumps	952
<i>Jialun Wang, Roseanna N. Zia</i>	
(678g) Programming DNA-Mediated Colloidal Self-Assembly to Control 3D Binary Superlattice Formation	953
<i>Hasan Zerbe, Nathan A. Mahynski, Minseok Song, Yajun Ding, Vincent K. Shen, Jeetain Mittal</i>	
(678h) Clusters of Polyhedra in Spherical Confinement	954
<i>Erin G. Teich, Greg van Anders, Daphne Klotsa, Julia Dshemuchadse, Sharon C. Glotzer</i>	
(678i) Straining Soft Colloids in Aqueous Nematic Liquid Crystals	955
<i>Nicholas L. Abbott, Peter Mushenheim, Joel Pendery, Douglas B. Wiebel, Saverio Spagnolie</i>	
(678j) Growth and Agglomeration Rates Regulate Colloid Fractal Dimension	956
<i>Stefano Lazzari, Klavs F. Jensen, Marco Lattuada</i>	
(702a) Hematin Crystallization Mechanisms Suggest How Antimalarial Drugs Operate	957
<i>Katy N. Olafson, Jeffrey D. Rimer, Peter Vekilov</i>	
(702b) Atomistic Simulation of the Aqueous-Phase Synthesis of Au Nanoparticles	958
<i>C. Heath Turner, Yu Lei, Yuping Bao</i>	
(702c) A Mechanistic Growth Model for Organic Salt Morphology Prediction	959
<i>Jinjin Li, Michael F. Doherty</i>	
(702d) Growing Macroscopic Hydrates Using a Bioinspired Approach and Investigating Dehydration Induced Polymorphism	960
<i>Efthychios Hadjittofis, Geoff G. Z. Zhang, Jerry Heng</i>	
(702e) A Microfluidic Droplet Platform for Investigating Nucleation Kinetics of Hydrocarbons for Application to Wax Crystallization	963
<i>Samira Abedi, Siva Vanapalli, Chau-Chyun Chen</i>	
(702f) Sonocrystallization of L-Asparagine Monohydrate: Modeling and Optimization.	964
<i>Stutee Bhoi, Debasis Sarkar</i>	
(715a) The Effect of Material Flexibility on the Drying Transition of Water Between Hydrophobic Objects: Thermodynamics and Kinetics	965
<i>Y. Elia Altabet, Pablo G. Debenedetti</i>	
(715b) How Fluctuations Influence Barriers to Dewetting	966
<i>Erte Xi, Suruchi Fialoke, Amish Patel</i>	
(715c) Using Dynamic Mean Field Theory to Study Non-Equilibrium Steady States in Mesoporous Membranes	967
<i>Ashutosh Rathi, David Ford, Peter A. Monson</i>	
(715d) [Invited Talk] New Models of Brownian Aggregation and Sedimentation Rates of Colloidal Dispersions	968
<i>David S. Corti</i>	
(715e) Two Perspectives on the Phase Behavior of Small Clusters of Colloidal Particles	969
<i>Raghuram Thyagarajan, Michael A. Bevan, Dimitrios Maroudas, David Ford</i>	
(715f) Single-Molecule Hydrophobic Interactions: From Experiment to Simulation and Equilibrium to Non-Equilibrium	970
<i>Jacob I. Monroe, Philipp Stock, Thomas Utzig, David J. Smith, Markus Valtiner, M. Scott Shell</i>	
(715g) Metastable Criticality in Liquids with Tetrahedral Symmetry	971
<i>Renjie Chen, Jeremy C. Palmer</i>	
(715h) Molecular Model for Chirality Phenomena	972
<i>Folarin Latinwo, Frank H. Stillinger, Pablo G. Debenedetti</i>	
(716a) Experimental and Modelling Study of the Phase Equilibria of (CO₂ + methylcyclohexane + N₂) at High Pressures and Temperatures	973
<i>E. Chidi Ejika, Geraldine A. Torin Ollarves, Saif Al Ghafri, J. P. Martin Trusler</i>	
(716b) Prediction of Liquid-Liquid Equilibria in Oligomer-Containing Biotechnological Systems Using Associating Lattice Cluster Theory (ALCT)	974
<i>Agnes Fröscher, Kai Langenbach, Erik von Harbou, Werner R. Thiel, Hans Hasse</i>	
(716c) Intermolecular Potentials for Water: Molecular Simulation of Bulk Properties, Thermodynamic Properties and Phase Behavior	975
<i>Richard J. Sadus</i>	
(716d) Thermodynamics of Liquid Polyamorphism: Equation of State of a Fluid with Thermodynamic Equilibrium Between Two Structures	976
<i>Lauren E. Amrhein, Amanda Rosenbaum, Frédéric Caupin, Mikhail A. Antsimov</i>	
(716e) Phase Behavior of Polymer Blends from Integral Equation Theory and Molecular Simulations	977
<i>Ashwin Ravichandran, Chau-Chyun Chen, Rajesh Khare</i>	
(716f) Properties of Mixed Patchy Colloids: Improved Theory for Multi-Body Effects in the Reference Fluid	978
<i>Artee Bansal, D. N. Asthagiri, Kenneth R. Cox, Walter G. Chapman</i>	
(716g) Information Theory and the Thermodynamics of Irreversible Shape Changes	979
<i>Parag Katira, Henry Hess</i>	
(716h) Predicting Mosced Parameters from COSMO-SAC Sigma Profiles	980
<i>J Richard Elliott, Marshall Gnap</i>	

(717a) Statistical Thermodynamic Modeling of Early Amyloid-β Oligomer Formation: Explicit and Implicit Incorporation of Hydrogen Bonding in a Self-Consistent Field Framework	981
<i>Nicholas P. van der Munnik, Symon Sajib, Tao Wei, Melissa A. Moss, Mark J. Uline</i>	
(717b) Aggregation of Amyloid Beta (17-36) in the Presence of Naturally Occurring Phenolic Inhibitors Using Coarse-Grained Simulations	982
<i>Yiming Wang, David C. Latschaw, Carol K. Hall</i>	
(717c) The Influence of Lipid Tail Length and Cholesterol Content on the Structure of Model Stratum Corneum Bilayers	983
<i>Christopher R. Iacovella, Timothy C. Moore, Remco Hartkamp, Clare McCabe</i>	
(717d) A Molecular Thermodynamic Model for Nanoparticle-Membrane Interactions	984
<i>David J. Smith, L. Gary Leal, Samir Mitragotri, M. Scott Shell</i>	
(717e) Coarse-Grained Modeling of Heterochromatin Formation in Chromosomal DNA	985
<i>Quinn MacPherson, Shifan Mao, Andrew J Spakowitz</i>	
(717f) Thermodynamic Perturbation Theory and Property Network for Coarse Grain DNA Model	986
<i>Matthew Seaman, Arthur S. Gow</i>	
(717g) Molecular Modeling of Antibody-Antigen Binding Near Solid Surfaces	987
<i>Derek B. Bush, Thomas A. Knotts</i>	
(717h) Overcoming Thermodynamic Limitation on the Yield of Aminotransferase Reactions	988
<i>Matthias Voges, Gabriele Sadowski, Christoph Held</i>	
(722a) Biophysical Modulation of Endothelial Membranes: Molecular-Scale Effects of Oxidized Phospholipids	989
<i>Manuela A.A. Ayee, Elizabeth LeMaster, Tzu Pin Shentu, Belinda S. Akpa, Irena Levitan</i>	
(722b) Interfacial Properties of a Glycocalyx-Mimetic Model	990
<i>Bernardo Yanez Soto, Said E. Aranda Espinoza, Juan Manuel Hernandez Meza</i>	
(722c) Multivalent Binding of Lectins to Heterogeneous Gangliosides on Cell Mimicking Surfaces	991
<i>Hung-Jen Wu, Nolan C. Worstell, Pratik Krishnan, Joshua Weatherston, Singla Akshi, Chin-An Lee</i>	
(722d) Direct Visualization of Mixing of Cholesterol and Phospholipids	992
<i>Siyounq Q. Choi</i>	
(722e) The Structure and Elasticity of Lipid Vesicles Interacting with End-Phosphorylated Polyethylene Glycol	993
<i>Jing Yu, Jun Mao, Wei Chen, Matthew V. Tirrell</i>	
(722f) Large Area Model Biomembranes (LAMBs) to Understand Membrane Mechanics, Structure, and Function	994
<i>Peter J. Beltramo, Nicole Schai, Jan Vermant</i>	
(722g) Lytic Mechanism of Histidine-Rich Antimicrobial Piscidins: Structural Flexibility, Hydrophobicity and Charge Regulation Examined in Real Time	995
<i>Mirco Sorci, Jolita Seckute, Nedzada Smajic, B. Scott Perrin, Linda K. Nicholson, Jack Blazyk, Richard W. Pastor, Myriam L. Cotten, Georges Belfort</i>	
(722h) Pore Formation by Aggregates of Melittin in 1,2-Dioleoyl-Sn-Glycero-3-Phosphocholine (DOPC) and 1,2-Di-(9Z-octadecenoyl)-Sn-Glycero-3-Phospho-(1'-rac-glycerol) (DOPG) Mixed Lipid Bilayer	996
<i>Yuan Lyu, Ning Xiang, Xiao Zhu, Ganesan Narsimhan</i>	
(722i) Pathways Used By Bacteria in Outer Membrane Vesicle Toxicity: A Target for Disease Treatment	997
<i>Justin Nice</i>	
(722j) Studies of Mechanism of Vibrio Cholerae Outer Membrane Vesicles Delivery to Target Cells for the Identification of Therapeutic Targets	1000
<i>Elnaz S. Rasti, Angela C. Brown</i>	
(727a) Effect of Interparticle Interactions on Agglomeration and Sedimentation Rates of Colloidal Silica Microspheres	1001
<i>Yung-Jih Yang, Aniruddha Kelkar, David S. Corti, Elias I Franses</i>	
(727b) Surfactant-Assisted Extraction of Lignan from Defatted Flaxseed with Micellar Solutions	1002
<i>Bing-Hung Chen, Clare T.C. Chen, Duu-Jong Lee</i>	
(727c) Characterizing Salt Effects on Adsorbed Interfacial Surfactant and Hydration Layers Around Single Wall Carbon Nanotubes Using Analytical Ultracentrifugation	1003
<i>Stephanie Lam, Jeffrey A. Fagan</i>	
(727d) Influence of Coalescent Distribution on Film Formation Behavior of Colloidal Dispersions	1004
<i>Brandon W. Rowe, Alan Nakatani, John Ell, Kirt Page</i>	
(727e) Complex Fluids at Interfaces: Some Open-Ended Problems in Colloidal Systems	1005
<i>Suraj Deshmukh</i>	
(727f) Probing Quench-Dependent Gelation in Thermoresponsive Attractive Colloids	1006
<i>Tuan T. D. Nguyen, Juntae Kim, Matthew E. Helgeson</i>	
(727g) Image Method for Electrostatic Polarization Energy of Dipolar Particle Clusters	1007
<i>Kyle Gustafson, Jian Qin</i>	
(727h) An Extended Nanoparticle Haloing Study in Microgravity	1008
<i>Md Mahmudur Rahman, Ben King, Niharika Neeerudu Sreeramulu, John Ferguson, Hemali Rathnayake, Gerold A. Willing, Stuart J. Williams</i>	
(727i) Realizing Non-Close-Packed Crystal Structures through Directional Binding of DNA-Functionalized Colloidal Clusters	1009
<i>Talid Sinno, John C. Crocker, Ian Jenkins, Mehdi B. Zanjani</i>	
(728a) Nonlinear Learning of Colloidal Assembly Mechanisms from Simulation and Experiment	1010
<i>Andrew W. Long, Jie Zhang, Steve Granick, Andrew L. Ferguson</i>	
(728b) Open Crystals from Triblock Janus Colloids	1011
<i>Wesley F. Reinhart, Athanassios Z. Panagiotopoulos</i>	

(728c) Topology Free Folding Mechanism for Polyhedral Nets	1012
<i>Paul Dodd, Pablo F. Damasceno, Sharon C. Glotzer</i>	
(728d) The Role of Interaction Heterogeneity in the Self-Assembly of DNA-Functionalized Colloids	1013
<i>Ian Jenkins, John C. Crocker, Talid Sinno</i>	
(728e) Dynamic, Directed Self-Assembly of Nanoparticles Via Toggled Interactions	1014
<i>Zachary Sherman, James Swan</i>	
(728f) DNA-Conjugated Nanoparticle Assemblies Demonstrate a Tunable Mechanical Response	1015
<i>Joshua Lequieu, Andres Cordoba, Daniel M. Hinckley, Juan J. de Pablo</i>	
(728g) Characterizing Multi-Flavored Assembly of Two Dimensional Binary Colloidal Crystals	1016
<i>Nathan A. Mahynski, Vincent K. Shen, Hasan Zerze, Jeetain Mittal</i>	
(728h) Multiscale Modelling of Macromolecule Self-Assembly in Solution: The Case of Poly-μ-Caprolactone in Acetone-Water Mixtures	1017
<i>Daniele Marchisio, Alessio Lavino, Nicodemo Di Pasquale, Paola Carbone</i>	
(728i) Assembly-State Switching: Alkane Guest Length Drives Assembly Transitions Between Multimeric Deep-Cavity Cavitant Complexes	1018
<i>J. Wesley Barnett, Du Tang, Bruce C. Gibb, Hank Ashbaugh</i>	
(730a) A Gaussian-Charge Polarizable Model for Water	1019
<i>Hao Jiang, Othonas A. Moultos, Ioannis G. Economou, Athanassios Z. Panagiotopoulos</i>	
(730b) Introducing an Individualized Transferable Anisotropic Mie Force Field	1020
<i>Dominik Weidler, Joachim Gross</i>	
(730c) Optimization of a Transferable Shifted Force Field for Interfaces and Inhomogeneous Fluids	1021
<i>J Richard Elliott, S. Mostafa Razavi, M. Göktug Ahunbay, Marcel Balçik</i>	
(730d) Uncertainty Quantification of Intermolecular Parameters with a Transferable Potential Model for N-Alkanes	1022
<i>Richard A. Messlerly, Thomas A. Knotts, W. Vincent Wilding</i>	
(730e) Coarse Grained Parameterization of Gram-Negative Bacterial Outer Membrane	1023
<i>Huilin Ma, Shikha Nangia</i>	
(730f) Modeling of DNA-Mediated Pair Interactions Between Nanoparticles	1024
<i>Hasan Zerze, Jeetain Mittal</i>	
(730g) A New Generation Reactive Force Field Based on Valence Bond Concepts with Polarized Charge Distributions, Fundamental Concepts and Application to Hydrogen Systems	1025
<i>Saber Naserifar, William A. Goddard, Sergey Zybin, Andres Jaramillo-Botero</i>	
(730h) An Embedded Atom Method Potential for Bimetallic Alloys	1026
<i>Srikanth Divi, Abhijit Chatterjee</i>	
(754a) Interfacial Heat Transfer in Phase Change Material Modified Asphalt	1027
<i>Pouria Nourian, Rajesh Khare</i>	
(754b) Spontaneous Recovery of Superhydrophobicity on Nano-Textured Surfaces	1028
<i>Suruchi Fialoke, Erte Xi, Amish Patel</i>	
(754c) Kinetics and Mechanism of Homogeneous Ice Nucleation in Freestanding Nanofilms of Supercooled Water	1029
<i>Amir Haji-Akbari, Pablo G. Debenedetti</i>	
(754d) Molecular Dynamics Simulations of Clathrate Hydrate Nucleation Near Model Hydrophobic and Hydrophilic Surfaces	1030
<i>Ryan DeFever, Sapna Sarupria</i>	
(754e) [Invited Talk]: Accelerated Nucleation and Polymorph Selection with Trace Additives: Theory and Simulation	1031
<i>Geoffrey Poon, Tobias Lemke, Stefan Seritan, Christine Peter, Baron Peters</i>	
(754f) Confined Water Determines Transport Properties of Guest Molecules in Narrow Pores	1032
<i>Alberto Striolo, Anh Phan, David R. Cole, Joachim Dzubiella, Richard Gregor Weiß</i>	
(754g) Thermodynamic and Transport Properties of Natural Gas Fluids Confined By Calcite: A Molecular Dynamics Study	1033
<i>Luis F.M. Franco, Marcelo Castier, Ioannis G. Economou</i>	
(754h) Mixing-Rule Free Description of Dispersive Interactions in Perturbed-Chain Statistical Associating Fluid Theories	1034
<i>Stepan Hlushak</i>	
(754i) Using Molecular Simulations to Develop Design Tools and Correlations for Engineering Applications of Aqueous Electrolyte Solutions	1035
<i>Kevin R. Hinkle, Cynthia J. Jameson, Sohail Murad</i>	
Author Index	