November 6, 2012

Volume 84, Issue 21

Pages 8899-9654

Order Print Issue

Editorial

Analytical Chemistry: The Synergies between the Division and the Journal

Jonathan V. Sweedler, David W. Koppenaal

pp 8899–8899

Publication Date (Web): October 17, 2012 (Editorial)

DOI: 10.1021/ac302945v

Features

1-D and 2-D Photonic Crystals as Optical Methods for Amplifying Biomolecular Recognition

Sudeshna Pal, Philippe M. Fauchet, and Benjamin L. Miller

pp 8900–8908

Publication Date (Web): September 4, 2012 (Feature)

DOI: 10.1021/ac3012945

Section:

Biochemical Methods

Editors' Highlights

Time-of-Flight Secondary Ion Mass Spectrometry-Based Molecular Distribution Distinguishing Healthy and Osteoarthritic Human Cartilage

Berta Cillero-Pastor, Gert Eijkel, Andras Kiss, Francisco J. Blanco, and Ron M. A. Heeren

pp 8909–8916

Publication Date (Web): September 5, 2012 (Editors' Highlight)

DOI: 10.1021/ac301853q

Section:

Biochemical Methods

Comprehensive Lipidome Profiling of Isogenic Primary and Metastatic Colon Adenocarcinoma Cell Lines

Cassie J. Fhaner, Sichang Liu, Hong Ji, Richard J. Simpson, and Gavin E. Reid

pp 8917–8926

Publication Date (Web): October 5, 2012 (Editors' Highlight)

DOI: 10.1021/ac302154g

Section:

Biochemical Methods

Phase Switching to Enable Highly Selective Activity-Based Assays

Hemakesh Mohapatra and Scott T. Phillips

pp 8927–8931

Publication Date (Web): October 17, 2012 (Editors' Highlight)

DOI: 10.1021/ac302582h

Section:

Biochemical Methods

Letters to Analytical Chemistry

Near-Infrared Electrogenerated Chemiluminescence of Ultrasmall Ag_2Se Quantum Dots for the Detection of Dopamine

Ran Cui, Yi-Ping Gu, Lei Bao, Jing-Ya Zhao, Bao-Ping Qi, Zhi-Ling Zhang, Zhi-Xiong Xie, and Dai-Wen Pang

pp 8932–8935

Publication Date (Web): October 9, 2012 (Letter)

DOI: 10.1021/ac301835f

Section:

Mammalian Hormones

Quantitative Analysis of Molecular Transport across Liposomal Bilayer by J-Mediated ^{13}C Overhauser Dynamic Nuclear Polarization

Chi-Yuan Cheng, Olga J.G.M. Goor, and Songi Han

pp 8936–8940

Publication Date (Web): October 16, 2012 (Letter)

DOI: 10.1021/ac301932h

Section:

Biochemical Methods

A Wide Spectral Range Photoacoustic Aerosol Absorption Spectrometer

C. Haisch, P. Menzenbach, H. Bladt, and R. Niessner

pp 8941–8945

Publication Date (Web): October 4, 2012 (Letter)

DOI: 10.1021/ac302194u

Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Integrin-Targeted Trifunctional Probe for Cancer Cells: A "Seeing and Counting" Approach

Zhubao Zhang, Qiang Luo, Xiaowen Yan, Zhaoxin Li, Yacui Luo, Limin Yang, Bo Zhang, Haifeng Chen, and Qiuquan Wang

pp 8946–8951

Publication Date (Web): October 17, 2012 (Letter)

DOI: 10.1021/ac302029w

Section:

Biochemical Methods

Human Serum Albumin Stabilized Gold Nanoclusters as Selective Luminescent Probes for Staphylococcus aureus *and Methicillin-Resistant* Staphylococcus aureus

Po-Han Chan and Yu-Chie Chen

pp 8952–8956

Publication Date (Web): October 22, 2012 (Letter)

DOI: 10.1021/ac302417k

Section:

Biochemical Methods

Native Mass Spectrometry Characterization of Intact Nanodisc Lipoprotein Complexes

Michael T. Marty, Hao Zhang, Weidong Cui, Robert E. Blankenship, Michael L. Gross, and Stephen G. Sligar

pp 8957–8960

Publication Date (Web): October 12, 2012 (Letter)

DOI: 10.1021/ac302663f

Section:

Biochemical Methods

Assays for Methionine γ-Lyase and S-Adenosyl-L-homocysteine Hydrolase Based on Enzymatic Formation of CdS Quantum Dots in Situ

Laura Saa, José M. Mato, and Valeri Pavlov

pp 8961–8965

Publication Date (Web): October 22, 2012 (Letter)

DOI: 10.1021/ac302770q

Section:

Enzymes

Aptamer-Based Viability Impedimetric Sensor for Bacteria

Mahmoud Labib, Anna S. Zamay, Olga S. Kolovskaya, Irina T. Reshetneva, Galina S. Zamay, Richard J. Kibbee, Syed A. Sattar, Tatiana N. Zamay, and Maxim V. Berezovski

pp 8966–8969

Publication Date (Web): October 17, 2012 (Letter)

DOI: 10.1021/ac302902s

Section:

Biochemical Methods

Technical Notes

Variable-Pitch Rectangular Cross-section Radiofrequency Coils for the Nitrogen-14 Nuclear Quadrupole Resonance Investigation of Sealed Medicines Packets

Jamie Barras, Shota Katsura, Hideo Sato-Akaba, Hideo Itozaki, Georgia Kyriakidou, Michael D. Rowe, Kaspar A. Althoefer, and John A. S. Smith

pp 8970–8972

Publication Date (Web): October 11, 2012 (Technical Note)

DOI: 10.1021/ac3015643

Section:

Pharmaceutical Analysis

Integration of Fully Microfabricated, Three-Dimensionally Sharp Electrospray Ionization Tips with Microfluidic Glass Chips

Lauri Sainiemi, Tiina Sikanen, and Risto Kostiainen

pp 8973–8979

Publication Date (Web): October 9, 2012 (Technical Note)

DOI: 10.1021/ac301602b

Section:

Biochemical Methods

Method for Estimating the Tip Geometry of Scanning Ion Conductance Microscope Pipets

Matthew Caldwell, Samantha J. L. Del Linz, Trevor G. Smart, and Guy W. J. Moss

pp 8980–8984

Publication Date (Web): October 19, 2012 (Technical Note)

DOI: 10.1021/ac301851n

Section:

Biochemical Methods

Biocompatible Microfabrication of 3D Isolation Chambers for Targeted Confinement of Individual Cells and Their Progeny

Jason C. Harper, Susan M. Brozik, C. Jeffrey Brinker, and Bryan Kaehr

pp 8985–8989

Publication Date (Web): October 16, 2012 (Technical Note)

DOI: 10.1021/ac301816c

Section:

Biochemical Methods

Sorbent Coated Glass Wool Fabric as a Thin Film Microextraction Device

Farhad Riazi Kermani and Janusz Pawliszyn

pp 8990–8995

Publication Date (Web): October 7, 2012 (Technical Note)

DOI: 10.1021/ac301861z

Section:

Water

Mass Spectrometry Imaging on Porous Silicon: Investigating the Distribution of Bioactives in Marine Mollusc Tissues

Maurizio Ronci, David Rudd, Taryn Guinan, Kirsten Benkendorff, and Nicolas H. Voelcker

pp 8996–9001

Publication Date (Web): September 25, 2012 (Technical Note)

DOI: 10.1021/ac3027433

Section:

Biochemical Methods

Capillary-Driven Toner-Based Microfluidic Devices for Clinical Diagnostics with Colorimetric Detection

Fabrício Ribeiro de Souza, Guilherme Liberato Alves, and Wendell Karlos Tomazelli Coltro

pp 9002–9007

Publication Date (Web): October 17, 2012 (Technical Note)

DOI: 10.1021/ac302506k

Section:

Biochemical Methods

Articles

GOFAST: An Integrated Approach for Efficient and Comprehensive Membrane Proteome Analysis

Yanbao Yu, Ling Xie, Harsha P. Gunawardena, Jainab Khatun, Christopher Maier, Wendy Spitzer, Maarten Leerkes, Morgan C. Giddings, and Xian Chen

pp 9008–9014

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac300134e

Section:

Biochemical Methods

Measured Effects of Various Electrolyte and Capillary Properties in Dielectric Barrier Electrospray Ionization: Development of a Comprehensive Model

Irina Reginskaya, Ann-Kathrin Stark, Michael Schilling, Dirk Janasek, and Joachim Franzke

pp 9015–9024

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac301027z

Section:

Electric Phenomena

A Rapid Microfluidic Mixer for High-Viscosity Fluids To Track Ultrafast Early Folding Kinetics of G-Quadruplex under Molecular Crowding Conditions

Ying Li, Youzhi Xu, Xiaojun Feng, and Bi-Feng Liu

pp 9025–9032

Publication Date (Web): September 28, 2012 (Article)

DOI: 10.1021/ac301864r

Section:

Biochemical Methods

Robust Algorithm for Aligning Two-Dimensional Chromatograms

Jonas Gros, Deedar Nabi, Petros Dimitriou-Christidis, Rebecca Rutler, and J. Samuel Arey

pp 9033–9040

Publication Date (Web): October 19, 2012 (Article)

DOI: 10.1021/ac301367s

Section:

Biochemical Methods

Assessing the Extent of Bone Degradation Using Glutamine Deamidation in Collagen

Julie Wilson, Nienke L. van Doorn, and Matthew J. Collins

pp 9041–9048

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac301333t

Section:

History, Education, and Documentation

Plasmon Waveguide Resonance Raman Spectroscopy

Kristopher J. McKee, Matthew W. Meyer, and Emily A. Smith

pp 9049–9055

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac3013972

Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Fluorescence Resonance Energy Transfer Mediated Large Stokes Shifting Near-Infrared Fluorescent Silica Nanoparticles for in Vivo Small-Animal Imaging

Xiaoxiao He, Yushuang Wang, Kemin Wang, Mian Chen, and Suye Chen

pp 9056–9064

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac301461s

Section:

Biochemical Methods

Tunable Ionic Mobility Filter for Depletion Zone Isotachophoresis

Jos Quist, Paul Vulto, Heiko van der Linden, and Thomas Hankemeier

pp 9065–9071

Publication Date (Web): September 26, 2012 (Article)

DOI: 10.1021/ac301612n

Section:

Biochemical Methods

Electrochemical Immunosensing Platform for DNA Methyltransferase Activity Analysis and Inhibitor Screening

Mo Wang, Zhenning Xu, Lijian Chen, Huanshun Yin, and Shiyun Ai

pp 9072–9078

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac301620m

Section:

Enzymes

Laserspray Ionization Imaging of Multiply Charged Ions Using a Commercial Vacuum MALDI Ion Source

Ellen D. Inutan, James Wager-Miller, Ken Mackie, and Sarah Trimpin

pp 9079–9084

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac301665h

Section:

Biochemical Methods

Surface Plasmon Resonance Sensor for Dissolved and Gaseous Carbon Dioxide

Thomas Lang, Thomas Hirsch, Christoph Fenzl, Fabian Brandl, and Otto S. Wolfbeis

pp 9085–9088

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac301673n

Section:

Inorganic Analytical Chemistry

Simple and Real-Time Colorimetric Assay for Glycosidases Activity Using Functionalized Gold Nanoparticles and Its Application for Inhibitor Screening

Zhanghua Zeng, Shin Mizukami, and Kazuya Kikuchi

pp 9089–9095

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac301677v

Section:

Enzymes

TAML Activator-Based Amperometric Analytical Devices as Alternatives to Peroxidase Biosensors

Alexander D. Ryabov, Ricardo Cerón-Camacho, Omar Saavedra-Díaz, Matthew A. Denardo, Anindya Ghosh, Ronan Le Lagadec, and Terrence J. Collins

pp 9096–9100

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac301714r

Section:

Biochemical Methods

The Necessity of Microscopy to Characterize the Optical Properties of Size-Selected, Nonspherical Aerosol Particles

Daniel P. Veghte and Miriam A. Freedman

pp 9101–9108

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac3017373

Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Accurate Measurements of Infinite Dilution Activity Coefficients Using Gas Chromatography with Static-Wall-Coated Open-Tubular Columns

Qianqian Xu, Baogen Su, Xinyi Luo, Huabin Xing, Zongbi Bao, Qiwei Yang, Yiwen Yang, and Qilong Ren

pp 9109–9115

Publication Date (Web): October 7, 2012 (Article)

DOI: 10.1021/ac301668n

Section:

Organic Analytical Chemistry

Comparison of Two-Dimensional Fast Raman Imaging versus Point-by-Point Acquisition Mode for Human Bone Characterization

Guillaume Falgayrac, Bernard Cortet, Olivier Devos, Jacques Barbillat, Vittorio Pansini, Anne Cotten, Gilles Pasquier, Henri Migaud, and Guillaume Penel

pp 9116–9123

Publication Date (Web): September 20, 2012 (Article)

DOI: 10.1021/ac301758y

Section:

Biochemical Methods

Mapping pH-Induced Protein Structural Changes Under Equilibrium Conditions by Pulsed Oxidative Labeling and Mass Spectrometry

Siavash Vahidi, Bradley B. Stocks, Yalda Liaghati-Mobarhan, and Lars Konermann

pp 9124–9130

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302393g

Section:

Biochemical Methods

Quantitative Response of IMS Detector for Mixtures Containing Two Active Components

Jarosław Puton, Sanna I. Holopainen, Marko A. Mäkinen, and Mika E. T. Sillanpää

pp 9131–9138

Publication Date (Web): October 16, 2012 (Article)

DOI: 10.1021/ac3018108

Section:

Organic Analytical Chemistry

Nano Rolling-Circle Amplification for Enhanced SERS Hot Spots in Protein Microarray Analysis

Juan Yan, Shao Su, Shijiang He, Yao He, Bin Zhao, Dongfang Wang, Honglu Zhang, Qing Huang, Shiping Song, and Chunhai Fan

pp 9139–9145

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac301809e

Section:

Biochemical Methods

Spectroelectrochemistry at Screen-Printed Electrodes: Determination of Dopamine

Noelia González-Diéguez, Alvaro Colina, Jesús López-Palacios, and Aránzazu Heras

pp 9146–9153

Publication Date (Web): October 15, 2012 (Article)

DOI: 10.1021/ac3018444

Section:

Biochemical Methods

System Design for Integrated Comprehensive and Multidimensional Gas Chromatography with Mass Spectrometry and Olfactometry

Sung-Tong Chin, Graham T. Eyres, and Philip J. Marriott

pp 9154–9162

Publication Date (Web): October 26, 2012 (Article)

DOI: 10.1021/ac301847y

Section:

Food and Feed Chemistry

Efficient Fluorescence "Turn-On" Sensing of Dissolved Oxygen by Electrochemical Switching

Ik-Soo Shin, Thomas Hirsch, Benno Ehrl, Dong-Hak Jang, Otto S. Wolfbeis, and Jong-In Hong

pp 9163–9168

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac301830a

Section:

Inorganic Analytical Chemistry

Single-Pot Extraction-Analysis of Dyed Wool Fibers with Ionic Liquids

Katherine S. Lovejoy, Alexander J. Lou, Lauren E. Davis, Timothy C. Sanchez, Srinivas Iyer, Cynthia A. Corley, John S. Wilkes, Russell K. Feller, David T. Fox, Andrew T. Koppisch, and Rico E. Del Sesto

pp 9169–9175

Publication Date (Web): October 15, 2012 (Article)

DOI: 10.1021/ac301873s

Section:

Toxicology

Improved Conversion Rates in Drug Screening Applications Using Miniaturized Electrochemical Cells with Frit Channels

Mathieu Odijk, Wouter Olthuis, and A. van den Berg , Liang Qiao and Hubert Girault

pp 9176–9183

Publication Date (Web): September 28, 2012 (Article)

DOI: 10.1021/ac301888g

Section:

Biochemical Methods

Establishing a Measure of Reproducibility of Ultrahigh-Resolution Mass Spectra for Complex Mixtures of Natural Organic Matter

Rachel L. Sleighter, Hongmei Chen, Andrew S. Wozniak, Amanda S. Willoughby, Paolo Caricasole, and Patrick G. Hatcher

pp 9184–9191

Publication Date (Web): October 17, 2012 (Article)

DOI: 10.1021/ac3018026

Section:

Biochemical Methods

Cyanide-Selective Electrode Based on Zn(II) Tetraphenylporphyrin as Ionophore

Li D. Chen, Xu U. Zou, and Philippe Bühlmann

pp 9192–9198

Publication Date (Web): October 4, 2012 (Article)

DOI: 10.1021/ac301910c

Section:

Inorganic Analytical Chemistry

Speciation of Inorganic- and Methyl-Mercury in Biological Matrixes by Electrochemical Vapor Generation from an l-Cysteine Modified Graphite Electrode with Atomic Fluorescence Spectrometry Detection

Wang-Bing Zhang, Xin-An Yang, Yong-Ping Dong, and Jing-Jing Xue

pp 9199–9207

Publication Date (Web): October 4, 2012 (Article)

DOI: 10.1021/ac3018923

Section:

Toxicology

Improving N*-Glycan Coverage using HPLC-MS with Electrospray Ionization at Subambient Pressure*

Ioan Marginean, Scott R. Kronewitter, Ronald J. Moore, Gordon W. Slysz, Matthew E. Monroe, Gordon Anderson, Keqi Tang, and Richard D. Smith

pp 9208–9213

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac301961u

Section:

Biochemical Methods

Accurate Multiplexed Proteomics at the MS2 Level Using the Complement Reporter Ion Cluster

Martin Wühr, Wilhelm Haas, Graeme C. McAlister, Leonid Peshkin, Ramin Rad, Marc W. Kirschner, and Steven P. Gygi

pp 9214–9221

Publication Date (Web): October 25, 2012 (Article)

DOI: 10.1021/ac301962s

Section:

Biochemical Methods

Spectrally Resolved Chemiluminescent Probes for Sensitive Multiplex Molecular Quantification

Kenneth A. Browne, Dimitri D. Deheyn, Richard C. Brown, and Ian Weeks

pp 9222–9229

Publication Date (Web): October 22, 2012 (Article)

DOI: 10.1021/ac3017423

Section:

Biochemical Methods

Evaluation of the Absorption of Methotrexate on Cells and Its Cytotoxicity Assay by Using an Integrated Microfluidic Device Coupled to a Mass Spectrometer

Dan Gao, Haifang Li, Niejun Wang, and Jin-Ming Lin

pp 9230–9237

Publication Date (Web): October 5, 2012 (Article)

DOI: 10.1021/ac301966c

Section:

Pharmacology

Measuring the Grafting Density of Nanoparticles in Solution by Analytical Ultracentrifugation and Total Organic Carbon Analysis

Denise N. Benoit, Huiguang Zhu, Michael H. Lilierose, Raymond A. Verm, Naushaba Ali, Adam N. Morrison, John D. Fortner, Carolina Avendano, and Vicki L. Colvin

pp 9238–9245

Publication Date (Web): September 12, 2012 (Article)

DOI: 10.1021/ac301980a

Section:

Biochemical Methods

Drop-on-Demand Sample Introduction System Coupled with the Flowing Atmospheric-Pressure Afterglow for Direct Molecular Analysis of Complex Liquid Microvolume Samples

J. Niklas Schaper, Kevin P. Pfeuffer, Jacob T. Shelley, Nicolas H. Bings, and Gary M. Hieftje

pp 9246–9252

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac3020164

Section:

Biochemical Methods

Online Characterization of Particles and Gases with an Ambient Electrospray Ionization Source

Andrew J. Horan, Yuqian Gao, Wiley A. Hall, IV, and Murray V. Johnston

pp 9253–9258

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302024y

Section:

Air Pollution and Industrial Hygiene

Molecular Analysis of Model Gut Microbiotas by Imaging Mass Spectrometry and Nanodesorption Electrospray Ionization Reveals Dietary Metabolite Transformations

Christopher M. Rath, Theodore Alexandrov, Steven K. Higginbottom, Jiao Song, Marcos E. Milla, Michael A. Fischbach, Justin L. Sonnenburg, and Pieter C. Dorrestein

pp 9259–9267

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac302039u

Section:

Biochemical Methods

Functionalized Graphene-Coated Cobalt Nanoparticles for Highly Efficient Surface-Assisted Laser Desorption/Ionization Mass Spectrometry Analysis

Hideya Kawasaki, Keisuke Nakai, Ryuichi Arakawa, Evagelos K. Athanassiou, Robert N. Grass, and Wendelin J. Stark

pp 9268–9275

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302004g

Section:

Biochemical Methods

Electrochemical Behaviors of Single Microcrystals of Iron Hexacyanides/NaCl Solid Solution

Dongping Zhan, Dezhi Yang, Bing-sheng Yin, Jie Zhang, and Zhong-Qun Tian

pp 9276–9281

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac302053x

Section:

Electrochemistry

Inkjet Injection of DNA Droplets for Microchannel Array Electrophoresis

Takao Yasui, Yosuke Inoue, Toyohiro Naito, Yukihiro Okamoto, Noritada Kaji, Manabu Tokeshi, and Yoshinobu Baba

pp 9282–9286

Publication Date (Web): October 3, 2012 (Article)

DOI: 10.1021/ac3020565

Section:

Biochemical Methods

Quantification of Protein–Ligand Dissociation Kinetics in Heterogeneous Affinity Assays

Asha Jacob, Leo J. van IJzendoorn, Arthur M. de Jong, and Menno W.J. Prins

pp 9287–9294

Publication Date (Web): September 20, 2012 (Article)

DOI: 10.1021/ac301894k

Section:

Biochemical Methods

Ionization, Transport, Separation, and Detection of Ions in Non-Electrolyte Containing Liquids

Manuja R. Lamabadusuriya, William F. Siems, Herbert H. Hill, Jr., Adrian Mariano, and Samar K. Guharay

pp 9295–9302

Publication Date (Web): October 23, 2012 (Article)

DOI: 10.1021/ac302022d

Section:

Organic Analytical Chemistry

Melamine Sensing in Milk Products by Using Surface Enhanced Raman Scattering

Ansoon Kim, Steven J. Barcelo, R. Stanley Williams, and Zhiyong Li

pp 9303–9309

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac302025q

Section:

Food and Feed Chemistry

LC-ESI-MS/MS Analysis of Testosterone at Sub-Picogram Levels Using a Novel Derivatization Reagent

Michal Star-Weinstock, Brian L. Williamson, Subhakar Dey, Sasi Pillai, and Subhasish Purkayastha

pp 9310–9317

Publication Date (Web): September 20, 2012 (Article)

DOI: 10.1021/ac302036r

Section:

Mammalian Hormones

Effect of Cosputtering and Sample Rotation on Improving C_{60}^+ Depth Profiling of Materials

Hua-Yang Liao, Meng-Hung Tsai, Hsun-Yun Chang, Yun-Wen You, Chih-Chieh Huang, and Jing-Jong Shyue

pp 9318–9323

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac3020824

Section:

Organic Analytical Chemistry

Separation of Leukocytes from Blood Using Spiral Channel with Trapezoid Cross-Section

Lidan Wu, Guofeng Guan, Han Wei Hou, Ali Asgar. S. Bhagat, and Jongyoon Han

pp 9324–9331

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac302085y

Section:

Biochemical Methods

Specific Cooperative Effect of a Macrocyclic Receptor for Metal Ion Transfer into an Ionic Liquid

Hiroyuki Okamura, Atsushi Ikeda-Ohno, Takumi Saito, Noboru Aoyagi, Hirochika Naganawa, Naoki Hirayama, Shigeo Umetani, Hisanori Imura, and Kojiro Shimojo

pp 9332–9339

Publication Date (Web): October 10, 2012 (Article)

DOI: 10.1021/ac302015h

Section:

Phase Equilibriums, Chemical Equilibriums, and Solutions

Aluminum Oxide Nanoparticles as Carriers and Adjuvants for Eliciting Antibodies from Non-immunogenic Haptens

Ángel Maquieira, Eva M. Brun, Marta Garcés-García, and Rosa Puchades

pp 9340–9348

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac3020998

Section:

Immunochemistry

Atmospheric Solid Analysis Probe–Ion Mobility Mass Spectrometry of Polypropylene

Caroline Barrère, Florian Maire, Carlos Afonso, and Pierre Giusti

pp 9349–9354

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac302109q

Section:

Physical Properties of Synthetic High Polymers

In Vitro and In Vivo Chemical Labeling of Ribosomal Proteins: A Quantitative Comparison

Ethan G. Jaffee, Matthew A. Lauber, William E. Running, and James P. Reilly

pp 9355–9361

Publication Date (Web): September 28, 2012 (Article)

DOI: 10.1021/ac302115m

Section:

Biochemical Methods

A Two-Component Mass Balance Model for Calibration of Solid-Phase Microextraction Fibers for Pyrethroids in Seawater

Wenjian Lao, Keith A. Maruya, and David Tsukada

pp 9362–9369

Publication Date (Web): October 16, 2012 (Article)

DOI: 10.1021/ac302120m

Section:

Water

Multiplexed Detection of mRNA Using Porosity-Tuned Hydrogel Microparticles

Nak Won Choi, Jungwook Kim, Stephen C. Chapin, Thao Duong, Elaine Donohue, Pramod Pandey, Wendy Broom, W. Adam Hill, and Patrick S. Doyle

pp 9370–9378

Publication Date (Web): September 28, 2012 (Article)

DOI: 10.1021/ac302128u

Section:

Biochemical Methods

Real-Time Fluorescent Image Analysis of DNA Spot Hybridization Kinetics To Assess Microarray Spot Heterogeneity

Archana N. Rao, Christopher K. Rodesch, and David W. Grainger

pp 9379–9387

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac302165h

Section:

Biochemical Methods

MolFind: A Software Package Enabling HPLC/MS-Based Identification of Unknown Chemical Structures

Lochana C. Menikarachchi, Shannon Cawley, Dennis W. Hill, L. Mark Hall, Lowell Hall, Steven Lai, Janine Wilder, and David F. Grant

pp 9388–9394

Publication Date (Web): October 6, 2012 (Article)

DOI: 10.1021/ac302048x

Section:

Biochemical Methods

TOCCATA: A Customized Carbon Total Correlation Spectroscopy NMR Metabolomics Database

Kerem Bingol, Fengli Zhang, Lei Bruschweiler-Li, and Rafael Brüschweiler

pp 9395–9401

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302197e

Section:

Biochemical Methods

Maximizing Flow Velocities in Redox-Magnetohydrodynamic Microfluidics Using the Transient Faradaic Current

Melissa C. Weston, Christena K. Nash, Jerry J. Homesley, and Ingrid Fritsch

pp 9402–9409

Publication Date (Web): October 12, 2012 (Article)

DOI: 10.1021/ac302063a

Section:

Biochemical Methods

Quantification of Antibiotic in Biofilm-Inhibiting Multilayers by 7.87 eV Laser Desorption Postionization MS Imaging

Melvin Blaze M. T., Artem Akhmetov, Berdan Aydin, Praneeth D. Edirisinghe, Gulsah Uygur, and Luke Hanley

pp 9410–9415

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302230e

Section:

Biochemical Methods

An Electrochemical Method for Investigation of Conformational Flexibility of Active Sites of Trametes versicolor *Laccase Based on Sensitive Determination of Copper Ion with Cysteine-Modified Electrodes*

Xianchan Li, Ping Yu, Lifen Yang, Fuyi Wang, and Lanqun Mao

pp 9416–9421

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302241a

Section:

Enzymes

Extracting Information from the Ionic Strength Dependence of Electrophoretic Mobility by Use of the Slope Plot

Amal Ibrahim, Stuart A. Allison, and Hervé Cottet

pp 9422–9430

Publication Date (Web): October 10, 2012 (Article)

DOI: 10.1021/ac302033z

Section:

Organic Analytical Chemistry

Reversible Photoswitching of Spiropyran-Conjugated Semiconducting Polymer Dots

Yang-Hsiang Chan, Maria Elena Gallina, Xuanjun Zhang, I-Che Wu, Yuhui Jin, Wei Sun, and Daniel T. Chiu

pp 9431–9438

Publication Date (Web): October 4, 2012 (Article)

DOI: 10.1021/ac302245t

Section:

Radiation Biochemistry

Micropatterned Thermoresponsive Surfaces by Polymerization of Monomer Crystals: Modulating Cellular Morphology and Cell–Substrate Interactions

Feng Wang, Hongyan He, Xinmei Wang, Zhenqing Li, Daniel Gallego-Perez, Jianjun Guan, and L. James Lee

pp 9439–9445

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac302267z

Section:

Biochemical Methods

Microfluidic Device for the Selective Chemical Stimulation of Neurons and Characterization of Peptide Release with Mass Spectrometry

Callie A. Croushore, Sam-ang Supharoek, Chang Young Lee, Jaroon Jakmunee, and Jonathan V. Sweedler

pp 9446–9452

Publication Date (Web): September 24, 2012 (Article)

DOI: 10.1021/ac302283u

ACS AuthorChoice

Section:

Biochemical Methods

Structural Analysis of N*-Glycans by the Glycan-Labeling Method Using 3-Aminoquinoline-Based Liquid Matrix in Negative-Ion MALDI-MS*

Takashi Nishikaze, Kaoru Kaneshiro, Shin-ichirou Kawabata, and Koichi Tanaka

pp 9453–9461

Publication Date (Web): October 16, 2012 (Article)

DOI: 10.1021/ac302286e

Section:

Biochemical Methods

Fully-Automated Fluorimetric Determination of Aluminum in Seawater by In-Syringe Dispersive Liquid–Liquid Microextraction Using Lumogallion

Ruth Suárez, Burkhard Horstkotte, Carlos M. Duarte, and Víctor Cerdà

pp 9462–9469

Publication Date (Web): September 25, 2012 (Article)

DOI: 10.1021/ac302083d

Section:

Water

A High-Throughput Diagnostic Method for Measuring Human Exposure to Organophosphorus Nerve Agents

Jennifer S. Knaack, Yingtao Zhou, Carter W. Abney, Justin T. Jacob, Samantha M. Prezioso, Katelyn Hardy, Sharon W. Lemire, Jerry Thomas, and Rudolph C. Johnson

pp 9470–9477

Publication Date (Web): October 19, 2012 (Article)

DOI: 10.1021/ac302301w

Section:

Toxicology

Design and Development of a Field Applicable Gold Nanosensor for the Detection of Luteinizing Hormone

Ajit Zambre, Nripen Chanda, Sudhirdas Prayaga, Rosana Almudhafar, Zahra Afrasiabi, Anandhi Upendran, and Raghuraman Kannan

pp 9478–9484

Publication Date (Web): September 24, 2012 (Article)

DOI: 10.1021/ac302314e

Section:

Mammalian Hormones

Single Carbon Fiber Decorated with RuO_2 Nanorods as a Highly Electrocatalytic Sensing Element

Minkyung Kang, Yumin Lee, Hayoung Jung, Jun Ho Shim, Nam-Suk Lee, Jeong Min Baik, Sang Cheol Lee, Chongmok Lee, Youngmi Lee, and Myung Hwa Kim

pp 9485–9491

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302334t

Section:

Electrochemistry

Chemiluminescence Switching on Peroxidase-Like Fe_3O_4 Nanoparticles for Selective Detection and Simultaneous Determination of Various Pesticides

Guijian Guan, Liang Yang, Qingsong Mei, Kui Zhang, Zhongping Zhang, and Ming-Yong Han

pp 9492–9497

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac302341b

Section:

Agrochemical Bioregulators

Preparation and Characterization of Carbon Powder Paste Ultramicroelectrodes as Tips for Scanning Electrochemical Microscopy Applications

Ashis K. Satpati and Allen J. Bard

pp 9498–9504

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac302349m

Section:

Electrochemistry

Confocal Raman Microscopy Probing of Temperature-Controlled Release from Individual, Optically-Trapped Phospholipid Vesicles

Jonathan J. Schaefer, Chaoxiong Ma, and Joel M. Harris

pp 9505–9512

Publication Date (Web): October 8, 2012 (Article)

DOI: 10.1021/ac302346n

Section:

Pharmaceuticals

Global Multi-Method Analysis of Affinities and Cooperativity in Complex Systems of Macromolecular Interactions

Huaying Zhao and Peter Schuck

pp 9513–9519

Publication Date (Web): September 28, 2012 (Article)

DOI: 10.1021/ac302357w

Section:

Biochemical Methods

Ultraviolet Photoinitiated On-Fiber Copolymerization of Ionic Liquid Sorbent Coatings for Headspace and Direct Immersion Solid-Phase Microextraction

Tien D. Ho, Honglian Yu, William T. S. Cole, and Jared L. Anderson

pp 9520–9528

Publication Date (Web): September 19, 2012 (Article)

DOI: 10.1021/ac302316c

Section:

Plastics Fabrication and Uses

Resorcinol as a Spectrofluorometric Probe for the Hypochlorous Acid Scavenging Activity Assay of Biological Samples

Mustafa Özyürek, Burcu Bekdeşer, Kubilay Güçlü, and Reşat Apak

pp 9529–9536

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac302369p

Section:

Biochemical Methods

Alternating Current Scanning Electrochemical Microscopy with Simultaneous Fast-Scan Cyclic Voltammetry

Jason A. Koch, Melinda B. Baur, Erica L. Woodall, and John E. Baur

pp 9537–9543

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac302402p

Section:

Electrochemistry

Sensitive Detection of Transcription Factors by Isothermal Exponential Amplification-Based Colorimetric Assay

Yan Zhang, Juan Hu, and Chun-yang Zhang

pp 9544–9549

Publication Date (Web): October 10, 2012 (Article)

DOI: 10.1021/ac3024087

Section:

Biochemical Methods

Selected Ion Flow Tube-MS Analysis of Headspace Vapor from Gastric Content for the Diagnosis of Gastro-Esophageal Cancer

Sacheen Kumar, Juzheng Huang, Julia R. Cushnir, Patrik Španěl, David Smith, and George B. Hanna

pp 9550–9557

Publication Date (Web): October 4, 2012 (Article)

DOI: 10.1021/ac302409a

Section:

Biochemical Methods

Intracavity DNA Melting Analysis with Optofluidic Lasers

Wonsuk Lee and Xudong Fan

pp 9558–9563

Publication Date (Web): September 27, 2012 (Article)

DOI: 10.1021/ac302416g

Section:

Biochemical Genetics

Toward More Efficient Bioelectrocatalytic Oxidation of Ethanol for Amperometric Sensing and Biofuel Cell Technology

Barbara Kowalewska and Pawel J. Kulesza

pp 9564–9571

Publication Date (Web): October 15, 2012 (Article)

DOI: 10.1021/ac3021328

Section:

Biochemical Methods

High-Performance Binary Protein Interaction Screening in a Microfluidic Format

Matthias Meier, Rene Sit, Wenying Pan, and Stephen R. Quake

pp 9572–9578

Publication Date (Web): October 10, 2012 (Article)

DOI: 10.1021/ac302436y

Section:

Biochemical Methods

Aspartic Acid-Promoted Highly Selective and Sensitive Colorimetric Sensing of Cysteine in Rat Brain

Qin Qian, Jingjing Deng, Dalei Wang, Lifen Yang, Ping Yu, and Lanqun Mao

pp 9579–9584

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac3024608

Section:

Biochemical Methods

Viral Quantitative Capillary Electrophoresis for Counting and Quality Control of RNA Viruses

Afnan Azizi, Gleb G. Mironov, Darija Muharemagic, Mohamed Wehbe, John C. Bell, and Maxim V. Berezovski

pp 9585–9591

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac302525y

Section:

Biochemical Methods

Electrokinetic Analysis to Reveal Composition and Structure of Biohybrid Hydrogels

Ralf Zimmermann, Susanne Bartsch, Uwe Freudenberg, and Carsten Werner

pp 9592–9595

Publication Date (Web): October 2, 2012 (Article)

DOI: 10.1021/ac302538j

Section:

Pharmaceuticals

Identification of Nitrogen Defects in Diamond with Photoluminescence Excited in the 160–240 nm Region

Hsiao-Chi Lu, Meng-Yeh Lin, Sheng-Lung Chou, Yu-Chain Peng, Jen-Iu Lo, and Bing-Ming Cheng

pp 9596–9600

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac302545u

Section:

Optical, Electron, and Mass Spectroscopy and Other Related Properties

Subzero Temperature Chromatography for Reduced Back-Exchange and Improved Dynamic Range in Amide Hydrogen/Deuterium Exchange Mass Spectrometry

John D. Venable, Linda Okach, Sanjay Agarwalla, and Ansgar Brock

pp 9601–9608

Publication Date (Web): October 1, 2012 (Article)

DOI: 10.1021/ac302488h

Section:

Biochemical Methods

Miniaturized Electroosmotic Pump Capable of Generating Pressures of More than 1200 Bar

Congying Gu, Zhijian Jia, Zaifang Zhu, Chiyang He, Wei Wang, Aaron Morgan, Joann J. Lu, and Shaorong Liu

pp 9609–9614

Publication Date (Web): October 12, 2012 (Article)

DOI: 10.1021/ac3025703

Section:

Biochemical Methods

Controlling pH-Regulated Bionanoparticles Translocation through Nanopores with Polyelectrolyte Brushes

Li-Hsien Yeh, Mingkan Zhang, Sang W. Joo, Shizhi Qian, and Jyh-Ping Hsu

pp 9615–9622

Publication Date (Web): October 4, 2012 (Article)

DOI: 10.1021/ac302429d

Section:

Biochemical Methods

Three-Color Fluorescence Cross-Correlation Spectroscopy for Analyzing Complex Nanoparticle Mixtures

Megan L. Blades, Ekaterina Grekova, Holly M. Wobma, Kun Chen, Warren C. W. Chan, and David T. Cramb

pp 9623–9631

Publication Date (Web): October 11, 2012 (Article)

DOI: 10.1021/ac302572k

Section:

Biochemical Methods

Genomic DNA Extraction from Cells by Electroporation on an Integrated Microfluidic Platform

Tao Geng, Ning Bao, Nammalwar Sriranganathanw, Liwu Li, and Chang Lu

pp 9632–9639

Publication Date (Web): October 12, 2012 (Article)

DOI: 10.1021/ac3026064

Section:

Biochemical Methods

Integrated Printed Circuit Board Device for Cell Lysis and Nucleic Acid Extraction

Lewis A. Marshall, Liang Li Wu, Sarkis Babikian, Mark Bachman, and Juan G. Santiago

pp 9640–9645

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac302622v

Section:

Biochemical Methods

Chemical Analysis of C-Reactive Protein Synthesized by Human Aortic Endothelial Cells Under Oxidative Stress

Ming-Hua Tsai, Chia-Liang Chang, Yu-San Yu, Ting-Yu Lin, Chin-Pong Chong, You-Sian Lin, Mei-Yu Su, Jian-Ying Yang, Ting-Yu Shu, Xuhai Lu, Chu-Huang Chen, and Mine-Yine Liu

pp 9646–9654

Publication Date (Web): October 9, 2012 (Article)

DOI: 10.1021/ac302856v

Section:

Biochemical Methods