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IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 149(8) 2193–2486 (2024)

Cover
See Yue Feng *et al.*, pp. 2236–2243.

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Inside cover
See Benjamin T. Manard *et al.*, pp. 2244–2251.

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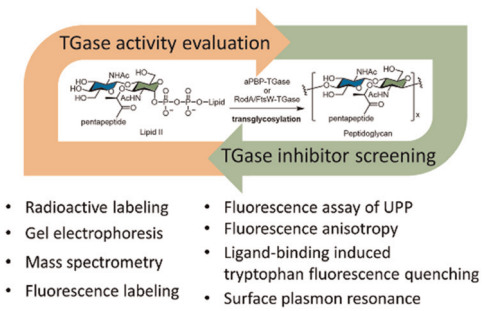
CRITICAL REVIEW

2204

Advances and prospects of analytic methods for bacterial transglycosylation and inhibitor discovery

Tse-Wei Hsu* and Jim-Min Fang

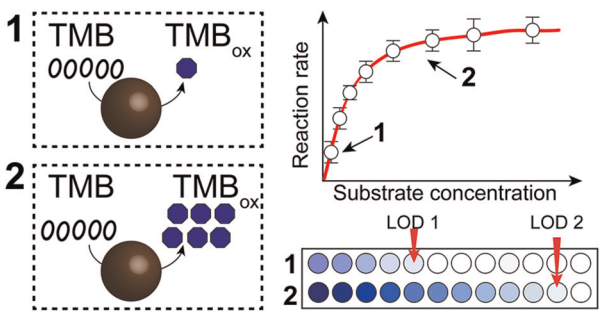


COMMUNICATIONS

2223

Characterization of nanozyme kinetics for highly sensitive detection

Vasily G. Panferov, Xiaoqin Wang and Juewen Liu*



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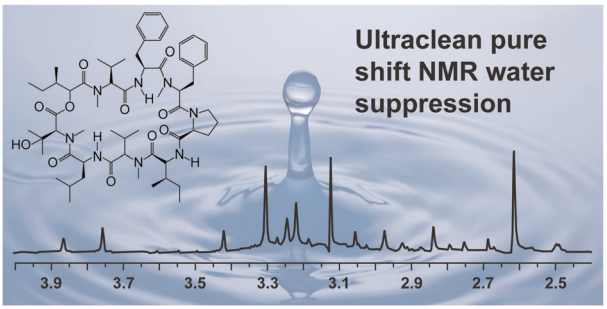
COMMUNICATIONS

2227

Ultra-clean pure shift NMR with optimal water suppression for analysis of aqueous pharmaceutical samples

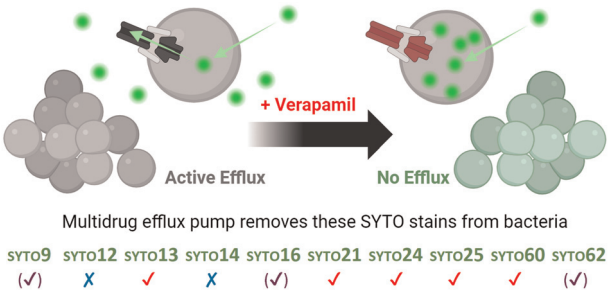
Guilherme Dal Poggetto,* Adam DiCaprio, Mikhail Reibarkh and Ryan D. Cohen



2232

Bacterial efflux pumps excrete SYTO™ dyes and lead to false-negative staining results

Gabriel Antonio Salvador Minero, Peter Bundgaard Larsen, Marie Eline Hoppe and Rikke Louise Meyer*

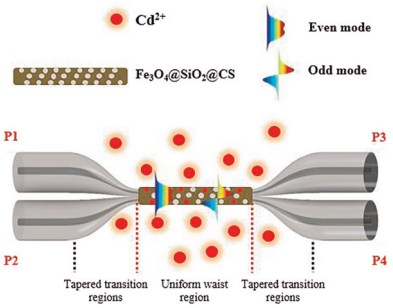


PAPERS

2236

Fiber optic cadmium ion sensors based on functionalization of a magnetic ion-imprinted polymer

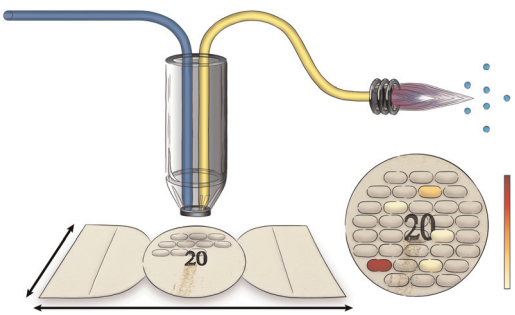
Tao Shen, Tianyu Yang, Yue Feng,* Xin Liu, Chi Liu, Weixiang Yuan, Haodong Wu and Chao Wang



2244

Mapping of uranium particles on J-type swipes with microextraction-ICP-MS

Veronica C. Bradley, Jacob Burleson, Hunter B. Andrews, Cyril V. Thompson, Tyler L. Spano, Daniel R. Dunlap, N. Alex Zirakparvar, Brian W. Ticknor, Cole R. Hexel and Benjamin T. Manard*



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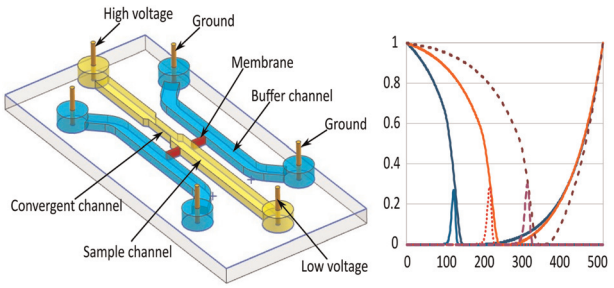
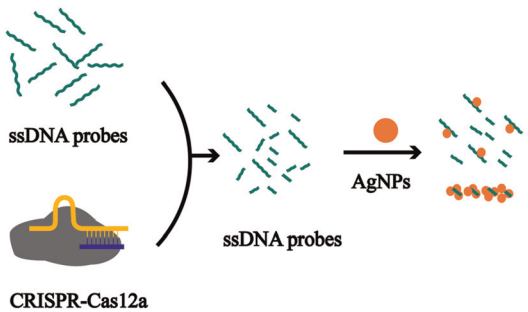
2252



Multiphysics analytical and numerical studies of biomolecule preconcentration utilizing ion concentration polarization: a case study of convergent microchannels

Van-Truong Dang and Van-Sang Pham*

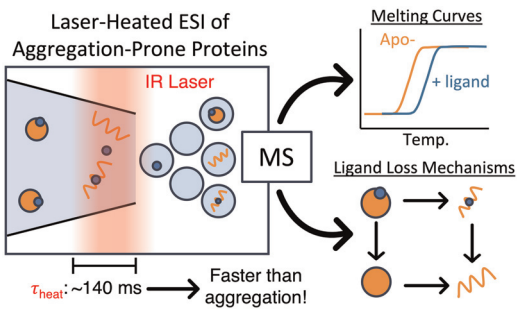
2272



A label-free and immobilization-free approach for constructing photoelectrochemical nucleic acid sensors utilizing DNA–silver nanoparticle affinity interactions

Jing Yi, Jiayao Dong, Yawen Zheng, Liu Liu, Ji Zhu and Hongwu Tang*

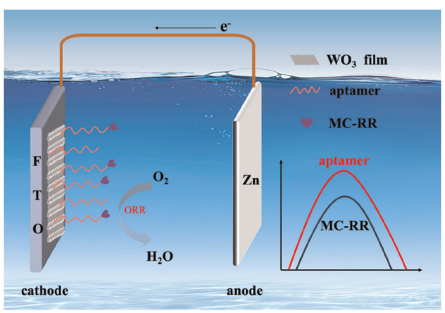
2281



Overcoming aggregation with laser heated nanoelectrospray mass spectrometry: thermal stability and pathways for loss of bicarbonate from carbonic anhydrase II

Jacob S. Jordan, Katherine J. Lee and Evan R. Williams*

2291



A zinc–air battery assisted self-powered electrochemical sensor for sensitive detection of microcystin-RR

Qianjun Wang, Ding Jiang,* Xiaojiao Du, Xueling Shan, Wenchang Wang, Hiroshi Shiigi and Zhidong Chen*

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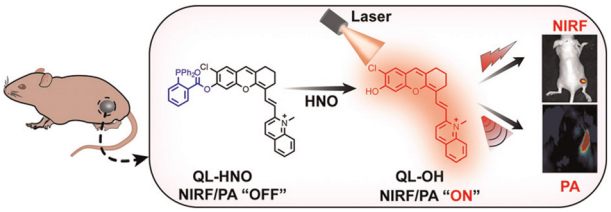
PAPERS

2299

An activatable fluorescent-photoacoustic dual-modal probe for highly sensitive imaging of nitroxyl *in vivo*

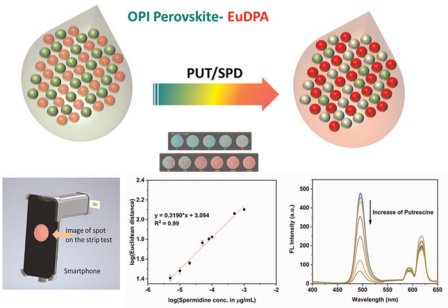
Fang-Yuan Qi, Lei Qiao, Lan Peng, Yu Yang, Chong-Hua Zhang* and Xianjun Liu*



2306

Smartphone-based paper strip assay for putrescine and spermidine detection using hybrid organic–inorganic perovskite with Eu^{3+} complex

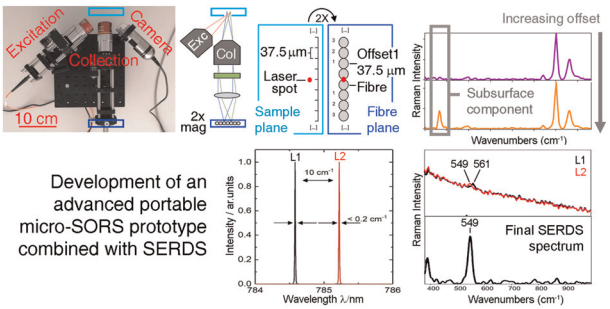
Thi Thuy Truong, Bui The Huy, Le Thi Cam Huong, Hai Bang Truong and Yong-Ill Lee*



2317

Advanced portable micro-SORS prototype coupled with SERDS for heritage science

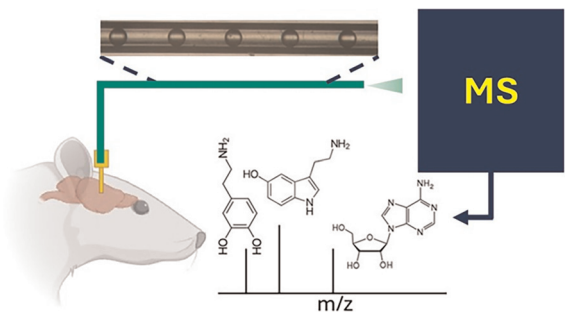
A. Lux,* M. Realini, A. Botteon, M. Maiwald, A. Müller, B. Sumpf, C. Miliani, P. Matousek, P. Strobbia* and C. Conti*



2328

Microdialysis coupled with droplet microfluidics and mass spectrometry for determination of neurotransmitters *in vivo* with high temporal resolution

Shane S. Wells, Ian J. Bain, Alec C. Valenta, Ashley E. Lenhart, Daniel J. Steyer and Robert T. Kennedy*



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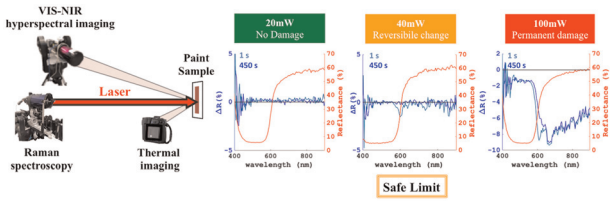
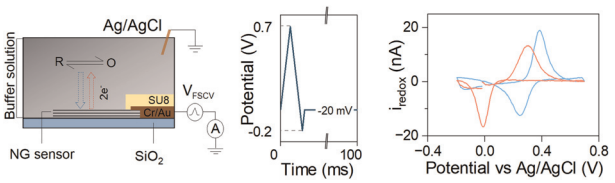
2338



Time and spatially resolved VIS-NIR hyperspectral imaging as a novel monitoring tool for laser-based spectroscopy to mitigate radiation damage on paintings

Amelia Suzuki, C. S. Cheung, Yu Li, Alexander Hogg, Patrick S. Atkinson, Cristiano Riminesi, Costanza Miliani and Haida Liang*

2351



Toward robust quantification of dopamine and serotonin in mixtures using nano-graphitic carbon sensors

Moeid Jamalzadeh, Edoardo Cuniberto, Zhujun Huang, Ryan M. Feeley, Jyoti C. Patel, Margaret E. Rice, Joline Uichanco and Davood Shahrjerdi

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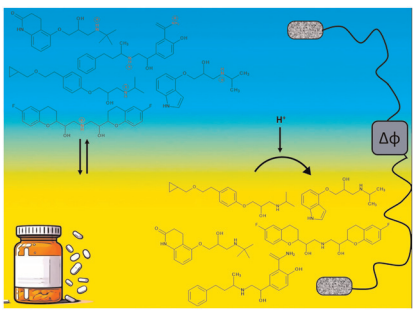
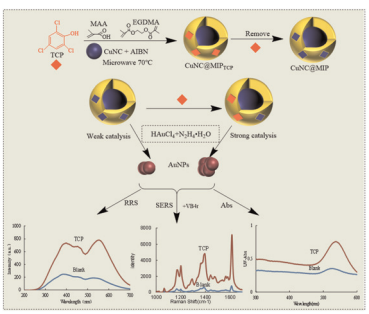


Electrochemical screening of selected β-blockers at a polarized liquid–liquid interface

Karolina Sobczak, Konrad Rudnicki* and Lukasz Poltorak*

2374



A new copper nanocluster surface molecular imprinted polymethacrylic acid probe for ultratrace trichlorophenol based on *in situ*-generated nanogold SPR effects

Li Lin, Aihui Liang, Guiqing Wen and Zhiliang Jiang*

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PAPERS

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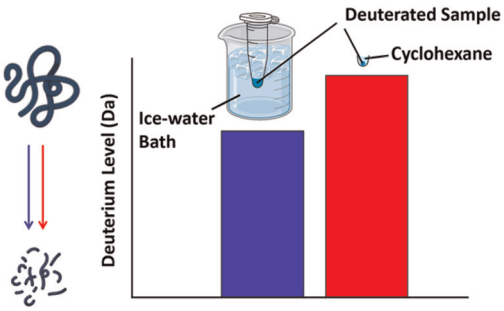
A millimeter water-in-oil droplet as an alternative back exchange prevention strategy for hydrogen/deuterium exchange mass spectrometry of peptides/proteins

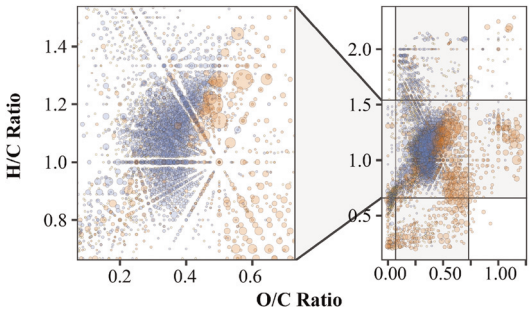
T.-Y. Lui, Xiangfeng Chen,* Simin Zhang, Danna Hu and T.-W. Dominic Chan*



2399

Utilising Fourier transform ion cyclotron resonance mass spectrometry (FT-ICR MS) to track the oxidation of lignin by an alkaliphilic laccase

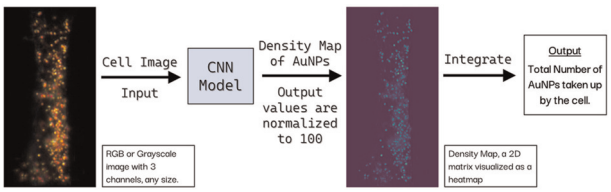
Zak Towle, Faye Cruickshank, C. Logan Mackay, David J. Clarke and Louise E. Horsfall*



2412

Label-free quantification of gold nanoparticles at the single-cell level using a multi-column convolutional neural network (MC-CNN)

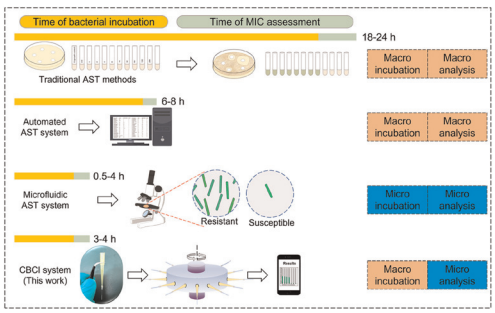
Abu S. M. Mohsin* and Shadab H. Choudhury



2420

A capillary-based centrifugal indicator equipped with *in situ* pathogenic bacteria culture for fast antimicrobial susceptibility testing

Longyu Chen, Meijia Zhu, Zhiyong Wang, Hongliang Wang, Yongqiang Cheng,* Ziwei Zhang, Xiaoxiao Qi, Yifan Shao, Xi Zhang and Hongwei Wang



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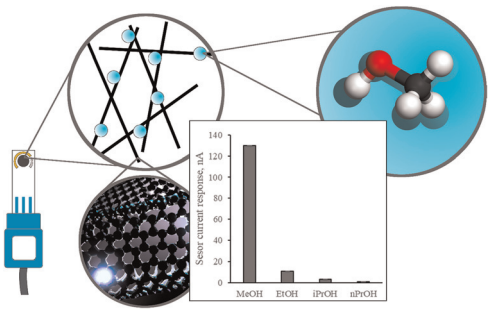
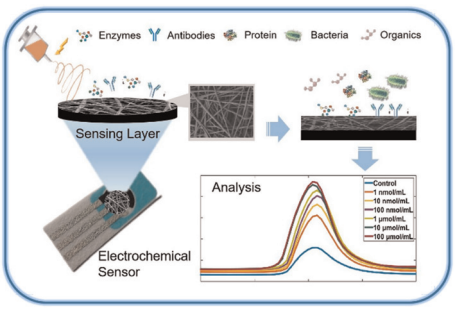


Molecularly imprinted polymer nanoparticle-carbon nanotube composite electrochemical gas sensor for highly selective and sensitive detection of methanol vapour

Todd Cowen,* Sotirios Grammatikos and Michael Cheffena

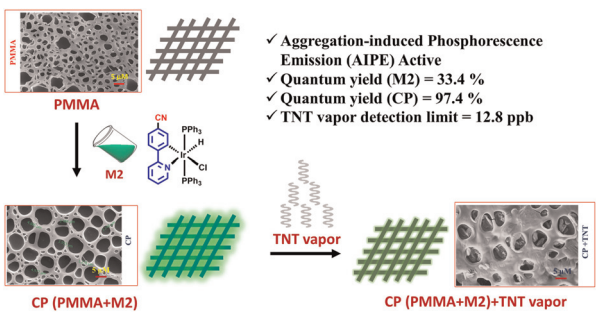
2436



A disposable paper-based electrochemical biosensor decorated by electrospun cellulose acetate nanofibers for highly sensitive bio-detection

Zhiwei Zhang, Manman Du, Xiao Cheng, Xuechen Dou, Junting Zhou, Jianguo Wu, Xinwu Xie* and Mengfu Zhu*

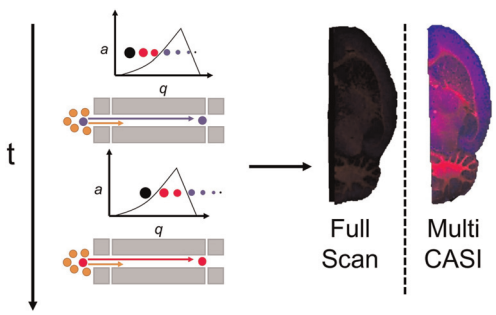
2445



Enhanced TNT vapor sensing through a PMMA-mediated AIPE-active monocyclometalated iridium(III) complex: a leap towards real-time monitoring

Ram Prasad Bhatta, Annu Agarwal, Vishal Kachwal, Pramod C. Raichure and Inamur Rahaman Laskar*

2459



Multiple ion isolation and accumulation events for selective chemical noise reduction and dynamic range enhancement in MALDI imaging mass spectrometry

Troy R. Scoggins, IV, Jonathan T. Specker and Boone M. Prentice*

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PAPERS

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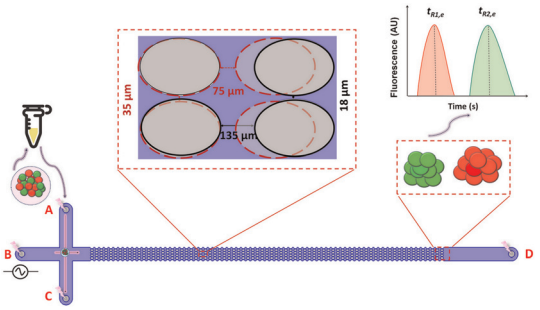
Manipulating the insulating post arrangement in DC-biased AC-iEK devices to improve microparticle separations

Nuzhet Nihaar Nasir Ahamed, Carlos A. Mendiola-Escobedo, Victor H. Perez-Gonzalez* and Blanca H. Lapizco-Encinas*



CORRECTIONS

2480

Correction: An optical sensor for the sensitive determination of formaldehyde gas based on chromotropic acid and 4-aminoazobenzene immobilized in a hydrophilic membrane

M. D. Fernández-Ramos,* A. Moraga-Cabezas, Antonio L. Medina-Castillo* and L. F. Capitán-Vallvey

2481

Correction: Diamond nanowires modified with poly[3-(pyrrolyl)carboxylic acid] for the immobilization of histidine-tagged peptides

Palaniappan Subramanian, Ievgen Mazurenko, Vladimir Zaitsev, Yannick Coffinier, Rabah Boukherroub and Sabine Szunerits*

2483

Correction: Inkjet-printed O_2 gas sensors in intelligent packaging

M. D. Fernández-Ramos,* M. Pageo-Cabrera, L. F. Capitán-Vallvey and I. M. Pérez de Vargas-Sansalvador