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Cover

See Dougal Ferguson, Peter Gardner *et al.*, pp. 1741–1753.

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Inside cover

See Gopal Buvaeswari, Annamalai Senthil Kumar *et al.*, pp. 1754–1767.

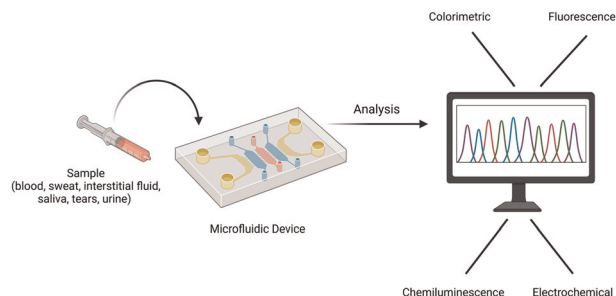
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TUTORIAL REVIEWS

1711

Advancements and innovations in liquid biopsy through microfluidic technology for cancer diagnosis

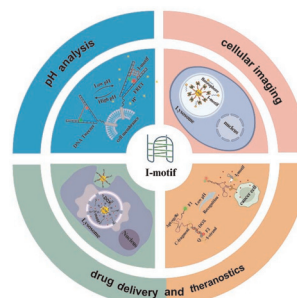
Osama H. Abusara,* Ahmed S. A. Ali Agha and Sanaa K. Bardaweel



1726

A controllable DNA: structural features and advanced applications of i-motif

Qiumei Pu, Xiangde Lai, Yanan Peng* and Qiang Wu*



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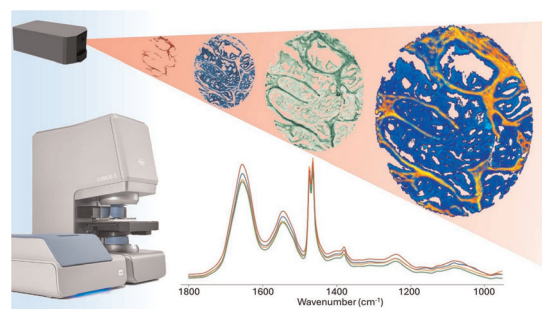
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1741

Full fingerprint hyperspectral imaging of prostate cancer tissue microarrays within clinical timeframes using quantum cascade laser microscopy

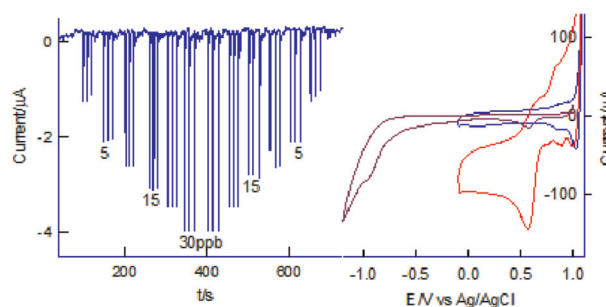
Dougal Ferguson,* Niels Kroeger-Lui, Domenic Dreisbach, Claire A. Hart, Diego F. Sanchez, Pedro Oliveira, Mick Brown, Noel Clarke, Ashwin Sachdeva and Peter Gardner*



1754

Ultrasensitive detection of carcinogenic chromium(vi) species below the WHO limit using a LaCeO₃/carbon black screen printed electrode in batch injection analysis

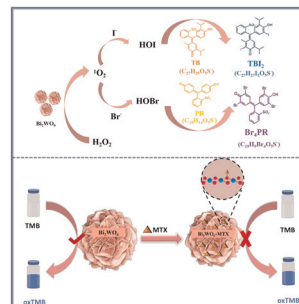
Senthurvelan Saranya, Yesudas K. Yashly, R. G. Stacey Sibiya, Gopal Buvaeswari* and Annamalai Senthil Kumar*



1768

Colorimetric detection of methotrexate leveraging the halogen peroxidase-mimicking activity of Bi₂WO₆ nanoflowers

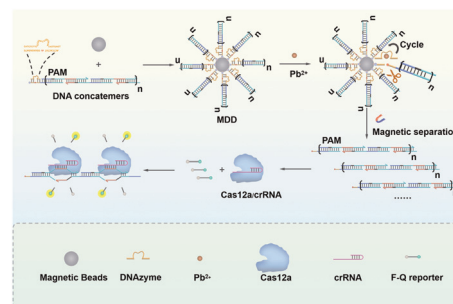
Xueting Wang, Xiaorong Sun, Zhongfang Hu and Guang-Li Wang*



1778

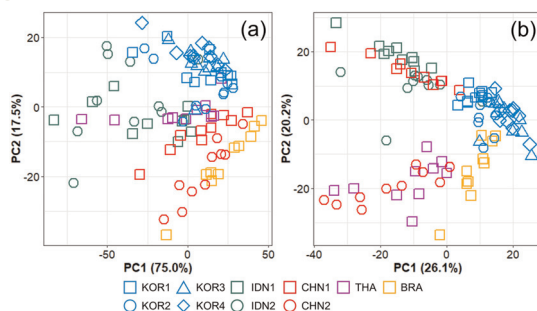
A DNA concatemer-encoded CRISPR/Cas12a fluorescence sensor for sensitive detection of Pb²⁺ based on DNazymes

Shaoying He, Wei Lin, Xin Liu, Fei Li, Hong Liang, Huo Xu,* Chunhua Lu* and Chao Xing*



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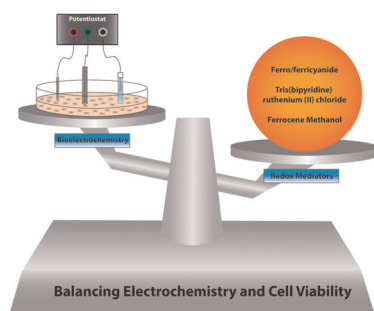
1785



Raman spectroscopy and machine learning for forensic document examination

Yong Ju Lee, Chang Woo Jeong, Hong Taek Kim, Tai-Ju Lee and Hyoung Jin Kim*

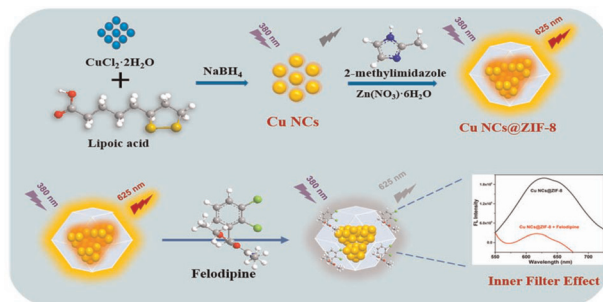
1795



The impact of common redox mediators on cellular health: a comprehensive study

Samuel P. Nortz, Vanshika Gupta and Jeffrey E. Dick*

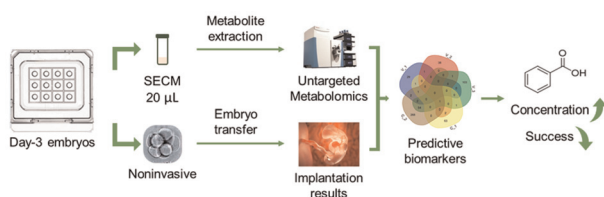
1807



Encapsulating Cu NCs with aggregation-induced emission into metal–organic framework ZIF-8 as a novel fluorescent nanoprobe for the highly sensitive detection of felodipine

Juan Du, Huixiao Tong, Jinwen Chen, Qikun Zhang and Shenghua Liao*

1816



LC-MS-based untargeted metabolomics reveals benzoic acid as a predictive biomarker for embryo implantation potential

Xi Chen, Ying Liu, Sheng-Nan Duan, Ping Wang, Yu-Nan Chen, Min Fu, Rong Liang, Xin-Xiang Zhang, Huan Shen, Ying-Lin Zhou* and Cheng Shi*

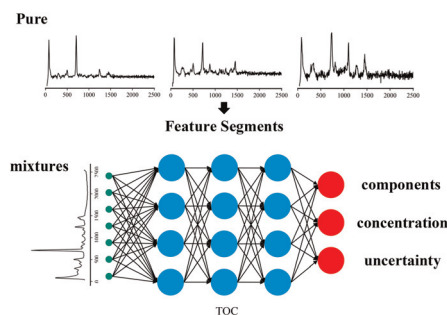


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1823

A Raman spectroscopy algorithm based on convolutional neural networks and multilayer perceptrons: qualitative and quantitative analyses of chemical warfare agent simulants

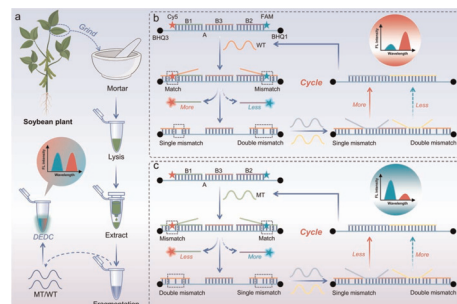
Jie Wu, Fei Li, Jing-Wen Zhou, Hongmei Li, Zilong Wang, Xian-Ming Guo, Yue-Jiao Zhang, Lin Zhang,* Pei Liang,* Shisheng Zheng* and Jian-Feng Li*



1837

A dual-trigger entropy driven circuit based on competitive hybridization for highly specific enzyme-free detection of single nucleotide polymorphisms

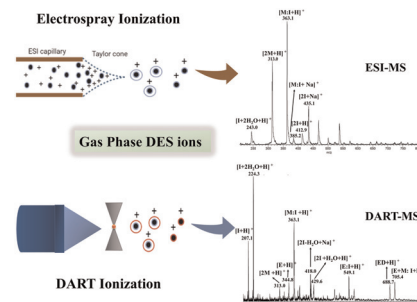
Sisi Bu, Fang Yang, Tuo Huang, Qianglong Tan, Siyu Yu, Shufen Xiao, Ye Hu, Wenlin Xie,* Zhihua Zhou,* Yulan Tian* and Jian Chen*



1846

Elucidating gas phase microstructures of therapeutic deep eutectic systems

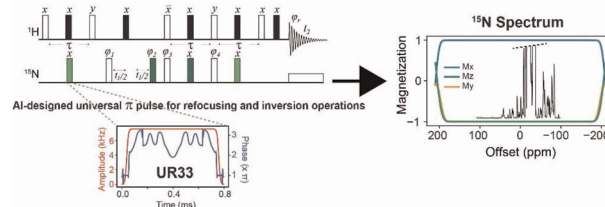
Oluseyi Olawuyi, James Stewart, Md. Minhas Hossain Sakib, William Bryant, Mary-Kate Wewers, Noam Lewit, Md. Ackas Ali, Md. Sajjadur Rahman and Mohammad A. Halim*



1856

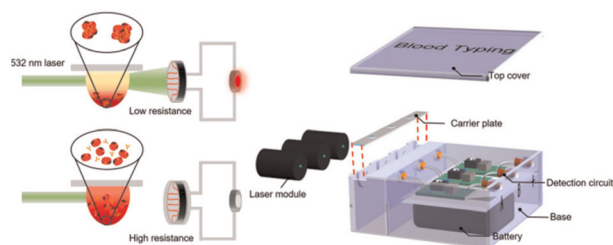
Detection of ¹⁵N-labeled metabolites in microbial extracts using AI-designed broadband pulses for ¹H, ¹⁵N heteronuclear NMR spectroscopy

Manu V.S., Marco Tonelli, Bailey Bell, Alok K. Sharma, Tim S. Bugni and Gianluigi Veglia*



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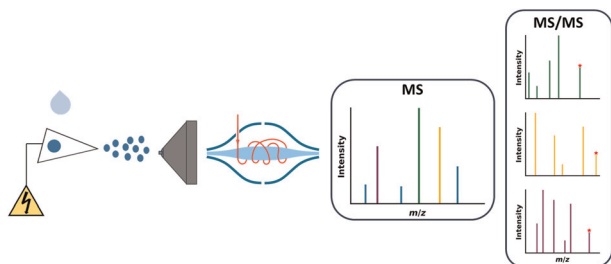
1862



Rapid and reliable POCT blood typing based on a laser identified RBC agglutination method

Bing Xu,* Yange Huang, Shuqiang Min, Xianchang Wu, Tonghuan Zhan, Jiahao Liu, Fuzhou Niu* and Hui Niu*

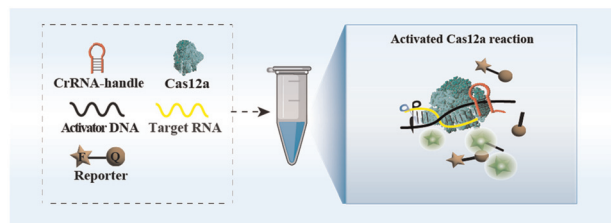
1872



Development of a high-resolution paper-spray mass spectrometry method using street drugs for the early detection of emerging drugs in the unregulated supply

Allie Miskulin, Bruce Wallace, Dennis K. Hore* and Chris Gill*

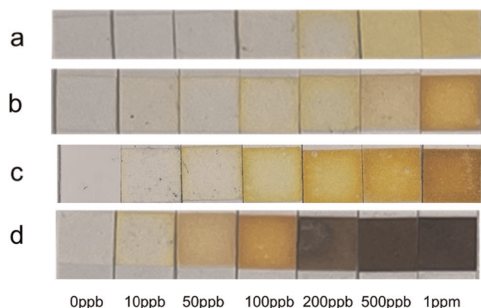
1884



CRISPR–Cas12a with split crRNA for the direct and sensitive detection of microRNA

Sijia Yang, Lei Ren, Ningke Fan, Shuhao Wang, Bo Shen, Zhongmei Liu, Xinmin Li* and Shijia Ding*

1891



A paper-based visual colorimetric platform for rapid detection of arsenic in the environment

Zhiqiang Wang, Feng He, Xinxin Xu, Hua Kuang* and Chuanlai Xu*

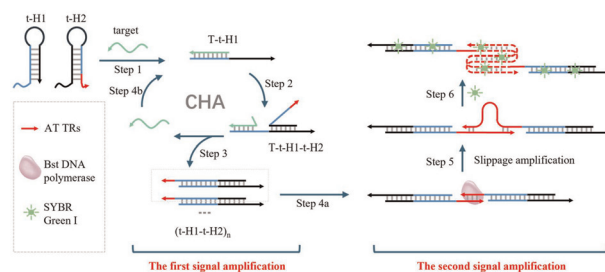


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1899

A catalytic hairpin assembly system with sliding replication for the detection of piRNAs

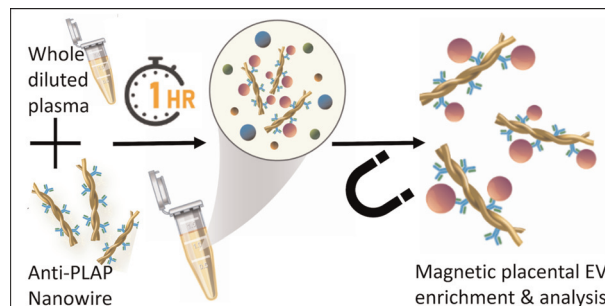
Hui Yang, Feng Gong, Chengjiao Yao, Jiao Cheng, Shuang He, Yijie Jia, Yuxiang Zhang, Qiang Ma, Xiaolan Guo,* Hongfei He* and Xiaowu Zhong*



1908

Affinity enrichment of placental extracellular vesicles from minimally processed maternal plasma with magnetic nanowires

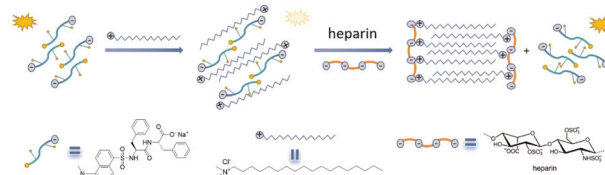
Quang Nghia Pham, Valentina Milanova, Tran Thanh Tung, Dusan Losic, Benjamin Thierry* and Marnie A. Winter*



1920

Sensitive fluorescence detection of heparin based on the assembly of a cationic surfactant and an anionic dye

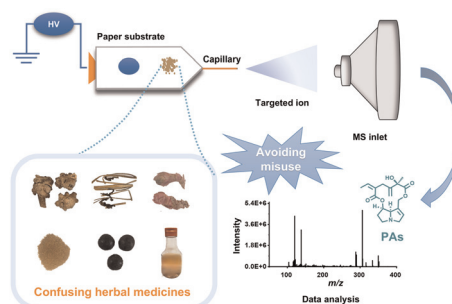
Yu Liu, Gongli Wei, Yutian Jiao, Baocai Xu and Li Zhao*



1929

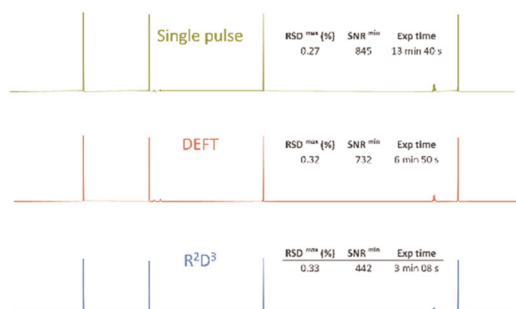
Rapid on-site identification of pyrrolizidine alkaloids in herbal medicines using miniature mass spectrometry

Xiyue Yang, Xingyu Wang, Yilin Chen, Ziyang Wang, Dan Zhang, Nan Wang, Zhengtao Wang, Aizhen Xiong,* Linnan Li* and Li Yang*



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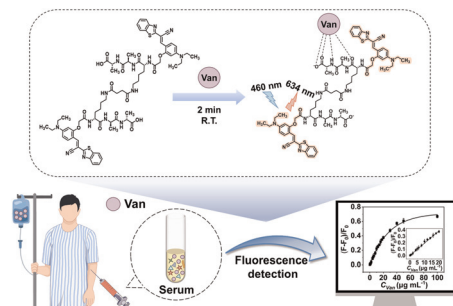
1939



The R²D³ approach towards fast quantitative NMR: maintaining accuracy and reducing the experimental time

Margot Sanchez,* Thomas Paris, Anthony Martinez, Gaëtan Assemat and Serge Akoka

1952



Rapid and sensitive determination of vancomycin using an AIE-active fluorescent probe for clinical monitoring

Yige Lin, Yujie Wang, Fang Fan* and Guoyue Shi*

