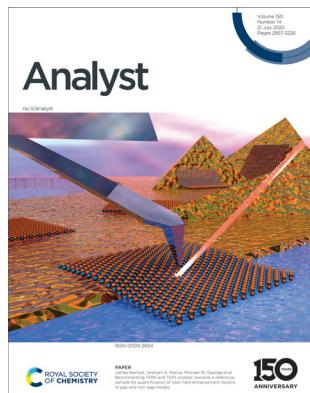


## IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 150(14) 2957-3226 (2025)



Cover

See James Kerfoot,  
Graham A. Rance,  
Michael W. George *et al.*,  
pp. 3077–3088.

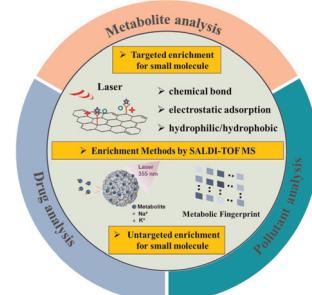
Image reproduced by permission of James Kerfoot and Graham Rance from *Analyst*, 2025, **150**, 3077.

## MINIREVIEWS

2966

# Recent advances in sample preparation for analysis of small molecules with surface-assisted laser desorption/ionization time-of-flight mass spectrometry: enrichment methods and applications

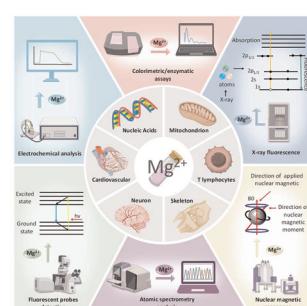
Mingyuan Liu, Tianyu Hua, Yihan Zhang, Zifang Peng, Dan Yin, Wenfen Zhang, Yanhao Zhang, Congcong Pei\* and Shusheng Zhang\*



2979

## Biological functions and detection strategies of magnesium ions: from basic necessity to precise analysis

Tianwei Liu, Lan Wang, Siying Pei, Shuo Yang, Jiayi Wu, Wei Liu\* and Qiong Wu\*



# EES Batteries

**Exceptional research on  
batteries and energy storage**

**Part of the EES family**

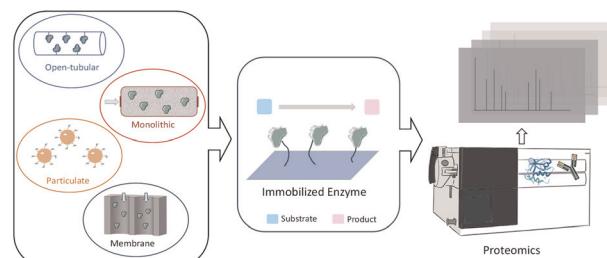
**Join  
in** | Publish with us  
[rsc.li/EESBatteries](http://rsc.li/EESBatteries)

## CRITICAL REVIEWS

3000

**Micro-immobilized enzyme reactors for mass spectrometry proteomics**

Zhongjie Yao, Yilan Li\* and Wei Xu\*



3011

**Metal–organic framework-based nanozymes: types, activity regulation and analytical applications**

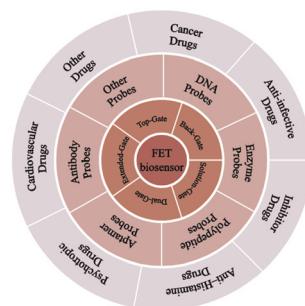
Mingyue Xie,\* Shidun Chen, Ke Chen, Qinghuan Gao, Jiake Li, Yiyang Hao and Xingyue Lu



3026

**Recent advances in field effect transistor biosensors for drug screening applications**

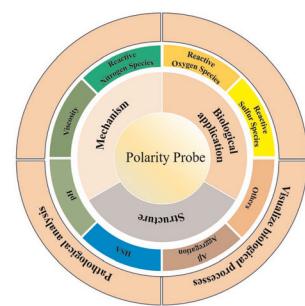
Lemeng Chao,\* Ying Liang and Xiao Hu



3045

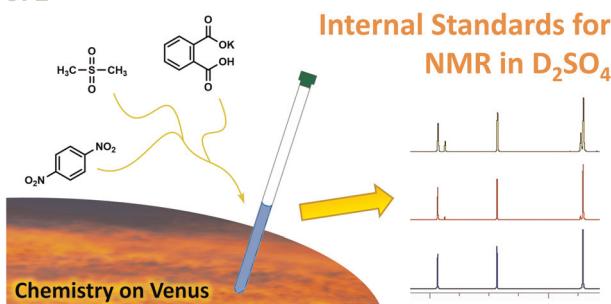
**Recent progress of dual-responsive fluorescent probes for polarity and analytes**

Junru He, Xuwei Han and Yongkang Yue\*



## COMMUNICATION

3071

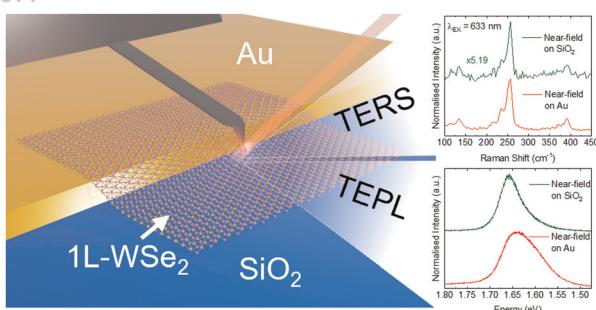


**Internal standards for  $^1H$  NMR spectroscopy in concentrated sulfuric acid**

Desmond B. Ofosu, Robert Z. Mendoza and Paul J. Bracher\*

## PAPERS

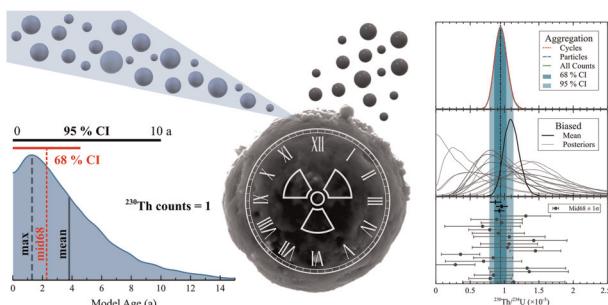
3077



**Benchmarking TERS and TEPL probes: towards a reference sample for quantification of near-field enhancement factors in gap and non-gap modes**

James Kerfoot,\* Elizabeth J. Legge, Amy Collins, Jasbinder Chauhan, Kai Rossnagel, Peter H. Beton, Christopher J. Mellor, Andrew J. Pollard, Graham A. Rance\* and Michael W. George\*

3089



**Uranium particle age dating, aggregation, and model age best estimators**

Evan E. Groopman,\* Todd L. Williamson, Timothy R. Pope, Michael G. Bronikowski, Spencer M. Scott and Matthew S. Wellons

3112



**PyFasma: an open-source, modular Python package for preprocessing and multivariate analysis of Raman spectroscopy data**

Eleftherios Pavlou and Nikolaos Kourkoumelis\*

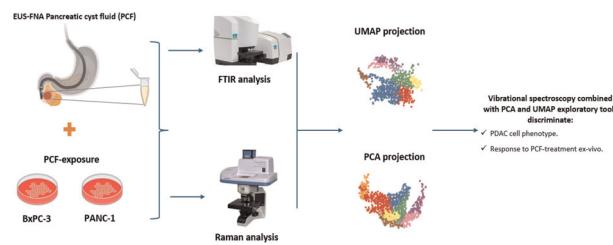


## PAPERS

3123

**Ex vivo spectroscopic characterisation of the biological activity of pancreatic cyst fluid**

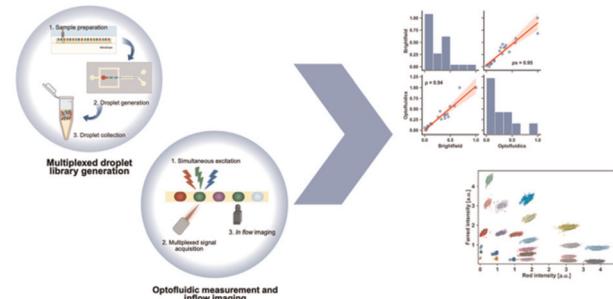
Outmane Bouzerda, Laura E. Kane, Gregory S. Mellotte, Barbara M. Ryan, Stephen G. Maher, Olivier Piot and Aidan D. Meade\*



3137

**Advancing droplet-based microbiological assays: optofluidic detection meets multiplexed droplet generation**

Ashkan Samimi, Sundar Hengoju, Karin Martin and Miriam A. Rosenbaum\*



3147

**Utilising highly conductive TPU "sticks" for facile and low-cost electroanalysis**

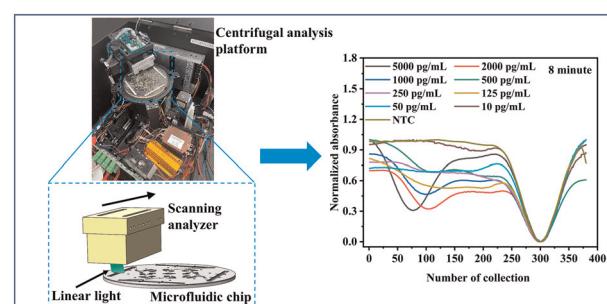
Ana C. M. Oliveira, Elena Bernalte, Robert D. Crapnell, Rodrigo A. A. Muñoz and Craig E. Banks\*



3158

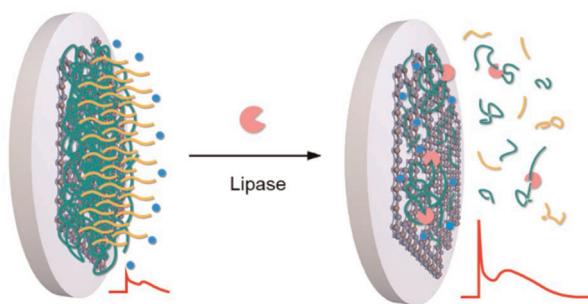
**A centrifugal microfluidic chip with its companion device for automatic point-of-care nanzyme ELISA lateral flow immunoassay based on optoelectronic sensing**

Ming Liu, Lei Wang, Jiaxi Zhou, Guijun Miao, Lulu Zhang, Lizeng Gao\* and Xianbo Qiu\*



## PAPERS

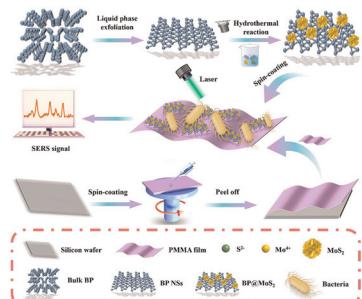
3170



### Film-permeability-triggered afterglow electrochemiluminescence for lipase detection

Liyuan Peng, Yunwei Zheng, Hongsheng Hang, Yuting Zhong, Xiaomeng Zheng, Peng He, Jiahui Zhang and Lichan Chen\*

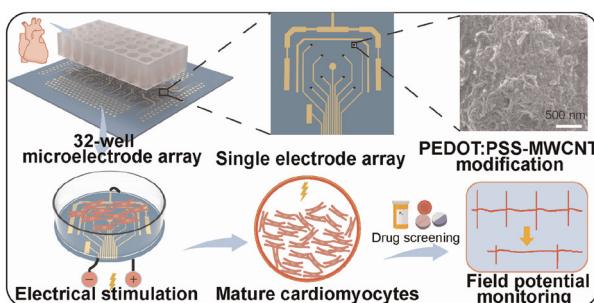
3177



### Label-free SERS detection of foodborne pathogens based on a flexible PMMA-BP@MoS<sub>2</sub> binary substrate

Xiaohan Liu, Shijiao Fu, Jialong Zhao, Chenjie Gu, Danting Yang and Tao Jiang\*

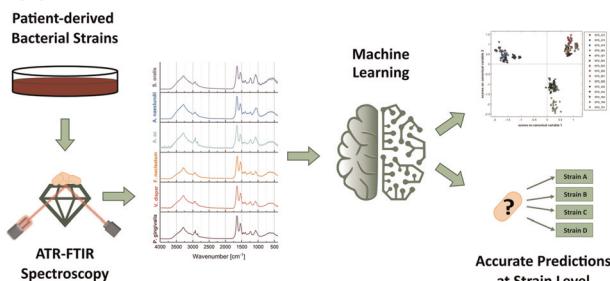
3188



### A PEDOT:PSS-MWCNT-modified MEA platform with integrated electrical stimulation for enhanced maturation and drug screening of iPSC-cardiomyocytes

Zhixiang Liang, Huimin Li, Junlei Han, Jun Chen, Jiemeng Ding, Wenteng Tang, Minghui Wang, Qi Meng, Lei Zhang, Zetao Zhang and Li Wang\*

3198



### Differentiation and identification of commensal and pathogenic oral bacteria at strain level using ATR-FTIR spectroscopy

Katharina Anna Frings,\* Rumjhun Mukherjee, Vivien Schulze, Nils Heine, Nicolas Debener, Janina Bahnemann, Szymon Piotr Szafrański, Meike Stiesch, Katharina Doll-Nikutta,\* Maria Leilani Torres-Mapa\* and Alexander Heisterkamp



## PAPERS

3208

**An indolizine-derived chemodosimeter with enhanced emission in a micellar environment for ppb-level detection of mercury ions**

Amanda Ana Pinheiro, Ankit Thakuri, Soumik Saha, Mainak Banerjee\* and Amrita Chatterjee\*



3217

**Rapid detection of capsaicinoids via a Bi<sub>2</sub>S<sub>3</sub>/rGO/MWCNT-COOH-modified screen-printed electrode coupled with glass bead-assisted ultrasonic extraction**

Jie Jiang, Xuening Wang, Kai Yu,\* Zhiping Sun, Qianyun Yu and Yang Chen

