# **Analyst**

# rsc.li/analyst

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

#### IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 149(21) 5147-5362 (2024)



#### Cover

See Emily Dominique and Christophe Renault, pp. 5165-5173.

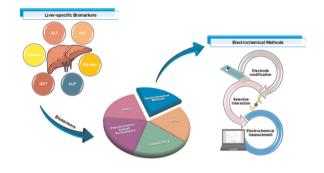
Image reproduced by permission of Christophe Renault and Emily Dominique from Analyst, 2024, 149, 5165. Image partly generated using BRIA AI.

#### **MINIREVIEW**

#### 5156

Current trends in electrochemical approaches for liver biomarker detection: a mini-review

Derya Yaman,\* Melanie Jimenez, Sofia Ferreira Gonzalez and Damion Corrigan\*

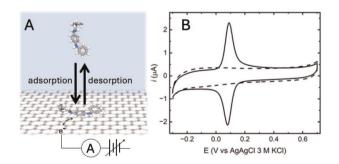


# **PAPERS**

#### 5165

Towards the rational design of N-(1,3-dimethylbutyl)-N'-phenyl-1,4benzenediamine (6PPD) electrochemical sensor

Emily Dominique and Christophe Renault\*





# Royal Society of Chemistry approved training courses

Explore your options.

Develop your skills.

Discover learning
that suits you.

Courses in the classroom, the lab, or online

Find something for every stage of your professional development. Search our database by:

- subject area
- location
- event type
- skill level

Members get at least 10% off

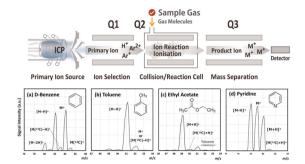
Visit rsc.li/cpd-training



#### 5174

Detection of several volatile organic compounds through Ar<sup>+</sup> induced chemical ionisation using inductively coupled plasma-tandem mass spectrometry (ICP-MS/MS)

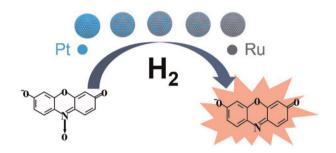
Takafumi Hirata,\* Kyoko Kobayashi, Hui Hsin Khoo, Osamu Shikino and Hisashi Asanuma



#### 5184

Revealing the heterogeneous catalytic kinetics of PtRu nanocatalysts at the single particle level

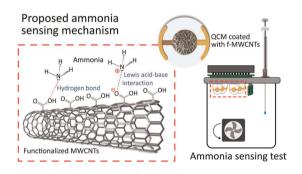
Bowei Zhang, Dezheng Zhang, Jinpeng Bao, Ce Han,\* Ping Song\* and Weilin Xu\*



#### 5191

An ultra-sensitive ammonia sensor based on a quartz crystal microbalance using nanofibers overlaid with carboxylic group-functionalized **MWCNTs** 

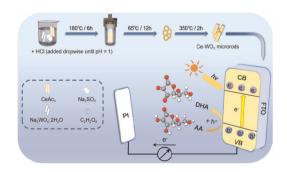
Ahmad Hasan As'ari, Rizky Aflaha, Laila Katriani, Ahmad Kusumaatmaja, Iman Santoso, Rike Yudianti\* and Kuwat Triyana\*



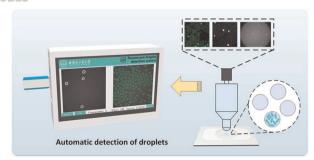
#### 5206

A cerium-doped tungsten trioxide-functionalized sensing platform for photoelectrochemical detection of ascorbic acid with high sensitivity

Xueying Zhu, Tikai Liang and Dianping Tang\*



#### 5213

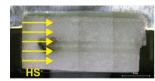


# Automatic detection of fluorescent droplets for droplet digital PCR: a device capable of processing multiple microscope images

Kaihao Mao, Ye Tao,\* Wenshang Guo, Qisheng Yang, Meiying Zhao, Xiangyu Meng, Yinghao Zhang and Yukun Ren\*

5225

#### KCI SSRE



Sulphide poisons Ag|AgCl electrode

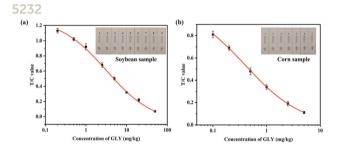
# KCI/AgCI SSRE



Sulphide captured, Ag|AgCl uncontaminated

# A sulphide resistant Ag|AgCl reference electrode for long-term monitoring

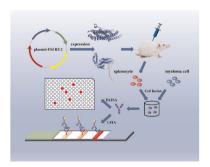
David S. Macedo,\* Mikko Vepsäläinen,\* Theo Rodopoulos, Stephen Peacock and Conor F. Hogan



# A lateral strip assay for ultrasensitive detection of glyphosate in soybeans and corn

Xuyang Ma, Liqiang Liu, Shanshan Song, Hua Kuang, Chuanlai Xu and Xinxin Xu\*

5243



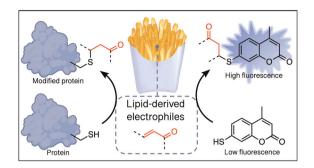
# A rapid and ultrasensitive paper sensor for Bacillus cereus Haemolysin BL detection

Chunhao Wei, Xinxin Xu, Lingling Guo,\* Aihua Qu, Aihong Wu, Chuanlai Xu\* and Hua Kuang

#### 5255

# Fluorescent probe to quantify lipid-derived electrophiles in edible oils

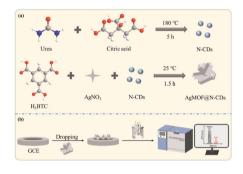
Lucille Kuster, Priscilia Diane Mamboundou, Asma Boushih, Yasmine Rassi, Alexandre Benoît, Samuel Parent-Vézina, Michel Lord-St-Vincent, Jean-Philippe Guillemette and Mathieu Frenette\*



#### 5265

# A novel electrochemiluminescent sensor based on AgMOF@N-CD composites for sensitive detection of trilobatin

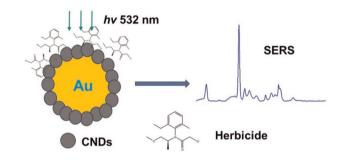
Longmei Yao, Xue Mei, Jiajia Zhi, Wenchang Wang,\* Qingyi Li, Ding Jiang, Xiaohui Chen and Zhidong Chen\*



#### 5277

# Surface-enhanced Raman scattering enhancement using a hybrid gold nanoparticles@carbon nanodot substrate for herbicide detection

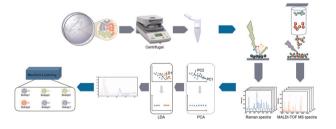
Naghmeh Aboualigaledari, Anitha Jayapalan, Panesun Tukur, Mengxin Liu, Frank Tukur, Yanling Zhang, Gerald Ducatte, Madan Verma, Janet Tarus, Simona E. Hunyadi Murph\* and Jianjun Wei\*



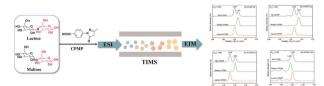
#### 5287

# A new fusion strategy for rapid strain differentiation based on MALDI-TOF MS and Raman spectra

Jian Song, Wenlong Liang, Hongtao Huang, Hongyan Jia, Shouning Yang, Chunlei Wang\* and Huayan Yang\*



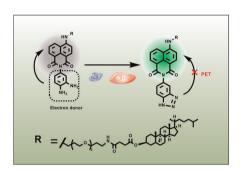
#### 5298



Rapid quantification of disaccharide isomers by derivatization in combination with ion mobility spectrometry in beer and milk

Keqi Ye, Jiacheng Ye,\* Yinghua Yan\* and Chuan-Fan Ding\*

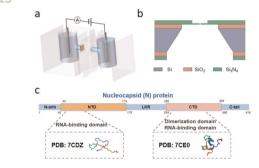
#### 5306



Engineering fluorescent NO probes for live-monitoring cellular inflammation and apoptosis

Qun Wu, Chengbin Liu, Yifan Liu and Tao Li\*

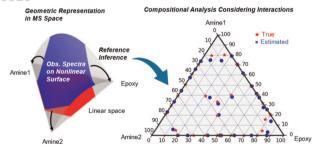
#### 5313



Utilizing solid-state nanopore sensing for high-efficiency and precise targeted localization in antiviral drug development

Wei Xu, Lichun Zou, Haiyan Wang, Changhui Xu, Qinyang Fan and Jingjie Sha\*

#### 5320



Reference-free quantitative mass spectrometry in the presence of nonlinear distortion caused by in situ chemical reactions among constituents

Yusuke Hibi

#### 5329

# Analysis of blue and green REACH compliant tattoo inks

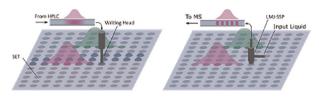
Kelli Moseman, Sasha Noble, Sage Sanders, Huiyuan Guo and John R. Swierk\*



#### 5336

Storing liquid chromatographic separations on surface energy traps: decoupling the LC and the mass spectrometer

Timothy T. Salomons, David Simon and Richard Oleschuk\*



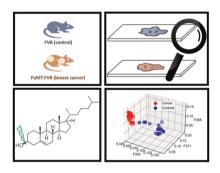
Writing a Chromatogram

Reading a Chromatogram

#### 5344

# Alterations of the chemical profile of cholesterol in cancer tissue as traced with ToF-SIMS

Auraya Manaprasertsak, Julhash U. Kazi, Catharina Hagerling, Kenneth J. Pienta, Per Malmberg and Emma U. Hammarlund\*



#### 5353

A highly sensitive and reproducible fluorescence sensor for continuously measuring hydrogen peroxide at the sub-ppm level

Yang Yang, Rui Jiang, En-lai Yang, Jiahao Liang, Ying Xu and Xu-dong Wang\*

