

# 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 150(23) 5115–5364 (2025)



### Cover

See Johannes Walter *et al.*, pp. 5147–5165.

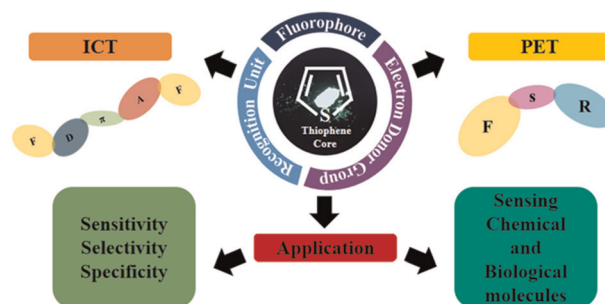
Image reproduced by permission of Christina Spruck from *Analyst*, 2025, **150**, 5147.

## CRITICAL REVIEW

5124

### An overview of utilising photo-tunable thiophene scaffolds as luminogens for chemical and biological sensing: progress and prospects

Aakash Venkatesan, Anila Rose Cherian and Aatika Nizam\*



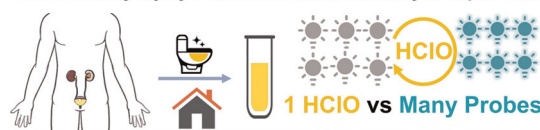
## COMMUNICATION

5142

### Hypochlorite-activated analyte-replacement fluorogenic probes for minute-level fast detection of acute kidney injury

Tingfei Xie, Jiahui Chen, Xiaolu Sui, Yanzi Zhang, Jiqiang Liu, Jinxin Zhang, Xuechuan Hong, Daoyong Jiang,\* Pengfei Zhang\* and Jihong Chen\*

#### Acute Kidney Injury Detection Based on Analyte Replacement



	Traditional	VS	This work
Location:	✗ Hospital		✓ Home
Time:	✗ ~ hours		✓ ~ Minutes
Sample:	✗ Blood		✓ Urine
Method:	✗ Equipment		✓ Camera

# RSC Applied Interfaces

GOLD  
OPEN  
ACCESS

**Interfacial and surface research  
with an applied focus**

**Interdisciplinary and open access**

**[rsc.li/RSCApplInter](https://rsc.li/RSCApplInter)**

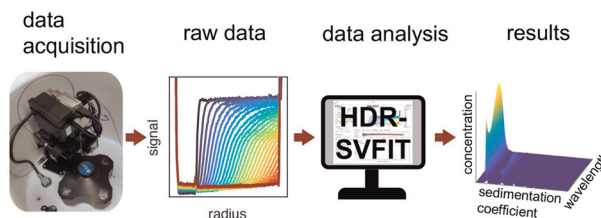
**Fundamental questions  
Elemental answers**

## PAPERS

5147

# Global analysis of sedimentation velocity data sets from multiwavelength analytical ultracentrifugation experiments using enhanced regularisation techniques

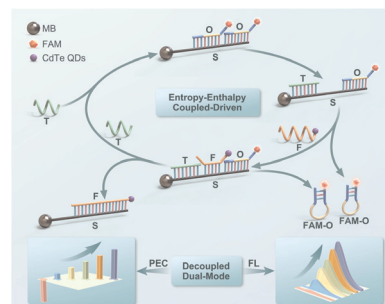
Christina Spruck, Lukas Pflug and Johannes Walter\*



5166

# An entropy–enthalpy co-driven independent dual-mode biosensor

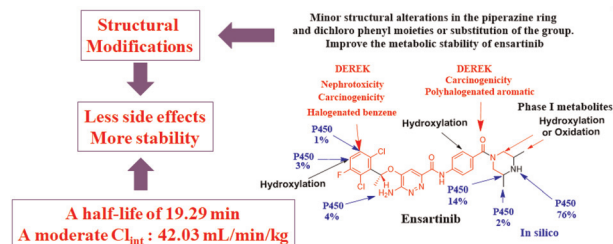
Xu-Fei Sun, Yuqi Luo, Xunan Dong, Hu Luo\* and Ke-Jing Huang\*



5174

# Development and validation of a quick and sensitive UPLC-MS/MS method for measuring ensartinib in HLMs: investigation of structural alerts associated with metabolic lability and *in silico* toxicity

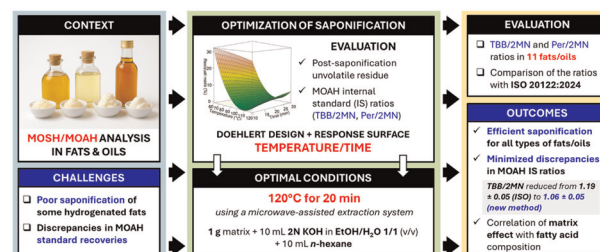
Mohamed W. Attwa,\* Ali S. Abdelhameed, Awadh M. Ali, Haitham AlRabiah and Adnan A. Kadi



5190

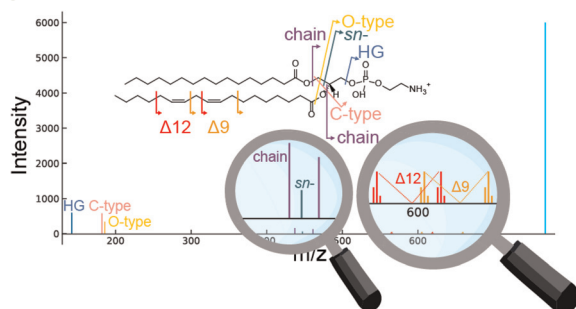
# Update on the microwave-assisted saponification conditions for mineral oil hydrocarbons determination in fats and oils

Aleksandra Gorska, Donatella Ferrara, Paula Albendea, Chiara Emilia Cordero and Giorgia Purcaro\*



## PAPERS

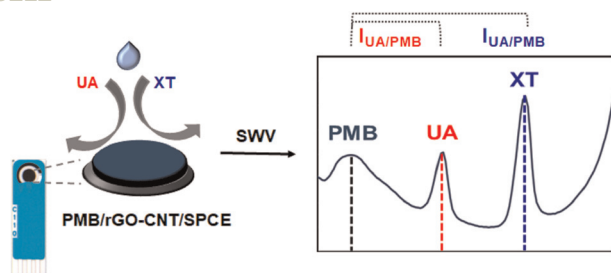
5201



### Optimisation of electron-induced dissociation parameters for molecular annotation of glycerides and phospholipids in fast LC-MS

Vincen Wu, Abraham Moyal, Alaa Othman and Nicola Zamboni\*

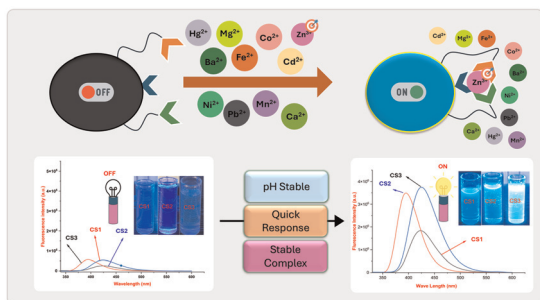
5212



### Ratiometric and simultaneous electrochemical analysis of uric acid and xanthine using poly(methylene blue) and reduced graphene oxide nanocomposite-modified screen-printed electrode

Geun Dae Kim, Sang Hyun Cho and Gi-Ja Lee\*

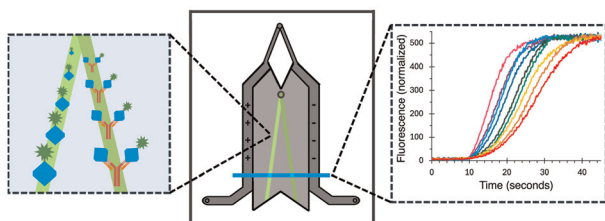
5223



### β-Carboline platform-based novel fluorescent probes for the selective detection of zinc ions: synthesis, live-cell imaging and computational studies

Muhammad Ashraf, Mochamad Lutfi Firmansyah, Safwat Abdel-Azeim, Raden J. K. Susilo, Suhailah Hayaza and Nisar Ullah\*

5236



### Identifying and minimizing primary sources of temporal broadening in online affinity micro free-flow electrophoresis

Gretchen S. Burke and Michael T. Bowser\*



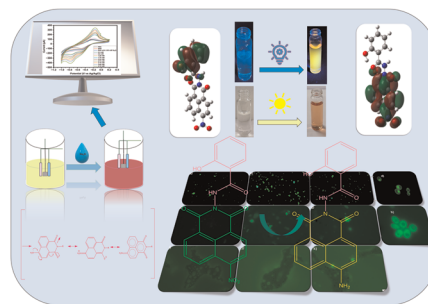


## PAPERS

5245

### A multifunctional probe for optical and electrochemical detection of hydrogen sulfide and real-time selective fungal imaging

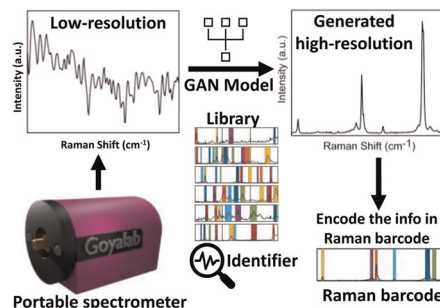
Ranjana M., Namita N. Kashyap, Dhanya Sunil,\*  
Anshuman Bera, Prajoy Kumar Mitra, Prakash Peralam  
Yegneswaran, Sudhakar Y. N., Dinesh Upadhyay,  
Suresh D. Kulkarni and Sivaranjana Reddy Vennapusa



5262

### Generative Adversarial Network-driven high-resolution Raman spectral generation for accurate molecular feature recognition

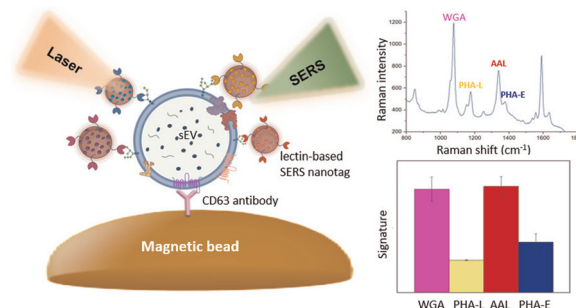
Vikas Yadav, Abhay Kumar Tiwari and  
Soumik Siddhanta\*



5274

### Lectin-enabled glycan signature of small extracellular vesicles by surface-enhanced Raman spectroscopy

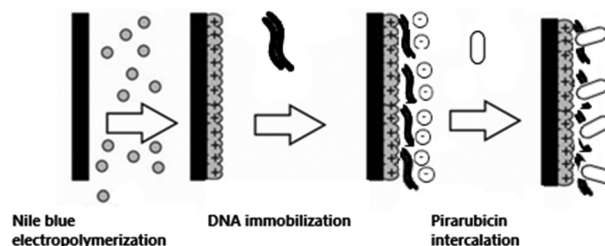
Wei Zhang, Edward S. X. Moh, Mingkai Wu,  
Nicolle H. Packer and Yuling Wang\*



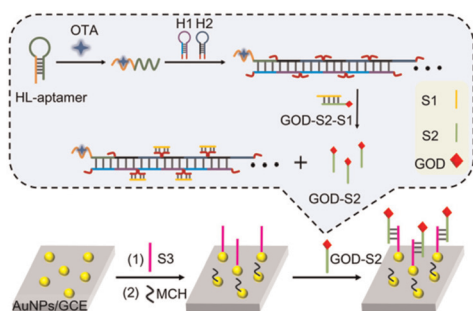
5286

### Pirarubicin determination with impedimetric and voltammetric DNA sensors based on poly(Nile Blue) electropolymerized from deep eutectic solvents

Kadriya Vakhidova, Anastasia Goida, Tatiana Krasnova,  
Rezeda Shamagsumova, Vladimir Evtugyn and  
Anna Porfireva\*



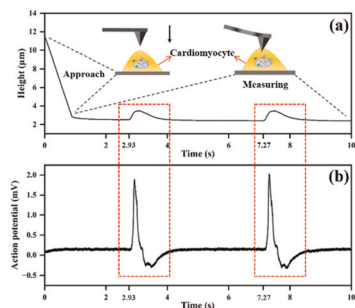
5303



### Coupling a target-triggered hybridization chain reaction to a glucose/oxygen biofuel cell for sensitive self-powered detection of ochratoxin A

Shihan Liu, Shihua Wang, Wenfang Deng,\*  
Qingfang Zhang\* and Yueming Tan\*

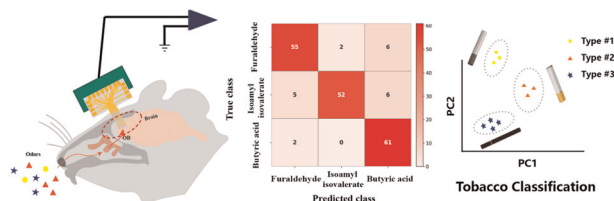
5309



### Effect of AFM-based electrical stimulation on the electrophysiological and mechanical characteristics of cardiomyocytes

Jianjun Dong, Bowei Wang, Jinhong Fu, Yan Li,  
Tianzhu Yu, Xia Wang, Fengyan Hou, Junxi Wang and  
Zuobin Wang\*

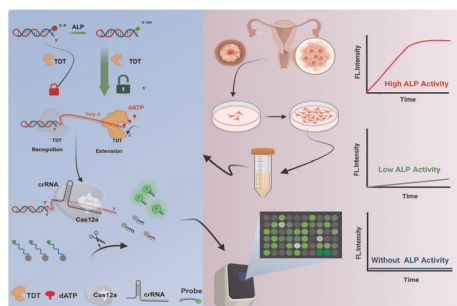
5320



### A bioelectronic nose with a flexible and implantable neural interface for odor detection and tobacco evaluation

Fan Wu, Jiale Wang, Wei Zhang, Yajie Zhang,  
Haoting Zhang, Zhichao Huang, Qifei Wang, Hao Wan,\*  
Ping Wang,\* Qunchen Yuan\* and Liujing Zhuang\*

5330



### TdT/Cas12a cascade amplification biosensor for sensitive ALP activity detection

Chengbin Pei, Bei Yan,\* Yan Wang, Ting Chen,  
Kunhao Du, Lianghong Ma\* and Juan Wang\*



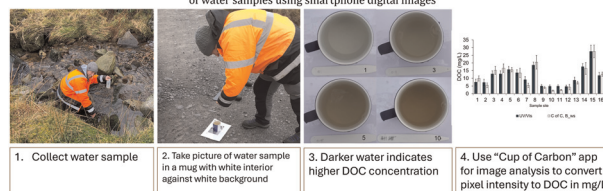
5338

## Cup of Carbon: smartphone-based analysis of dissolved organic carbon in water for use in citizen science

Michael R. Muir,\* Adrian M. Bass, Kenny Galt, Kerry Morrison, Lewis Robertson and Emily Taylor

### Cup of Carbon

Estimation of the Dissolved Organic Carbon (DOC) concentration of water samples using smartphone digital images



5351

## Ratiometric detection of human serum albumin using an aggregation-induced enhanced emission-conjugated polyelectrolyte and a prototype smartphone device

Moirangthem Anita Chanu, Dheeraj Dineshbhai Khubchandani, Laxmi Raman Adil, Priyam Ghosh and Parameswar Krishnan Iyer\*

