

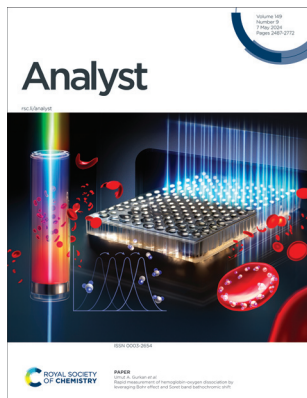
# Analyst

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## IN THIS ISSUE

ISSN 0003-2654 CODEN ANALAO 149(9) 2487-2772 (2024)



### Cover

See Umut A. Gurkan *et al.*, pp. 2561–2572.

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### Inside cover

See Jonas Warneke *et al.*, pp. 2573–2585.

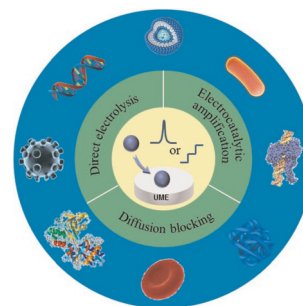
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## MINIREVIEWS

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### Impact electrochemistry for biosensing: advances and future directions

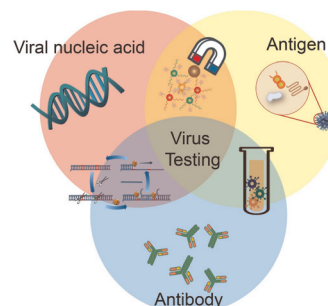
Jian-Hua Zhang,\* Dian-Mei Song and Yi-Ge Zhou\*



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### Advances in rapid point-of-care virus testing

Yu-Peng Zhang, Jin-Wei Bu, Ru-Xin Shu\* and Shu-Lin Liu\*



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Elemental answers

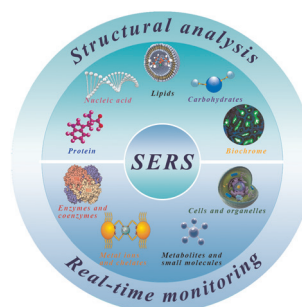


## CRITICAL REVIEW

2526

**Deciphering biomolecular complexities: the indispensable role of surface-enhanced Raman spectroscopy in modern bioanalytical research**

Ling Xia, Yujiang Huang, Qiuying Wang, Xiaotong Wang, Yunpeng Wang, Jing Wu and Yang Li\*

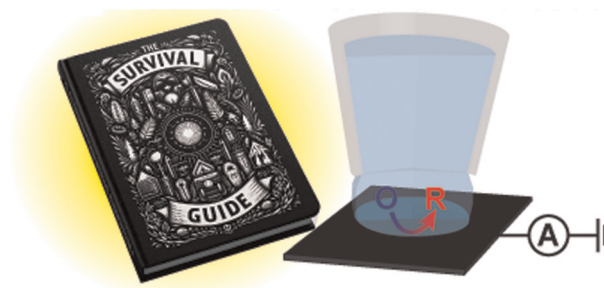


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2542

**Practical guidelines for the use of scanning electrochemical cell microscopy (SECCM)**

Gunani Jayamaha, Mahin Maleki, Cameron L. Bentley and Minkyung Kang\*

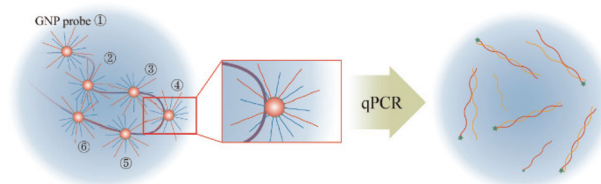


## COMMUNICATION

2556

**Single-virus-sensitive barcode qPCR mediated by the aggregation of gold nanoparticle probes**

Yuanzhao Shen, Chih-Tsung Yang, Weiwei Li\* and Xin Zhou\*

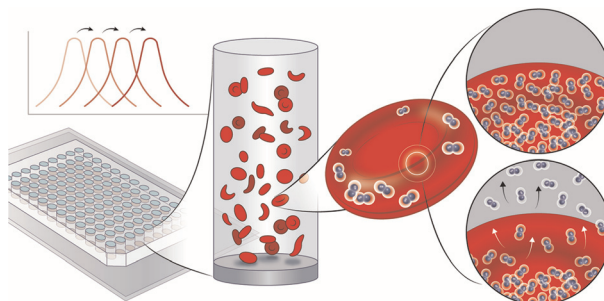


## PAPERS

2561

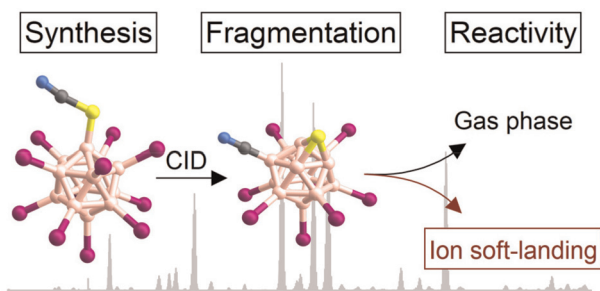
**Rapid measurement of hemoglobin-oxygen dissociation by leveraging Bohr effect and Soret band bathochromic shift**

Zoe Sekyonda, Ran An, Utku Goreke, Yuncheng Man, Karamoja Monchamp, Allison Bode, Qiaochu Zhang, Yasmin El-Gammal, Cissy Kityo, Theodosia A. Kalfa, Ozan Akkus and Umut A. Gurkan\*



## PAPERS

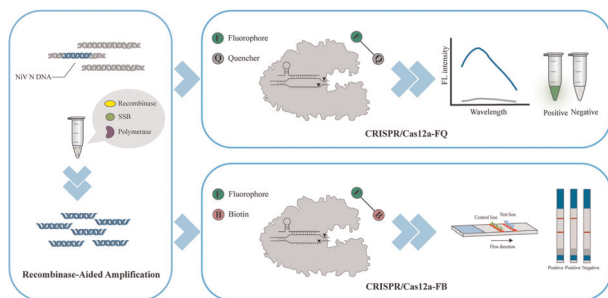
2573



### Generation and reactivity of the fragment ion $[B_{12}I_8S(CN)]^-$ in the gas phase and on surfaces

Sebastian Kawa, Jaskiran Kaur, Harald Knorke, Ziyang Warneke, Myriam Wadsack, Markus Rohdenburg, Marc Nierstenhöfer, Carsten Jenne, Hilka Kenttämä and Jonas Warneke\*

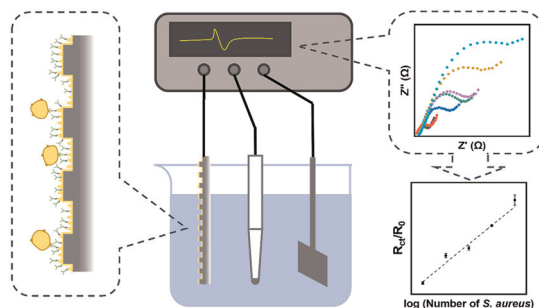
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### Novel methods for the rapid and sensitive detection of Nipah virus based on a CRISPR/Cas12a system

Xi Yang, Kexin Xu, Siying Li, Jiangnian Zhang, Yinli Xie,\* Yongliang Lou\* and Xingxing Xiao\*

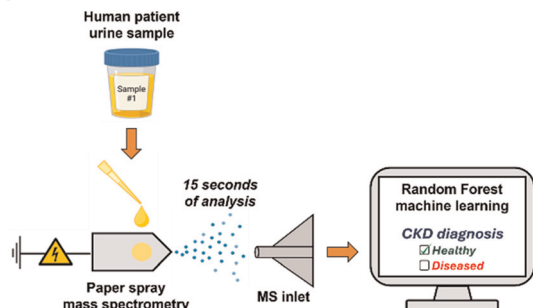
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### An electrochemical biosensor for *Staphylococcus aureus* detection based on a multilevel surface 3D micro/nanostructure

Caiyun Wang, Rui Yang, Guangtong Wang\* and Shaoqin Liu\*

2600



### Paper spray mass spectrometry combined with machine learning as a rapid diagnostic for chronic kidney disease

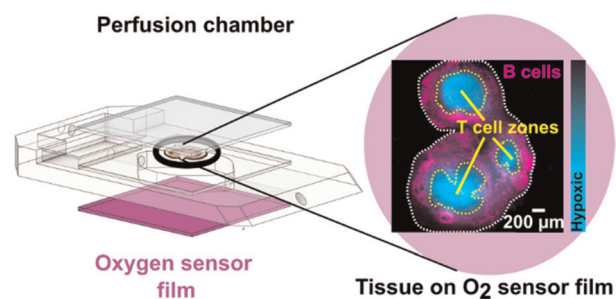
Igor Pereira, Jindar N. S. Sbotto, Jason L. Robinson and Chris G. Gill\*



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### Spatially resolved quantification of oxygen consumption rate in *ex vivo* lymph node slices

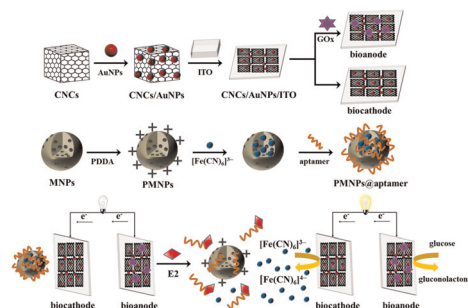
Parastoo Anbaei, Marissa G. Stevens, Alexander G. Ball, Timothy N. J. Bullock and Rebecca R. Pompano\*



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### A self-powered electrochemical aptasensor for the detection of 17 $\beta$ -estradiol based on carbon nanocages/gold nanoparticles and DNA bioconjugate mediated biofuel cells

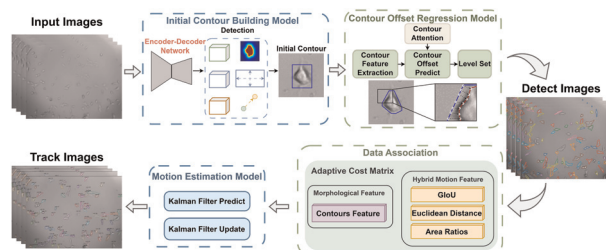
Yongju Wu, Dan Luo, Jinfei Yi, Rong Li, Dan Yang, Pengfei Pang,\* Hongbin Wang, Wenrong Yang and Yanli Zhang\*



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### HFM-Tracker: a cell tracking algorithm based on hybrid feature matching

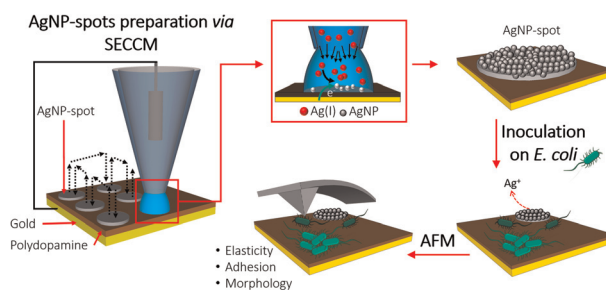
Yan Zhao, Ke-Le Chen, Xin-Yu Shen, Ming-Kang Li, Yong-Jing Wan,\* Cheng Yang, Ru-Jia Yu,\* Yi-Tao Long, Feng Yan and Yi-Lun Ying



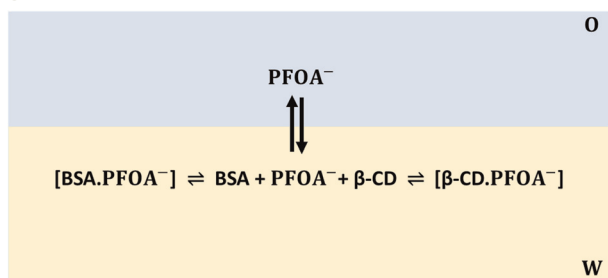
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### Antimicrobial effects of silver nanoparticle-microspots on the mechanical properties of single bacteria

Giada Caniglia,\* Dimitrios Valavanis, Gözde Tezcan, Joshua Magiera, Holger Barth, Joachim Bansmann, Christine Kranz\* and Patrick R. Unwin\*



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### Modulating the ion-transfer electrochemistry of perfluorooctanoate with serum albumin and $\beta$ -cyclodextrin

Hum Bahadur Lamichhane and Damien W. M. Arrigan\*

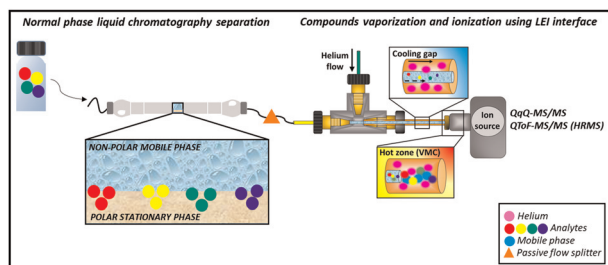
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### Towards voltammetric point of care detection of leucovorin

Pui Hang Shum and Lynn Dennary\*

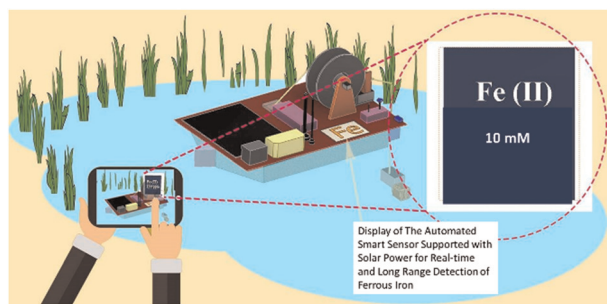
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### Liquid electron ionization-mass spectrometry as a novel strategy for integrating normal-phase liquid chromatography with low and high-resolution mass spectrometry

Nicole Marittimo, Genny Grasselli, Adriana Arigò, Giorgio Famigliini, Marco Agostini, Caterina Renzoni, Pierangela Palma and Achille Cappiello\*

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### Water monitoring with an automated smart sensor supported with solar power for real-time and long range detection of ferrous iron

Tugba Ozer,\* Ismail Agir and Thomas Borch\*

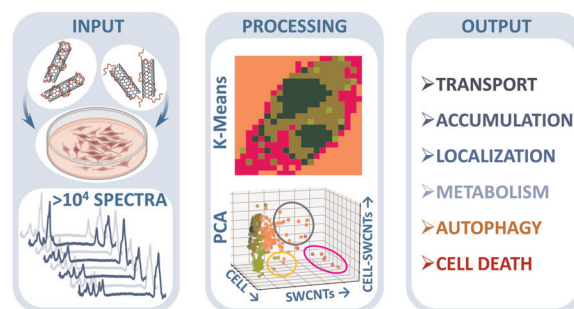


## PAPERS

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### Specificity of carbon nanotube accumulation and distribution in cancer cells revealed by K-means clustering and principal component analysis of Raman spectra

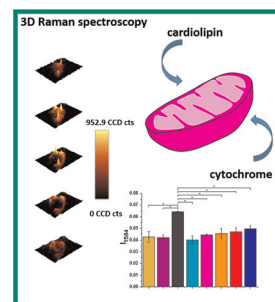
Lena Golubewa,\* Igor Timoshchenko and Tatsiana Kulhava



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### The role of cardiolipin and cytochrome c in mitochondrial metabolism of cancer cells determined by Raman imaging: *in vitro* study on the brain glioblastoma U-87 MG cell line

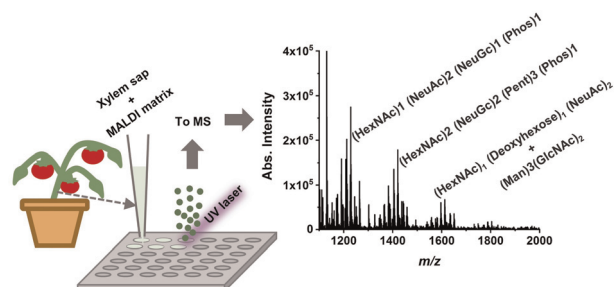
Monika Kopeć,\* Aleksandra Borek-Doros, Karolina Jarczewska, Małgorzata Barańska and Halina Abramczyk



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### Nutrient supplementation-induced metabolic profile changes and early appearance of free *N*-glycans in nutrient deficient tomato plants revealed by mass spectrometry

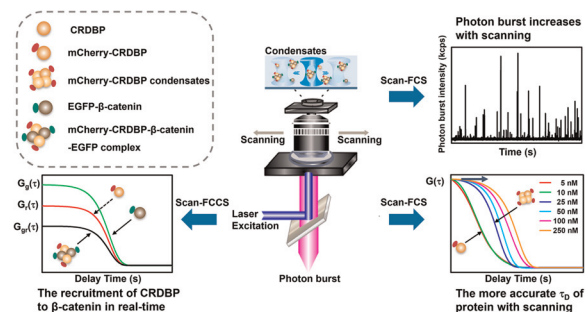
Marjan Dolatmoradi, Zsolt Sándor, Imre Vágó, Daniel A. Lowy, Akos Vertes\* and Ida Kincses\*



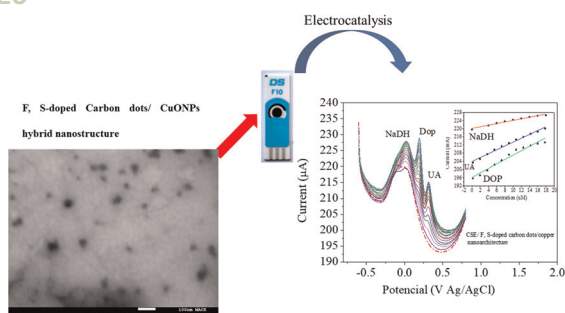
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### Objective scanning-based fluorescence cross-correlation spectroscopy (Scan-FCCS) for studying the fusion dynamics of protein phase separation

Jian Liu, Wenxin Yu, Chaoqing Dong, Xiangyi Huang\* and Jicun Ren\*



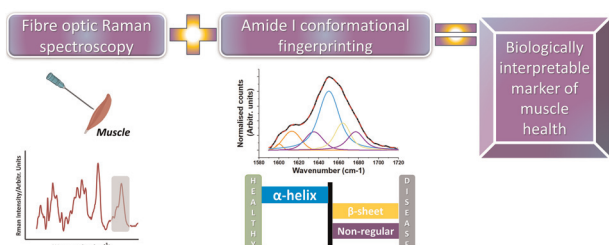
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### Non-enzymatic biosensor based on F,S-doped carbon dots/copper nanoarchitecture applied in the simultaneous electrochemical determination of NADH, dopamine, and uric acid in plasma

Octávio P. L. de Souza, Daniel Y. Tiba, Joao H. A. Ferreira, Laura C. Lieb and Thiago C. Canevari\*

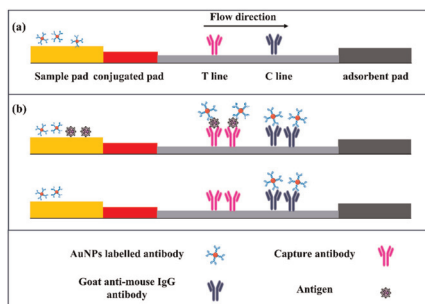
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### Conformational fingerprinting with Raman spectroscopy reveals protein structure as a translational biomarker of muscle pathology

James J. P. Alix,\* Maria Plesia, Alexander P. Dudgeon, Catherine A. Kendall, Channa Hewamadduma, Marios Hadjivassiliou, Gráinne S. Gorman, Robert W. Taylor, Christopher J. McDermott, Pamela J. Shaw, Richard J. Mead and John C. Day

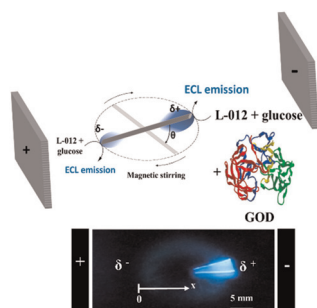
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### Establishment and application of a gold nanoparticle-based immunochromatographic test strip for the detection of avian leukosis virus P27 antigen in egg white samples

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

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### Wireless rotating bipolar electrochemiluminescence for enzymatic detection

Chunguang Li, Minghui Feng, Dalibor Stanković, Laurent Bouffier, Feifei Zhang,\* Zonghua Wang and Neso Sojic\*

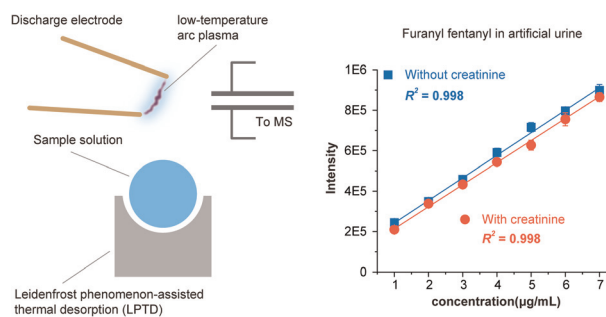


## PAPERS

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## Rapid detection of furanyl fentanyl in complex matrices using Leidenfrost desorption-assisted low-temperature arc plasma ionization mass spectrometry

Wei Zhang, Zhongbao Han, Zhongyu Zhao, Jianjun Shi, Liyan Liu, Dan Wang\* and Zhan Yu\*



## CORRECTION

2769

## Correction: 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\*

