

## IN THIS ISSUE

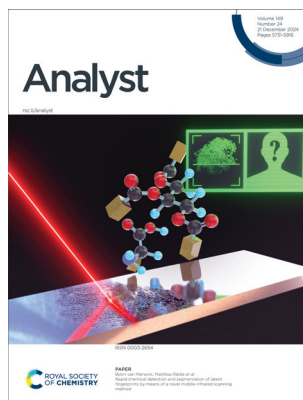
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### Cover

See Frederik Lermyte *et al.*, pp. 5762–5767.

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### Inside cover

See Björn van Marwick, Matthias Rädle *et al.*, pp. 5768–5783.

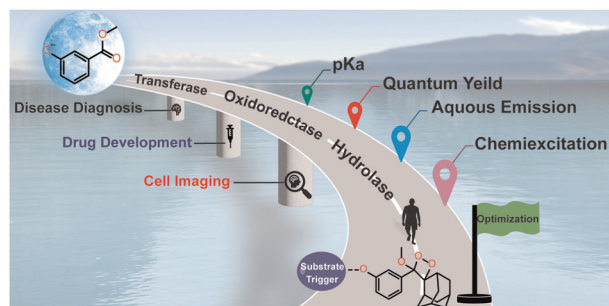
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## CRITICAL REVIEW

5739

### Phenoxy-1,2-dioxetane-based activatable chemiluminescent probes: tuning of photophysical properties for tracing enzymatic activities in living cells

Jagpreet Singh Sidhu,\* Gurjot Kaur, Atharva Rajesh Chavan, Mandeep K. Chahal and Rajeev Taliyan

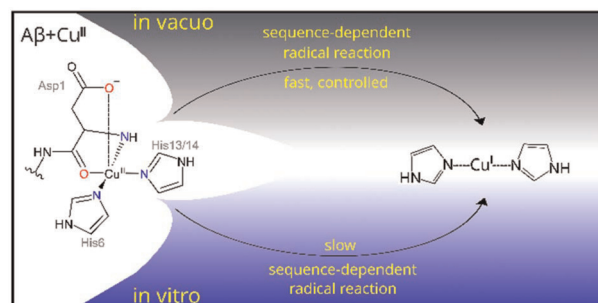


## COMMUNICATION

5762

### Mass spectrometry reflects key aspects of copper-amyloid $\beta$ chemistry

Sarah Brandner, Tanja Habeck and Frederik Lermyte\*



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Fundamental questions  
Elemental answers

5768

## Rapid chemical detection and segmentation of latent fingerprints by means of a novel middle-infrared scanning method

Björn van Marwick,\* Tim Kümmer, Felix Wühler, Felix Lauer, Jan Hoffmann and Matthias Rädle\*

### Introduction

The way to find latent fingerprints  
Current analytical methods for chemical and forensic tracing  
Established imaging methods for chemical and forensic tracing  
Chemical challenge of different surfaces

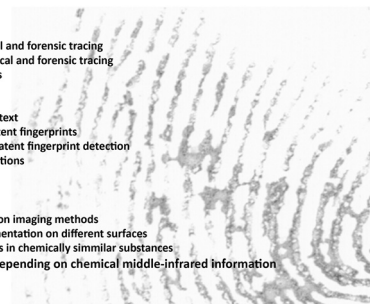
### Material and Methods

Latent fingerprints in dactyloscopic context  
A review of chemical composition of latent fingerprints  
Novel measurement method for rapid latent fingerprint detection  
Sample preparation and measure conditions  
Algorithms and data (pre-) processing

### Results

A proof of concept - Challenging common imaging methods  
Rapid chemical latent fingerprints segmentation on different surfaces  
How to image hidden latent fingerprints in chemically similar substances  
3D latent fingerprint visualization depending on chemical middle-infrared information

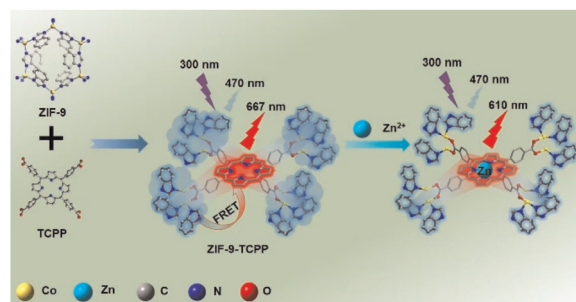
### Conclusions



5784

## A novel light-harvesting ZIF-9-TCPP as a promising FRET-based ratiometric fluorescence probe for sperm mobility

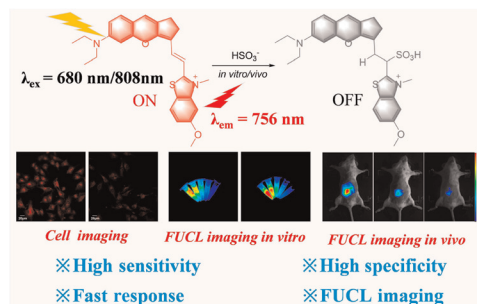
Yi-Xuan Li, Yu-Xuan Dai, Ju-Zheng Wang, Jérôme Chauvin, Xue-Ji Zhang, Serge Cosnier, Robert S. Marks and Dan Shan\*



5791

## A near-infrared frequency upconversion fluorescent probe for rapid and sensitive visual detection of sulfur dioxide

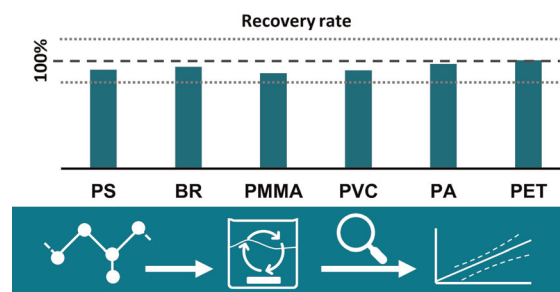
Hong Zeng, Xiao Ma, Shufen Pan, Yuting Han, Yanyan Tang, Yulan Fan and Yongquan Wu\*



5800

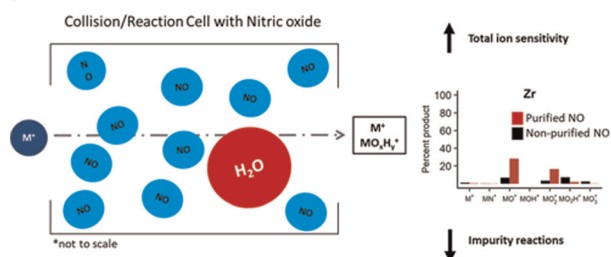
## Highly selective solid-liquid extraction of microplastic mixtures as a pre-preparation tool for quantitative nuclear magnetic resonance spectroscopy studies

Marcel Günther and Wolfgang Imhof\*



## PAPERS

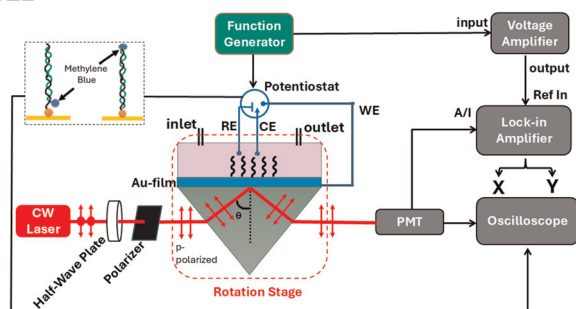
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### The impact of gas purity on observed reactivity with NO using inductively coupled plasma tandem mass spectrometry

Amanda D. French,\* Kirby P. Hobbs, Richard M Cox and Isaac J. Arnquist

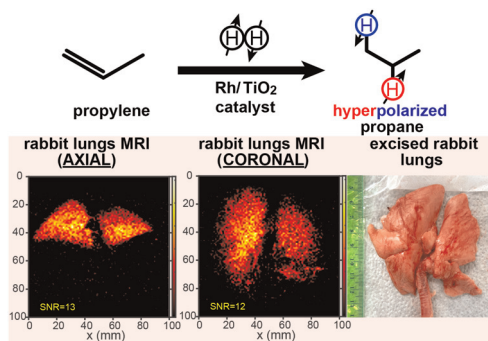
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### Electrochemically modulated surface plasmon waves for characterization and interrogation of DNA-based sensors

Anil Sharma, Thomas Hulse, Aymen H. Qatamin, Monica Moreno, Klester S. Souza, Marcelo B. Pereira, Fabricio S. Campos, Leandro B. Carneiro, Antonio M. H. de Andrade, Paulo M. Roehle, Flavio Horowitz and Sergio B. Mendes\*

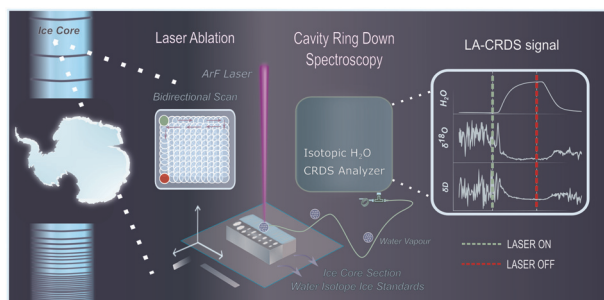
5832



### Rapid lung ventilation MRI using parahydrogen-induced polarization of propane gas

Md Raduanul H. Chowdhury, Clementinah Oladun, Nuwandi M. Ariyasingha, Anna Samoilenko, Tarek Bawardi, Dudari B. Burueva, Oleg G. Salnikov, Larisa M. Kovtunova, Valerii I. Bukhtiyarov, Zhongjie Shi, Kehuan Luo, Sidhartha Tan, Juri G. Gelovani, Igor V. Koptug, Boyd M. Goodson and Eduard Y. Chekmenev\*

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### Towards high-resolution water isotope analysis in ice cores using laser ablation – cavity ring-down spectroscopy

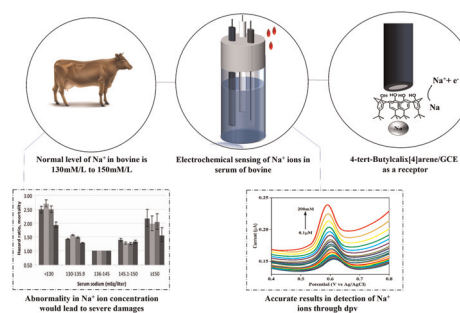
Eirini Malegiannaki,\* Pascal Bohleber, Daniele Zannoni, Ciprian Stremtan, Agnese Petteni, Barbara Stenni, Carlo Barbante, Bo M. Vinther and Vasileios Gkinis



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## Electrochemical sensing of sodium ions present in bovine serum using 4-*tert*-butylcalix[4]arene as a receptor

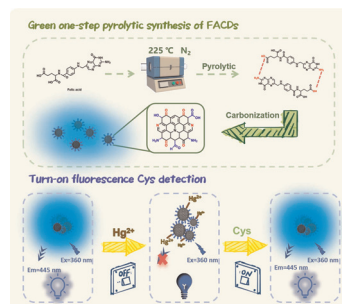
Adrian Ebenezer Paul, Gaurav Gaur, Abdullah Al Souwaileh, Jerry J. Wu and Sambandam Anandan\*



5863

## Green one-step pyrolytic synthesis of folic acid-derived carbon dots for sensitive turn-on fluorescence detection of cysteine

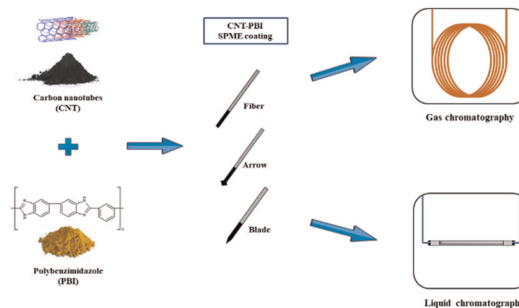
Jie Huang, Ruicheng Xu, Qiaoting Yang, Kang Tao and Dan Shan\*



5871

## Universal carbon nanotubes-polybenzimidazole SPME coating and its application for both gas and liquid chromatography

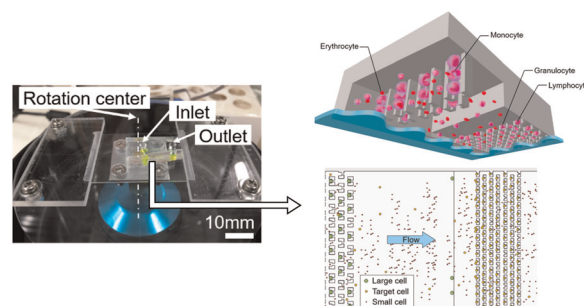
Igor Gustavo Carvalho Oliveira, Khaled Murtada, Maria Eugênia Costa Queiroz and Janusz Pawliszyn\*



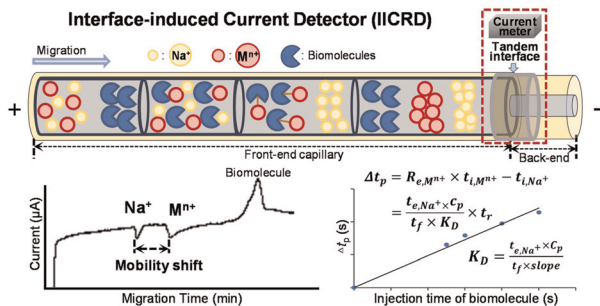
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## A novel microfluidic chip for on-site radiation risk evaluation

Kenta Takahashi, Takahiro Tamura, Kosuke Yamada, Kaisei Suga, Yuri Aoki, Ryota Sano, Kentaro Koyama, Asako J. Nakamura\* and Takaaki Suzuki\*



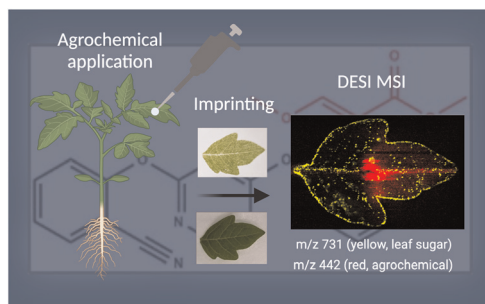
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### Determination of metal–biomolecule interactions by relative mobility shift partial filling affinity capillary electrophoresis

Tao Huang, Jinxiang Xu, Chunsu Liang, Liyu Gong and Xiaomei Ling\*

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### Visualizing active fungicide formulation mobility in tomato leaves with desorption electrospray ionisation mass spectrometry imaging

Akhila Ajith, Emrys Jones, Emily Prince, Drupad K. Trivedi, Giles N. Johnson, Phillip J. Milnes and Nicholas P. Lockyer\*

