### **Analytical Methods**

#### rsc.li/methods

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 1759-9679 CODEN AMNECT 15(39) 5105-5260 (2023)



#### Cover

See Jesse Greener et al., pp. 5129-5138. Image reproduced by permission of Jesse Greener and Clyde Henry, Anal. Methods, 2023, **15**, 5129.

#### **CRITICAL REVIEW**

#### 5112

#### Component analysis of fat, oil and grease in wastewater: challenges and opportunities

Anika Amir Mohana, Felicity Roddick, Subashani Maniam, Li Gao and Biplob Kumar Pramanik\*

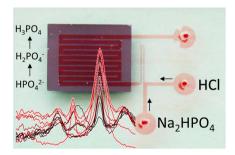


#### **PAPERS**

#### 5129

A spectIR-fluidic reactor for monitoring fast chemical reaction kinetics with on-chip attenuated total reflection Fourier transform infrared spectroscopy

Nan Jia, Leon Torres de Oliveira, André Bégin-Drolet and Jesse Greener\*



#### **Editorial Staff**

Executive Editor

Rebecca Garton

**Deputy Editor** 

Alice Smallwood

**Editorial Production Manager** 

Sarah Whitehouse

Development Editor

Celeste Brady

**Publishing Editors** 

Gabriel Clarke, Derya Kara-Fisher, Emma Stephen, Ziva Whitelock

**Publishing Assistant** 

Andrea Whiteside

Editorial Assistant

Leo Curtis

Publisher

Jeanne Andres

For queries about submitted articles please contact Sarah Whitehouse, Editorial production manager, in the first instance. E-mail methods@rsc.org

For pre-submission queries please contact Rebecca Garton, Executive editor. E-mail methods-rsc@rsc.org

Analytical Methods (electronic: ISSN 1759-9679) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road,

Cambridge, CB4 0WF, UK Tel +44 (0)1223 432398; E-mail orders@rsc.org

2023 Annual (electronic) subscription price: £2416; US\$4255. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing

to the electronic version only will be charged VAT.

If you take an institutional subscription to any Royal Society of Chemistry journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip

Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK,

Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

# **Analytical Methods**

#### rsc.li/methods

Early applications of new analytical methods with clear societal impact.

#### Editor-in-Chief

Scott Martin, St. Louis University, USA

#### Associate Editors

Jonas Bergquist, Uppsala University, Sweden Wendell Coltro, Federal University of Goiás,

Juan García-Reyes, Jaén University, Spain Tony Killard, University of the West of England, UK

Zhen Liu, Nanjing University, China Matthew Lockett, University of North Carolina at Chapel Hill, USA

Chao Lu, Beijing University of Chemical Technology, China

Fiona Regan, Dublin City University, Ireland Michael Roper, Florida State University, USA Jill Venton, University of Virginia, USA

#### Advisory Board

Jailson de Andrade, Federal University of Bahia, Brazil

Lane Baker, Indiana University, USA Craig Banks, The Manchester Metropolitan University, UK

Emanuel Carrilho, University of São Paulo, James Chapman, The University of

Queensland, Australia Yi Chen, Chinese Academy of Sciences, China

Anthony Gachanja, Jomo Kenyatta University Antonio Molina-Díaz, University of Jaén, of Agriculture and Technology, Kenya Amanda Hummon, Ohio State University,

Lauro Kubota, Instituto de Química, Brazil Ally Lewis, University of York, UK Iuewen Liu, University of Waterloo, Canada Susan Lunte, University of Kansas, USA Jim Luong, Dow Chemical Canada ULC, Canada

Christopher Easley, Auburn University, USA Susheel Mittal, Thapar University, India

Koji Otsuka, Kyoto University, Japan Brett Paull, University of Tasmania, Australia Zachary Schultz, Ohio State University, USA Guobao Xu, Changchun Institute of Applied Chemistry, China

#### Information for Authors

Full details on how to submit material for publication in Analytical Methods are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made via the journal's homepage:

Authors may reproduce/republish portions of their published contribution without seeking permission from the Royal Society of Chemistry, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)-Reproduced by permission of the Royal Society of Chemistry.

This journal is © The Royal Society of Chemistry 2023. Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA. Registered charity number: 207890

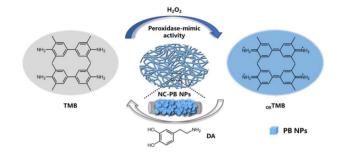


#### **PAPERS**

#### 5139

Nitrocellulose membranes *in situ* grown with Prussian blue nanoparticles as stable nanozyme pads for colorimetric detection of dopamine

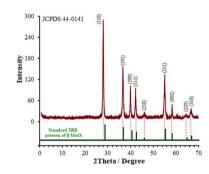
Shuting Zhang, Cuili Li, Zhihong Sun, Jie Liu\* and Guanglei Fu\*



#### 5146

Surface modification of a screen-printed electrode with a flower-like nanostructure to fabricate a guanine DNA-based electrochemical biosensor to determine the anticancer drug pemigatinib

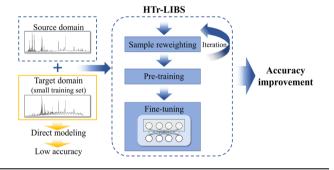
Basim Al-Qargholi, F. Al-dolaimy, Farag M. A. Altalbawy, Abed J. Kadhim, Ali Hashiem Alsaalamy, Muath Suliman\* and Ahmed hussien R. Abbas



#### 5157

Accuracy improvement of laser-induced breakdown spectroscopy coal analysis by hybrid transfer learning

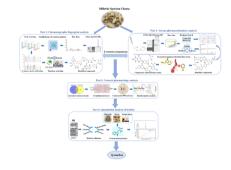
Ji Chen, Wenhao Yan, Lizhu Kang, Bing Lu, Ke Liu and Xiangyou Li\*



#### 5166

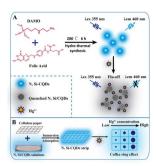
Quality control for a traditional Chinese medicine, Millettia speciosa Champ, using ultra-highperformance liquid chromatography fingerprint, serum pharmacochemistry and network pharmacology

Yunyuan Nong, Chi Zhang, Yue Guo, Yuelian Qin, Xinyu Zhong, Linlin Feng, Ziping Pan, Lijun Deng, Hongwei Guo\* and Zhiheng Su\*



#### **PAPERS**

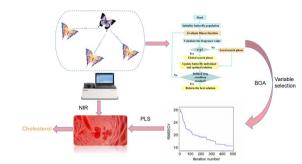
#### 5181



# Synthesis of N,Si co-doped carbon dots to establish a fluorescent sensor for Hg(u) detection with triple signal output

Jun Zhou, Chengyue Zou, Danqun Huo, Chengxiang Chu, Shasha Liu, Mei Yang, Suyi Zhang,\* Xianfeng Wang\* and Changjun Hou\*

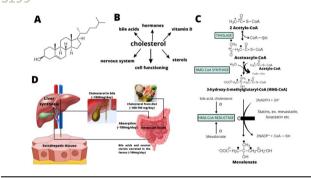
#### 5190



#### Discretized butterfly optimization algorithm for variable selection in the rapid determination of cholesterol by near-infrared spectroscopy

Xihui Bian,\* Zizhen Zhao, Jianwen Liu, Peng Liu, Huibing Shi and Xiaoyao Tan

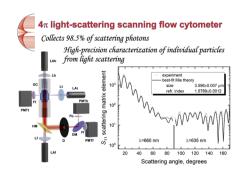
#### 5199



# A new modality for cholesterol impact tracking in colon cancer development — Raman imaging, fluorescence and AFM studies combined with chemometric analysis

K. Beton-Mysur and B. Brożek-Płuska\*

#### 5218



## $4\pi$ light scattering flow cytometry: enhancing the identification and characterization of individual cells

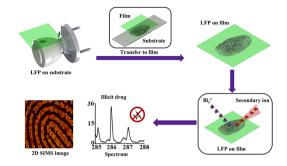
Evgeniy A. Alexandrov, Alena L. Litvinenko, Ekaterina S. Yastrebova, Dmitry I. Strokotov, Vyacheslav M. Nekrasov, Konstantin V. Gilev, Andrei V. Chernyshev, Andrey A. Karpenko and Valeri P. Maltsev\*

#### **PAPERS**

#### 5225

#### TOF-SIMS study of latent fingerprints on challenging substrates with the aid of transfer films

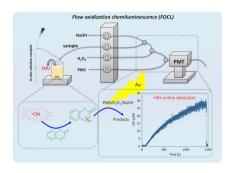
Zhaolun Liu, Wenjie Li, Yin Wu, Hanze Man, Ya-Bin Zhao\* and Zhanping Li\*



#### 5233

#### Online chemiluminescence determination of the hydroxyl radical using coumarin as a probe

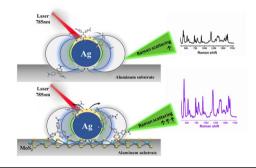
Pengyu Geng, Jitao Lv,\* Lixia Zhao and Yawei Wang



#### 5239

Ultrasensitive detection of crystal violet using a molybdenum sulfide-silver nanostructure-based sensing platform: roles of the adsorbing semiconductor in SERS signal enhancement

Minh Khanh Pham, Dao Thi Nguyet Nga, Quan Doan Mai, Van Manh Tien, Nguyen Quang Hoa, Vu Dinh Lam, Ha Anh Nguyen\* and Anh-Tuan Le\*



#### 5250

Preparation of a hydrophilic nanofiber membrane by electrospinning for application in the detection of NO<sub>2</sub> by chemiluminescence

ZhiJin Xie, WenYuan Tan,\* YaLin Xiong, ShaoLin Deng and Jing Zhang

