

Sensors & Diagnostics

rsc.li/sensors

IN THIS ISSUE

ISSN 2635-0998 CODEN SDEIAR 2(5) 979-1324 (2023)



Cover

See Aidana Beisenova *et al.*, pp. 1186–1198.
Image reproduced by permission of Filiz Yesilkoy from *Sens. Diagn.*, 2023, 2, 1186.



Inside cover

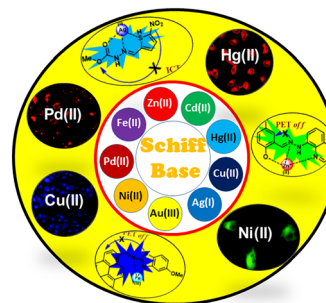
See Sankarasekaran Shanmugaraju *et al.*, pp. 1158–1175.
Image reproduced by permission of Sankarasekaran Shanmugaraju from *Sens. Diagn.*, 2023, 2, 1158.

CRITICAL REVIEWS

988

An overview of Schiff base-based fluorescent turn-on probes: a potential candidate for tracking live cell imaging of biologically active metal ions

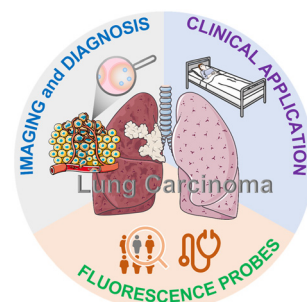
A. Afrin, Anjitha Jayaraj, M. S. Gayathri and Chinna Ayya Swamy P.*



1077

Fluorescence probes for lung carcinoma diagnosis and clinical application

Xiaoyu Zhang, Feifei Yu, Zhenkai Wang, Tongmeng Jiang, Xinyu Song* and Fabiao Yu*



Editorial Staff

Executive Editor

Anna Rulka

Deputy Editor

Audra Taylor

Editorial Production Manager

Viktoria Titmus

Assistant Editors

Shwetha Krishna, Angelica-Jane Onyekwere, Michael Whitelaw, Alexander Whiteside

Editorial Assistant

Samantha Campos

Publishing Assistant

Brittany Hanlon

Publisher

Neil Hammond

For queries about submitted papers, please contact Viktoria Titmus, Editorial Production Manager in the first instance.

E-mail: sensors@rsc.org

For pre-submission queries please contact Anna Rulka, Executive Editor. E-mail: sensors-rsc@rsc.org

Sensors & Diagnostics (electronic: ISSN 2635-0998) is published 6 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF.

Sensors & Diagnostics is a Gold Open Access journal and all articles are free to read. Please email orders@rsc.org to register your interest or contact 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

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

Sensors & Diagnostics

rsc.li/sensors

Sensors & Diagnostics is a gold open access journal for critical advances in sensors, sensing devices and systems that apply to monitoring and medical diagnostics.

Editorial Board

Editors-in-Chief

Sabine Szunerits, University of Lille, France

Xueji Zhang, Shenzhen University, China

Associate Editors

Ilka Engelmänn, Montpellier University and Montpellier University Hospital, France
 Carlos D. Garcia, Clemson University, USA
 Wei Gao, California Institute of Technology, USA
 Quan Yuan, Hunan University, China
 Lisa Hall, University of Cambridge, UK
 Mei Tian, Fudan University, Shanghai, China

Members

Sahika Inal, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Advisory Board

Silvana Andreescu, Clarkson University, USA
 Vipul Bansal, RMIT University, Australia
 Elena Benito-Peña, Universidad Complutense de Madrid, Spain
 Sabrina Gonoci, University of Messina, Italy
 Sylvia Daunert, University of Miami, USA
 Ambra Giannetti, IFAC-CNR, Italy
 Dean Ho, National University of Singapore, Singapore
 Eva Jakob Toth, Centre for Molecular Biophysics, CNRS, France
 Tony James, University of Bath, UK

Suresh Kumar Kailasa, Sardar Vallabhbhai National Institute of Technology, India
 Mahesh Kumar, Indian Institute of Technology Jodhpur, India
 Yingfu Li, McMaster University, Canada
 Sierin Lim, Nanyang Technological University, Singapore
 Igor Medintz, U.S. Naval Research Laboratory, USA
 Agata Michalska, University of Warsaw, Poland
 Elisa Michelini, University of Bologna, Italy
 Jwa-Min Nam, Seoul National University

Daniel Roxbury, The University of Rhode Island, USA
 Sankarasekaran Shanmugaraju, Indian Institute of Technology Palakkad, India
 Lauro Tatsuo Kubota, University of Campinas, Brazil
 Raffaele Velotta, University of Naples "Federico II", Italy
 Nianqiang "Nick" Wu, University of Massachusetts Amherst, USA
 Ali Yetisen, Imperial College London, UK

Information for Authors

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

Submissions: The journal welcomes submissions of manuscripts for publication as Full Papers, Communications, Reviews, Perspectives, Tutorial Reviews. Full Papers and Communications should describe original work of high quality and impact.

Additional details are available from the Editorial Office or <http://www.rsc.org/authors>

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

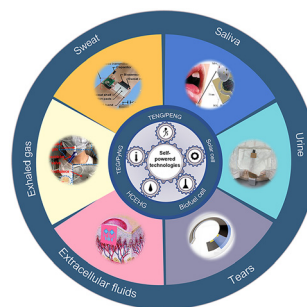


CRITICAL REVIEWS

1097

Self-powered sensors for biomarker detection

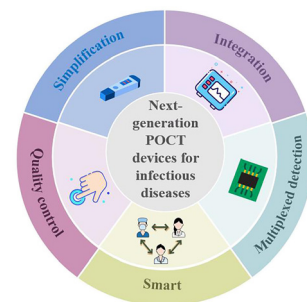
Jiaxuan Li, Lingling Xu, Yang Zou and Zhou Li*



1123

Point-of-care testing of infectious diseases: recent advances

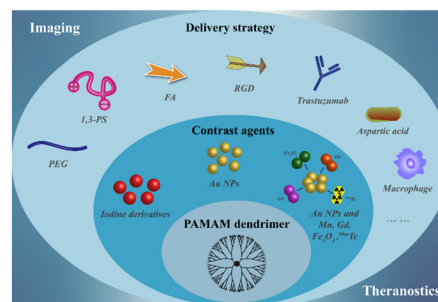
Meiyun Shang, Jiuchuan Guo and Jinhong Guo*



1145

Recent advances in PAMAM dendrimer-based CT contrast agents for molecular imaging and theranostics of cancer

Tianyu Huang, Gaoming Li, Yunqi Guo, Guixiang Zhang,* Dzmitry Shchabin, Xiangyang Shi* and Mingwu Shen*

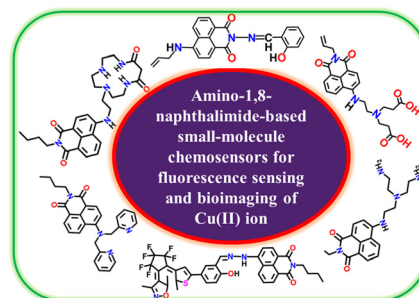


TUTORIAL REVIEW

1158

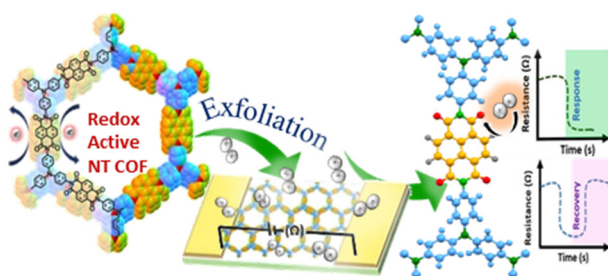
Fluorescence sensing and bioimaging of Cu(II) ions using amino-1,8-naphthalimide-based small-molecule chemosensors

Binduja Mohan, Noushija Mannanlara Kunhumon and Sankarasekaran Shanmugaraju*



COMMUNICATIONS

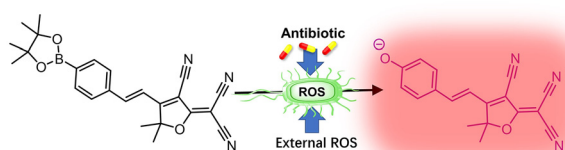
1176



An exfoliated redox active imide covalent organic framework for metal free hydrogen gas sensing

Nany Thokala, Kiran Vankayala, Asmita Dileep Gaonkar, Ganga Periyasamy, Kashifa Fazl-Ur-Rahman, Krishnaveni Valle, Marilyn Esclance DMello, Keloth Basavaiah and Suresh Babu Kalidindi*

1181

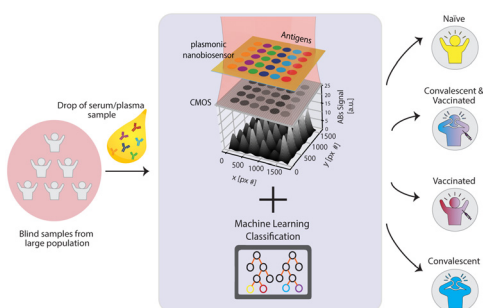


Repurposing a long-wavelength fluorescent boronate probe for the detection of reactive oxygen species (ROS) in bacteria

Kai-Cheng Yan, Naing Thet, Rachel A. Heylen, Adam C. Sedgwick,* Tony D. James,* A. Toby A. Jenkins* and Xiao-Peng He*

PAPERS

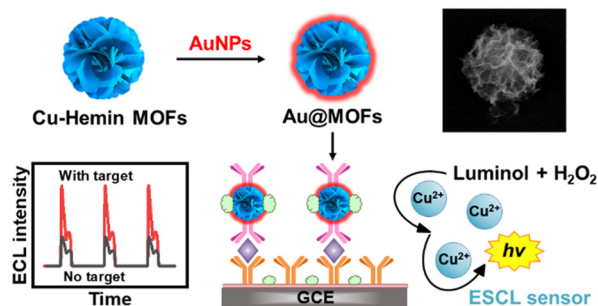
1186



Machine-learning-aided multiplexed nanoplasmonic biosensor for COVID-19 population immunity profiling

Aidana Beisenova, Wihan Adi, S. Janna Bashar, Monniesh Velmurugan, Kenzie B. Germanson, Miriam A. Shelef and Filiz Yesilkoy*

1199



Functionalized metal-organic frameworks based on multi-catalyst ordered assembly for electrochemical stripping chemiluminescent immunoassay

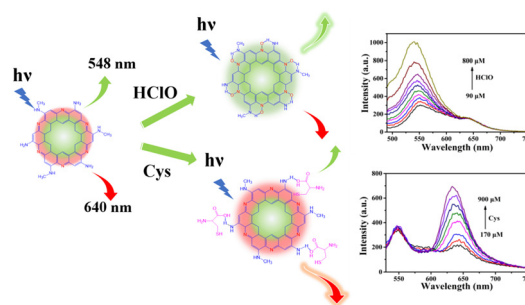
Xu Liang, Yuecong Hu, Xinhe Zheng, Yi Shao, Yutong Hua, Junjie Liu, Zhiwei Zhu and Yuanhua Shao*



1207

A fluorescence “turn-on” probe for the respective ratiometric detection of hypochlorite and cysteine

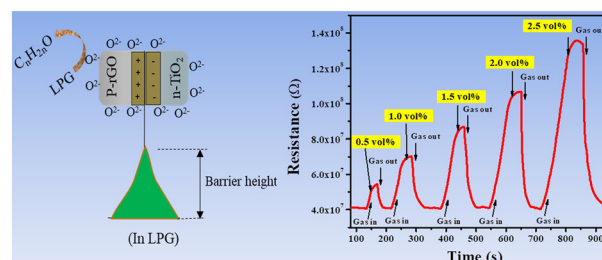
Zhizhen Wu, Muzi Cai, Wenjuan Lv, Cancan Lu, Bingyan Wu, Cuiling Ren,* Yalei Dong,* Hongli Chen and Xingguo Chen



1215

A highly sensitive room temperature liquefied petroleum gas (LPG) sensor with fast response based on a titanium dioxide (TiO₂)-reduced graphene oxide (r-GO) composite

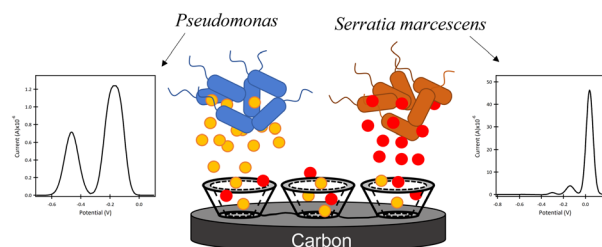
Navin Chaurasiya, Ajeet Singh, Kuldeep Kumar, Bal Chandra Yadav, Pramod Kumar Yadawa,* Sandip Kumar Singh and Kajal Kumar Dey*



1228

Rapid fingerprinting of bacterial species using nanocavities created on screen-printed electrodes modified by β-cyclodextrin

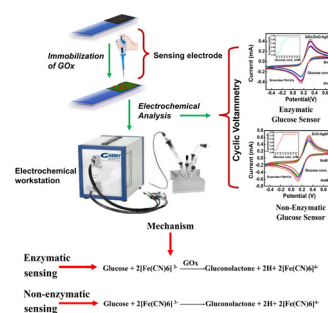
Niloofer Haghghian and Ritu Katakya*

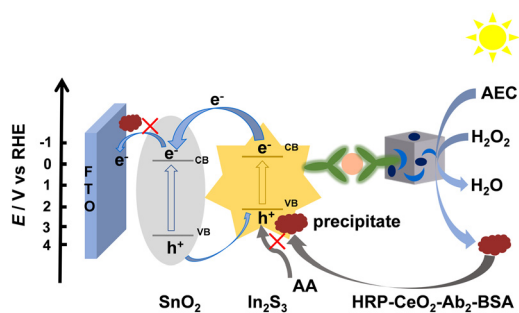


1236

Effect of doping mediated oxygen vacancies on the charge transfer ability of zinc oxide nanosheets for electrochemical glucose sensing

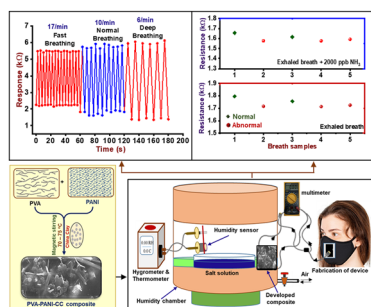
Saptaka Baruah, Bidyarani Maibam, Jyoti Jaiswal, Ankit Kumar and Sanjeev Kumar*





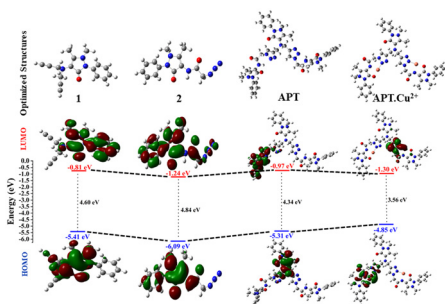
Photoelectrochemical immunoassay of alpha-fetoprotein based on a SnO₂/In₂S₃ heterojunction and an enzyme-catalyzed precipitation strategy

Lu Li, Yaqing Weng, Chenglong Sun, Yueyi Peng* and Qingji Xie*



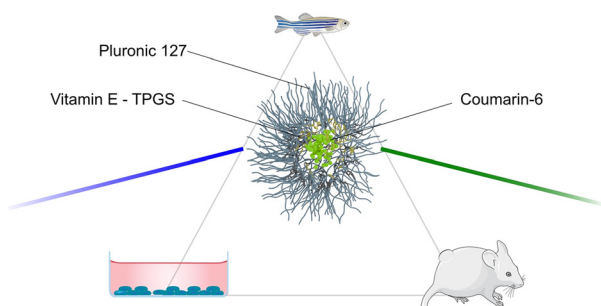
Chemiresistive sensor for breath frequency and ammonia concentration in exhaled gas over a PVA/PANI/CC composite film

Sandeep Kumar, Chandra Shekhar Kushwaha, Pratibha Singh, Kritika Kanojia and Saroj Kr Shukla*



A selective chemosensor *via* click chemistry for Cu²⁺ and Hg²⁺ ions in organic media

Sachin Kumar, Bajrang Lal, Ram Kumar Tittal*, Gurleen Singh, Jandeep Singh, Ghule Vikas D., Renu Sharma and Jagjivan K. Sabane



Photophysical and biological assessment of coumarin-6 loaded polymeric nanoparticles as a cancer imaging agent

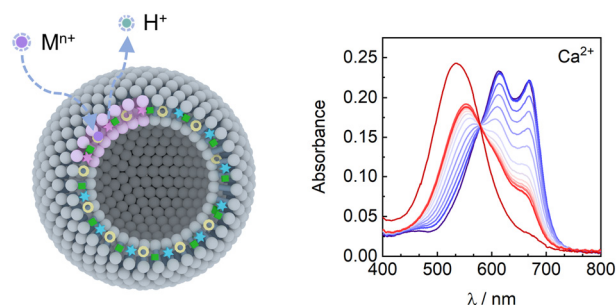
Yiota Gregoriou,* Gregoria Gregoriou, Andreas Manoli, Paris Papageorgis, Benedict Mc Larney, Despoina Vangeli, Sarah McColman, Vural Yilmaz, Hsiao-ting Hsu, Magdalena Skubal, Anuja Ogirala, Evangelia Athanasiou, David T. Cramb, Nikolas Dietis, Katerina Strati, Grigorios Itskos, Andreas I. Constantinou and Chrysafis Andreou*



1286

Polymersome-based ion-selective nano-optodes containing ionophores

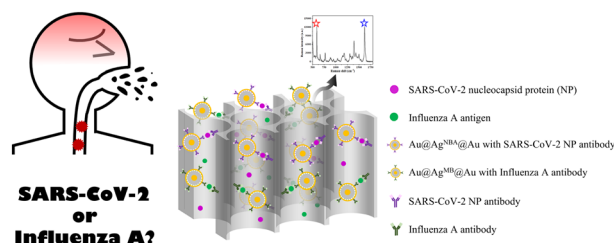
Yunxin Cui, Jingying Zhai, Yifu Wang and Xiaojiang Xie*



1292

Rapid and simultaneous detection of SARS-CoV-2 and influenza A using vertical flow assay based on AAO and SERS nanotags

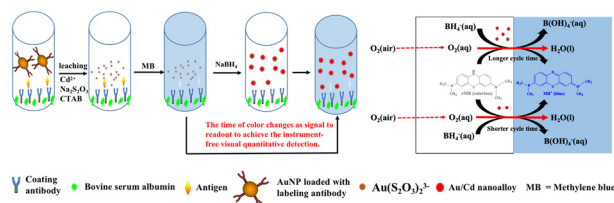
Yu Lu, Ruihua Fei, Jiahe Zhang, Geng Zhu, Xiufang Mo, Yu Wan, Yan Huang, Qingjiang Sun, Dianhuai Meng* and Xiangwei Zhao*



1302

A new detection mode for gold nanoparticle-linked immunosorbent assay (GNLISA) based on a clock reaction: instrument- and enzyme-free visual quantitative detection of prostate-specific antigen (PSA)

Tianxiang Wu* and Xiao-Yuan Li



1311

A water soluble fluorescent probe for selective and sensitive detection of picric acid – a nitroexplosive

Porchezhiyan Vadivel, Kalaivani Dayanidhi and Noorjahan Sheik Eusuff*

