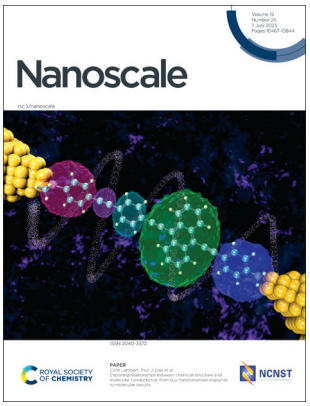
Nanoscale

rsc.li/nanoscale

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 2040-3372 CODEN NANOHL 15(25) 10467–10844 (2023)



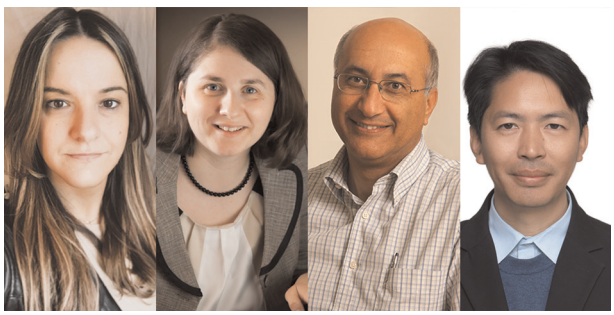
Cover
See Colin Lambert, Paul J. Low *et al.*, pp. 10573–10583.

Image reproduced by permission of Elena Gorenskaia from *Nanoscale*, 2023, **15**, 10573.

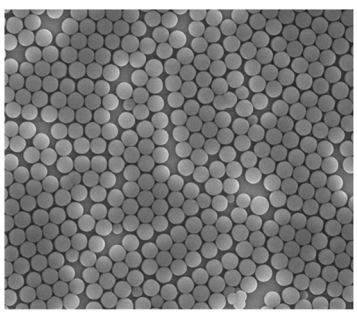
Inside cover
See Hua Zou and Yuhang Ren, pp. 10484–10497.

Image reproduced by permission of Hua Zou from *Nanoscale*, 2023, **15**, 10484.

EDITORIAL



REVIEWS



For queries about submitted papers, please contact Jonathon Watson, Editorial Production Manager in the first instance. E-mail: **nanoscale@rsc.org**
For pre-submission queries please contact Michaela Mühlberg, Executive Editor. E-mail: **nanoscale-rsc@rsc.org**
Nanoscale (electronic: ISSN 2040-3372) 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: £1936/$3155. 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.

Nanoscale

rsc.li/nanoscale

Nanoscale publishes experimental and theoretical work across the breadth of nanoscience and nanotechnology.

NCNST

Published in collaboration with the National Centre for Nanoscience and Technology, Beijing, China

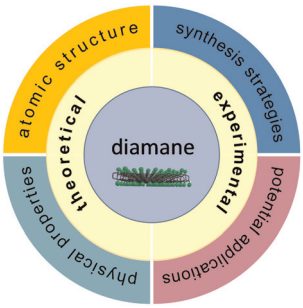
Information for Authors

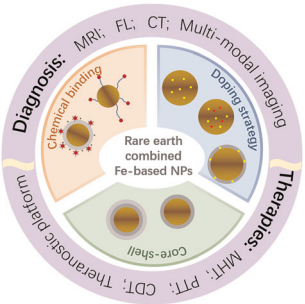
Full details on how to submit material for publication in Nanoscale are given in the Instructions for Authors (available from http://**www.rsc.org/authors**). Submissions should be made via the journal's homepage: **rsc.li/nanoscale**

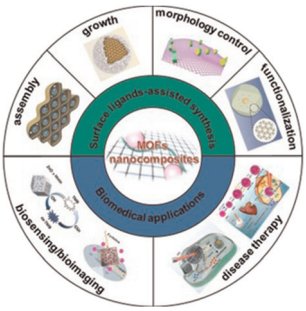
Registered charity number: 207890

ROYAL SOCIETY OF CHEMISTRY

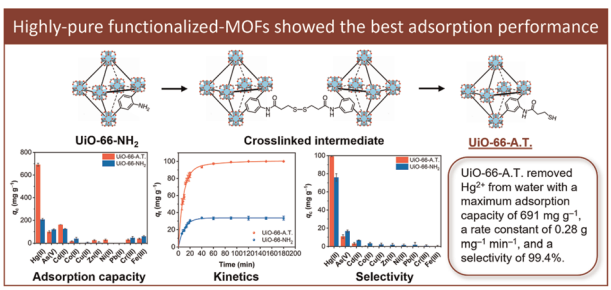
REVIEWS







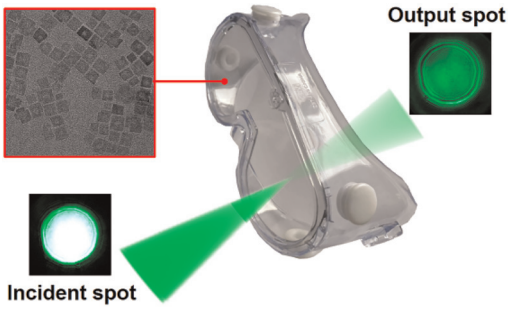
COMMUNICATIONS

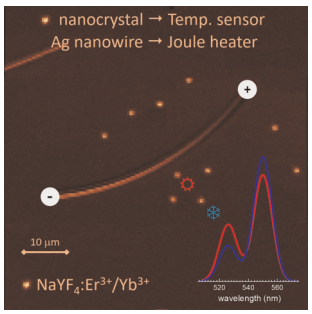


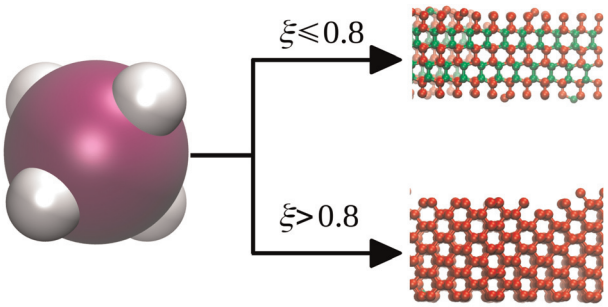
COMMUNICATIONS

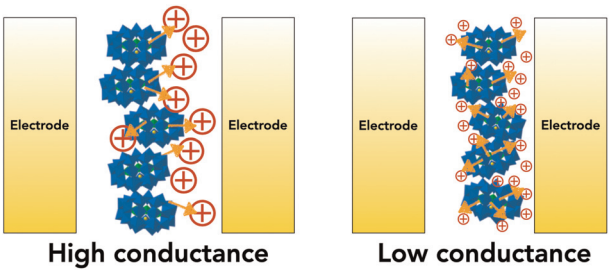
PAPERS

PAPERS



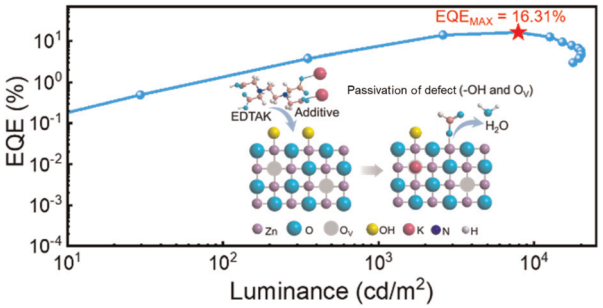


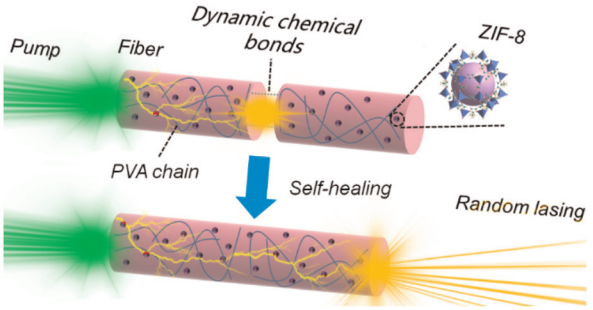


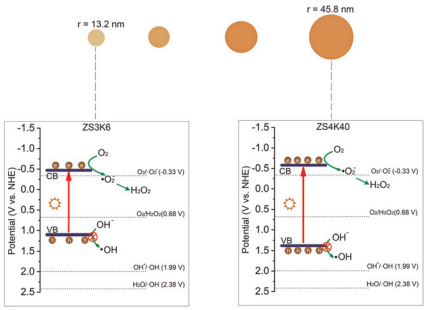


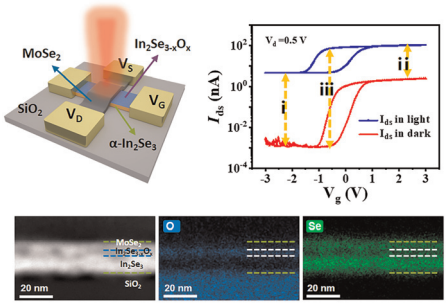
PAPERS

PAPERS









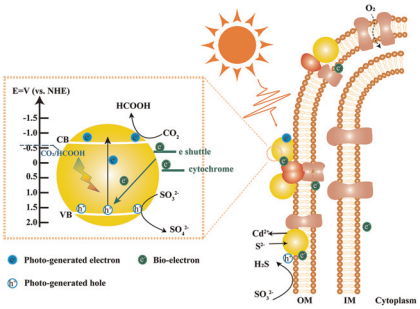
PAPERS

PAPERS

10755

Enhanced photocatalytic CO_2 reduction on bio-mineralized CdS *via* an electron conduit in bacteria

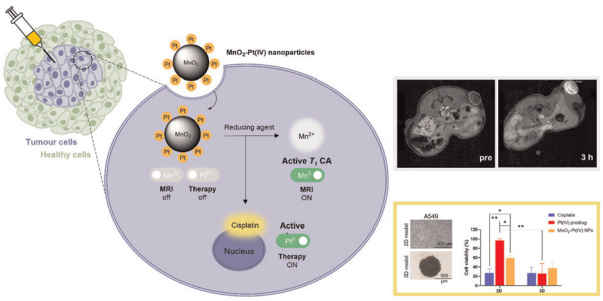
Juan Liu, Xiaoxiao Guo, Liuyang He, Li-Ping Jiang,* Yang Zhou* and Jun-Jie Zhu*



10763

Redox double-switch cancer theranostics through Pt(IV) functionalised manganese dioxide nanostructures

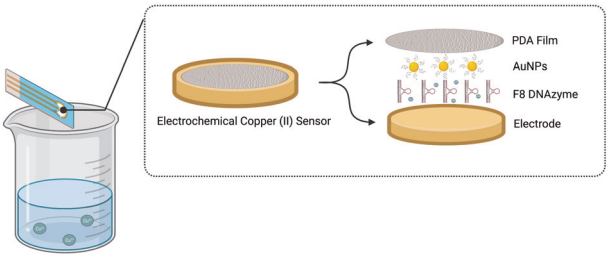
Beatriz Brito, Maria Rosaria Ruggiero, Thomas W. Price, Milene da Costa Silva, Núria Genicio, Annah J. Wilson, Olga Tyurina, Veronika Rosecker, Thomas R. Eykyn, Manuel Bañobre-López, Graeme J. Stasiuk and Juan Gallo*



10776

Activity-enhanced DNAzyme for design of label-free copper(II) biosensor

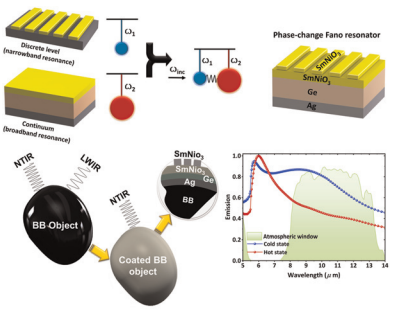
William Etheridge, Frederic Brossard, Sitan Zheng, Svenja Moench, Suraj Pavagada, Róisín M. Owens and Ljiljana Fruk*



10783

Phase-change Fano resonator for active modulation of thermal emission

Bahram Khalichi,* Amir Ghobadi,* Ataollah Kalantari Osgouei, Zahra Rahimian Omam, Hasan Kocer and Ekmel Ozbay*



PAPERS

10834

Evaluating strain and doping of Janus MoSSe from phonon mode shifts supported by *ab initio* DFT calculations

Jennifer Schmeink, Vladislav Musytschuk, Erik Pollmann, Stephan Sleziona, André Maas, Peter Kratzer and Marika Schleberger*