

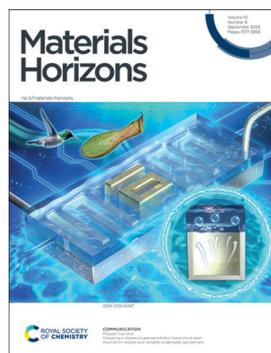
Materials Horizons

rsc.li/materials-horizons

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.

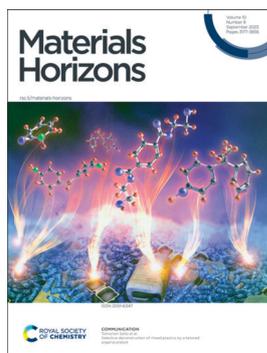
IN THIS ISSUE

ISSN 2051-6347 CODEN MHAOAL 10(9) 3177-3856 (2023)



Cover

See Moyuan Cao *et al.*, pp. 3351–3359.
Image reproduced by permission of Moyuan Cao from *Mater. Horiz.*, 2023, 10, 3351.



Inside cover

See Tomonori Saito *et al.*, pp. 3360–3368.
Image reproduced by permission of Tomonori Saito from *Mater. Horiz.*, 2023, 10, 3360.

EDITORIAL

3195

Materials Horizons Emerging Investigator Series:
Dr Jess M. Clough, Adolphe Merkle Institute,
University of Fribourg, Switzerland

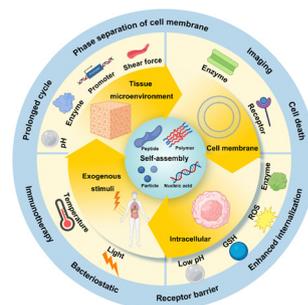


REVIEWS

3197

***In situ* stimulus-responsive self-assembled nanomaterials for drug delivery and disease treatment**

Ziling Yan, Yanfei Liu, Licheng Zhao, Jiaxin Hu, Yimin Du, Xingxing Peng and Zhenbao Liu*



Editorial Staff

Executive Editor

Michaela Mühlberg

Deputy Editor

Geraldine Hay

Editorial Production Manager

Jonathon Watson

Senior Publishing Editor

Alex Metherell

Development Editor

Rose Wedgbury

Publishing Editors

Matthew Blow, Chris Dias, Hemma Fathima, Rob Hinde, Ash Hyde, Evie Karkera, Tamara Kosikova, Carole Martin, Kirsty McRoberts, Tiffany Rogers, Cat Schofield, Ella White, Tom Williams

Editorial Assistant

Daniel Smith

Publisher

Sam Keltie

For queries about submitted papers, please contact Jonathon Watson, Editorial Production Manager in the first instance. E-mail: materialshorizons@rsc.org

For pre-submission queries please contact Michaela Mühlberg, Executive Editor. E-mail: materialshorizons-rsc@rsc.org

Materials Horizons (electronic: ISSN 2051-6355) is published 12 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WE.

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 0WE, UK

Tel +44 (0)1223 432398; E-mail orders@rsc.org

2023 Annual (electronic) subscription price: £2697, \$4615.

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

Materials Horizons

rsc.li/materials-horizons

Building and designing systems from the molecular level

Editorial Board

Chair

Martina Stenzel, University of New South Wales, Australia

Scientific Editors

Jean-Luc Bredas, University of Arizona, USA
Bruno Chaudret, INSA, France
Guoping Chen, National Institute for Materials Science, Japan

Yong Cui, Shanghai Jiao Tong University, China
Simone Fabiano, Linköping University, Sweden
Zhongyi Jiang, Tianjin University, China
Kisuk Kang, Seoul National University, South Korea
Norbert Koch, Humboldt University of Berlin, Germany
Róisín Owens, University of Cambridge, United Kingdom

Yi Long, Chinese University of Hong Kong, Hong Kong SAR, China

Members

Kelsey Hatzell, Princeton University, USA
Mark E. Thompson, University of Southern California, USA
Shu Yang, University of Pennsylvania, USA

Advisory Board

Athina Anastasaki, ETH Zurich, Switzerland
Markus Antonietti, Max Planck Institute of Colloids & Interfaces, Germany
David Beljonne, University of Mons, Belgium
Chris Bettinger, Carnegie Mellon University, USA
Kanishka Biswas, Jawaharlal Nehru Centre for Advanced Scientific Research, India
Paul Blom, Max Planck Institute for Polymer Research, Mainz, Germany
Mischa Bonn, Max Planck Institute for Polymer Research, Germany
Markus Buehler, Massachusetts Institute of Technology, USA
Jillian Buriak, University of Alberta, Canada
Moyuan Cao, Nankai University, China
Yong Cao, South China University of Technology, China
Rachel Caruso, University of Melbourne, Australia
Anthony Cheetham, University of Cambridge, UK
Hong Chen, Soochow University, China
Brandi Cossairt, University of Washington, USA
Dibyendu Das, IISER Kolkata, India
Luisa De Cola, University of Strasbourg, France
Ulrike Diebold, Vienna University of Technology, Austria
Mircea Dinca, Massachusetts Institute of Technology, USA
Giti Frey, Technion - Israel Institute of Technology, Israel
Richard Friend, University of Cambridge, UK
Subi George, Jawaharlal Nehru Centre for Advanced Scientific Research, India
Rebecca Gieseking, Brandeis University
Jian Ping Gong, Hokkaido University, Japan
Grace Gu, University of California, Berkeley, USA
Ritu Gupta, Indian Institute of Technology Jodhpur, India
David Haddleton, University of Warwick, UK
Martin Heeney, King Abdullah University of Science and Technology (KAUST), Saudi Arabia
Laura Herz, University of Oxford, UK
Jurriaan Huskens, University of Twente, Netherlands
Hiroshi Imahori, Kyoto University, Japan
Lei Jiang, Beihang University, China

Antoine Kahn, Princeton University, USA
Richard Kaner, University of California, Los Angeles, USA
Susumu Kitagawa, Kyoto University, Japan
Anna Koeber, University of Bayreuth, Germany
Frederik Krebs, Elite Science, Denmark
Katharina Landfester, Max Planck Institute for Polymer Research, Germany
Guglielmo Lanzani, Italian Institute of Technology, Italy
Bettina Lohmeijer, University of Technology, China
Yan Li, Peking University, China
Darren Lipomi, University of California, San Diego, USA
Bin Liu, National University of Singapore, Singapore
Maria Antonietta Loi, University of Groningen, Netherlands
Lynn Yueh Lin Loo, Princeton University, USA
Betina Lotsch, Max Planck Institute for Solid State Research, Germany
HongYee Low, Singapore University of Technology and Design, Singapore
Eva Malmström Jonsson, KTH Royal Institute of Technology, Sweden
Uttam Manna, Indian Institute of Technology-Guwahati, India
Seth Marder, University of Colorado Boulder, USA
Richard Martel, University of Montreal, Canada
Hedi Mattoussi, Florida State University, USA
David Mecerreyes, University of the Basque Country, Spain
Phillip Messersmith, University of California, Berkeley, USA
Catherine Murphy, University of Illinois Urbana-Champaign, USA
KS Narayan, Jawaharlal Nehru Centre for Advanced Scientific Research, India
Thuc-Quyen Nguyen, University of California, Santa Barbara, USA
Markus Niederberger, ETH Zürich, Switzerland
Teri Odum, Northwestern University, USA
Woe-Jun Ong, Xiamen University, Malaysia
Moon Jeong Park, Pohang University of Science and Technology (POSTECH), Korea
Marie-Paule Pileni, Pierre and Marie Curie University, France

Vivek Polshettiwar, Tata Institute of Fundamental Research (TIFR), India
C N R Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India
Erin Ratcliff, University of Arizona, USA
Vince Rotello, University of Massachusetts at Amherst, USA
David Scanlon, University College London, United Kingdom
Bernd M. Schmidt, Heinrich Heine University Düsseldorf, Germany
Christine Schmidt, University of Florida, USA
Gregory D. Scholes, Princeton University, USA
Rachel Segalman, University of California Santa Barbara, USA
Peter Skabara, University of Glasgow, UK
Henry Snaith, University of Oxford, UK
Kazu Takimaya, RIKEN, Japan
Luisa Torsi, University of Bari, Italy
Ramanathan Vaidyanathan, IISER Pune, India
Aleks Vojvodic, University of Pennsylvania, USA
Elizabeth von Hauff, VU Amsterdam, The Netherlands
Aron Walsh, Imperial College London, UK
Mengye Wang, Sun Yat-Sen University, China
Shu Wang, Institute of Chemistry, Chinese Academy of Sciences, China
Xun Wang, Tsinghua University, China
Tanja Weil, Max Planck Institute for Polymer Research, Germany
Emily Weiss, Northwestern University, USA
David Weitz, Harvard University, USA
Chris Wolverson, Northwestern University, USA
Yi Xie, University of Science and Technology of China, China
Vivian Wing-Wah Yam, University of Hong Kong, Hong Kong
Shannon Yee, Georgia Institute of Technology, USA
Jihong Yu, Jilin University, China
Shu-Hong Yu, University of Science and Technology of China, China
Aldo J. G. Zarbin, Universidade Federal do Paraná, Brazil
Xiaowei Zhan, Peking University, China
Nan Zhang, Hunan University, China
Dongyuan Zhao, Fudan University, China
Ye Zhou, Shenzhen University, China

Community Board

Please see the Materials Horizons journal webpage for full details of our Community Board: rsc.li/materials-horizons

Information for Authors

Full details on how to submit material for publication in Materials Horizons 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/materials-horizons. Submissions: The journal welcomes submissions of manuscripts for publication as Communications, Reviews, Mini-reviews and Focus Articles. Communications should contain exceptionally significant scientific work of such importance that rapid publication is desirable. The research presented should provide new insight into the topic and be accessible to the broad readership of the journal.

Colour figures are reproduced free of charge. 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.

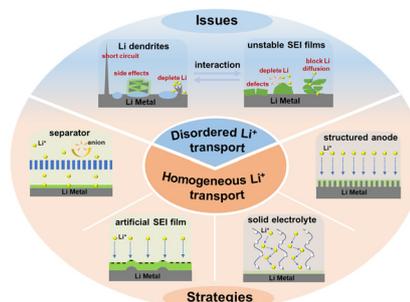
Registered charity number: 207890



3218

Ion modulation engineering toward stable lithium metal anodes

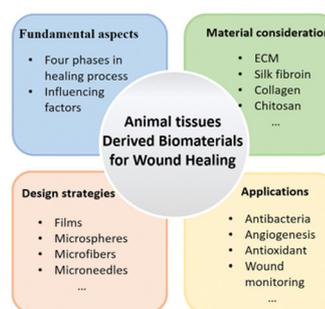
Ce Wang, Jiahao Zhu, Yuhong Jin,* Jingbing Liu, Hao Wang* and Qianqian Zhang*



3237

Animal tissue-derived biomaterials for promoting wound healing

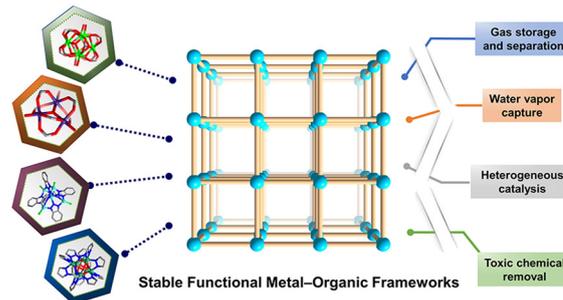
Xinyue Cao, Xiang Lin, Ning Li, Xiaozhi Zhao,* Min Zhou* and Yuanjin Zhao*



3257

Rational design of stable functional metal–organic frameworks

Zhijie Chen,* Kent O. Kirlikovali, Le Shi and Omar K. Farha*



3269

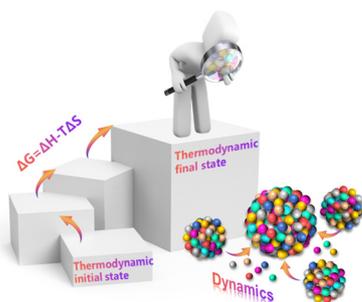
Bio-inspired artificial synaptic transistors: evolution from innovative basic units to system integration

Xin Wang, Yixin Ran, Xiaoqian Li, Xinsu Qin, Wanlong Lu, Yuanwei Zhu and Guanghao Lu*



REVIEWS

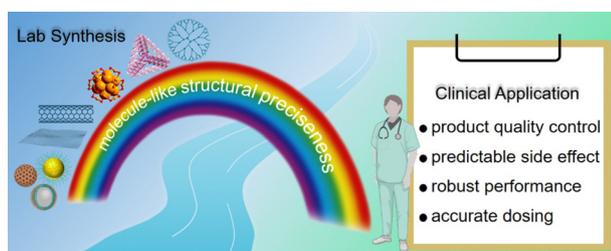
3293



Insights into high-entropy material synthesis dynamics criteria based on a thermodynamic framework

Zeshuo Meng, Zijin Xu, Hongwei Tian* and Weitao Zheng*

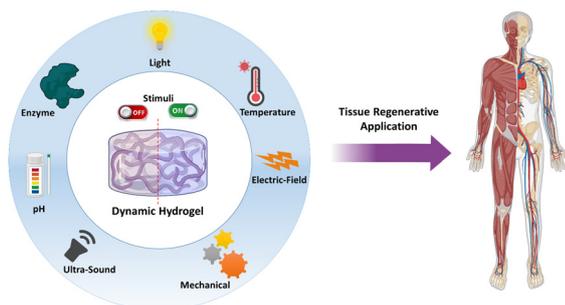
3304



Molecularly or atomically precise nanostructures for bio-applications: how far have we come?

Jie Wang, Ping Li, Chao Wang,* Ning Liu* and Dongming Xing*

3325

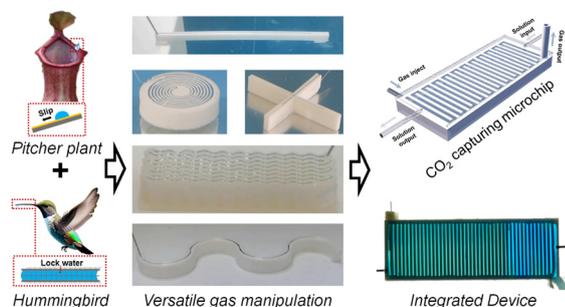


Stimuli-responsive dynamic hydrogels: design, properties and tissue engineering applications

Sivashanmugam Amirthalingam, Arun Kumar Rajendran, Young Gi Moon and Nathaniel S. Hwang*

COMMUNICATIONS

3351



Designing a slippery/superaerophobic hierarchical open channel for reliable and versatile underwater gas delivery

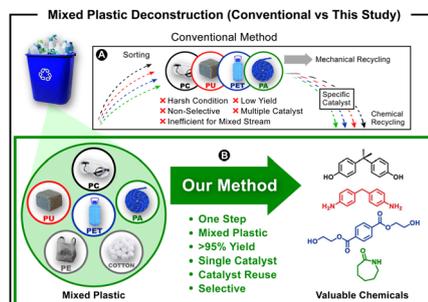
Xinsheng Wang, Haoyu Bai, Zhe Li, Yaru Tian, Tianhong Zhao and Moyuan Cao*



3360

Selective deconstruction of mixed plastics by a tailored organocatalyst

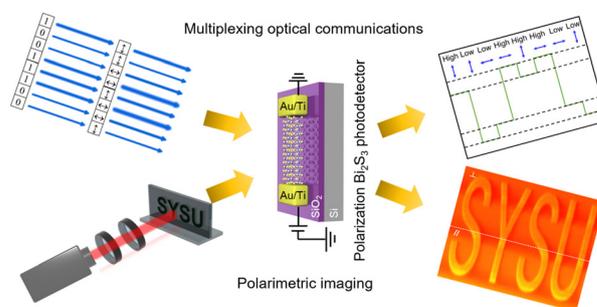
Md Arifuzzaman, Bobby G. Sumpster, Zoriana Demchuk, Changwoo Do, Mark A. Arnould, Md Anisur Rahman, Peng-Fei Cao, Ilja Popovs, Robert J. Davis, Sheng Dai and Tomonori Saito*



3369

Quantum tailoring for polarization-discriminating Bi_2S_3 nanowire photodetectors and their multiplexing optical communication and imaging applications

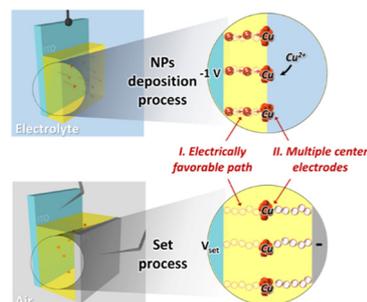
Huaxin Yi, Churong Ma, Wan Wang, Huanrong Liang, Rui Cui, Weiwei Cao, Hailin Yang, Yuhang Ma, Wenjing Huang, Zhaoqiang Zheng, Yichao Zou, Zexiang Deng,* Jiandong Yao* and Guowei Yang



3382

Intensive harmonized synapses with amorphous Cu_2O -based memristors using ultrafine Cu nanoparticle sublayers formed *via* atomically controlled electrochemical pulse deposition

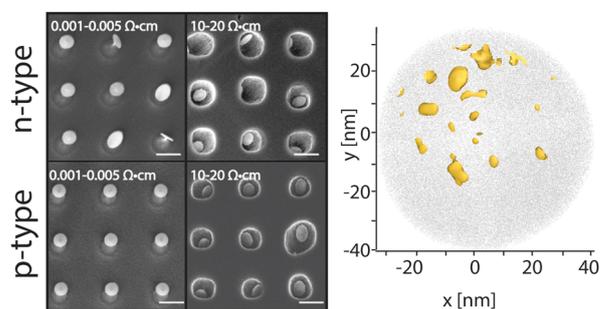
Dong Su Kim, Hee Won Suh, Sung Woon Cho, Shin Young Oh, Hak Hyeon Lee, Kun Woong Lee, Ji Hoon Choi and Hyung Koun Cho*



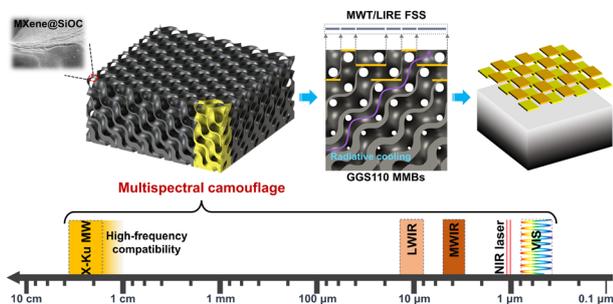
3393

Doping density, not valency, influences catalytic metal-assisted plasma etching of silicon

Julia B Sun, Namphung Peimyoo, James O Douglas and Benjamin D Almquist*



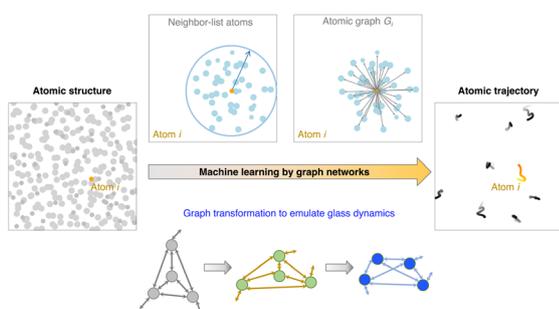
3404



Wide-temperature-range multispectral camouflage enabled by orientation-gradient co-optimized microwave blackbody metastructure coupled with conformal MXene coating

Li Yao, Longkai Pan, Shixiang Zhou, Hongxia Liu, Hui Mei,* Yang Li, Konstantinos G. Dassios, Paolo Colombo, Laifei Cheng and Litong Zhang

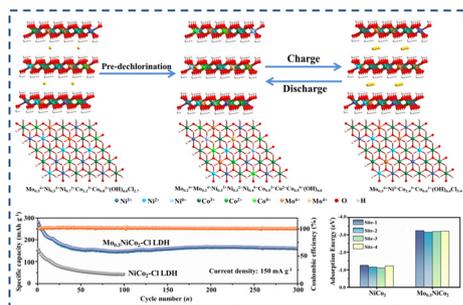
3416



Learning molecular dynamics: predicting the dynamics of glasses by a machine learning simulator

Han Liu,* Zijie Huang, Samuel S. Schoenholz, Ekin D. Cubuk, Morten M. Smedskjaer, Yizhou Sun, Wei Wang and Mathieu Bauchy*

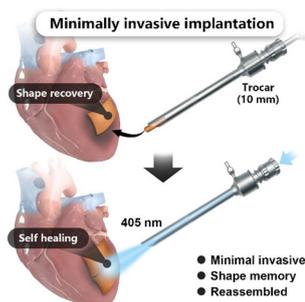
3429



Introducing high-valence molybdenum to stimulate lattice oxygen in a NiCo LDH cathode for chloride ion batteries

Shuhan Yang, Qing Yin,* Zhihao Song, Fan Xu, Zelin Xie, Yunjia Wu, Shilin Xu, Yong-Zhi Li, Danyang Zhao, Bin Xiao, Xiaolan Xue, Jiqiu Qi, Yanwei Sui* and Jingbin Han

3438



In vivo self-assembled shape-memory polyurethane for minimally invasive delivery and therapy

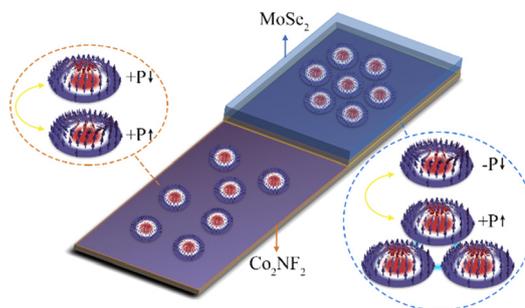
Shifen Li, Hua Zhang, Jieqi Xie, Zhaoyi Wang, Kai Wang, Ziheng Zhai, Jie Ding, Shuqin Wang, Liyin Shen, Jun Wen, Yi-Da Tang, Huanan Wang, Yang Zhu* and Changyou Gao*



3450

Ferroelectrically tunable magnetic skyrmions in two-dimensional multiferroics

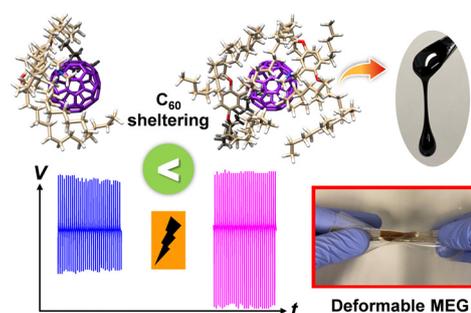
Zhonglin He, Wenhui Du, Kaiying Dou, Ying Dai,*
Baibiao Huang and Yandong Ma*



3458

Alkyl-C₆₀ liquid electrets as deformable mechanoelectric generators

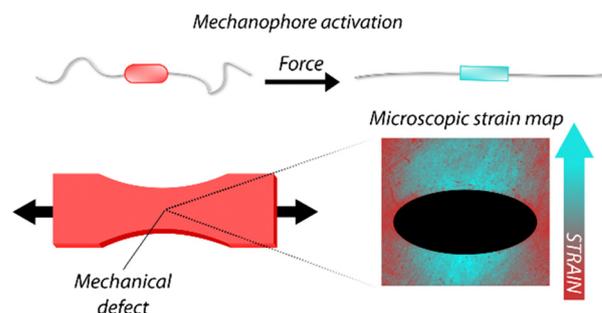
Ravindra Kumar Gupta, Manabu Yoshida, Akinori Saeki,
Zhenfeng Guo and Takashi Nakanishi*



3467

Microscopic strain mapping in polymers equipped with non-covalent mechanochromic motifs

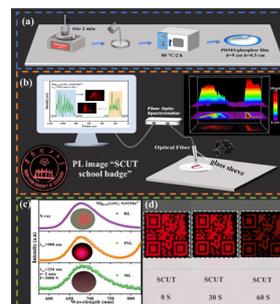
Hanna Traeger, Derek Kiebal, Céline Calvino,
Yoshimitsu Sagara, Stephen Schrettl, Christoph Weder
and Jess M. Clough*



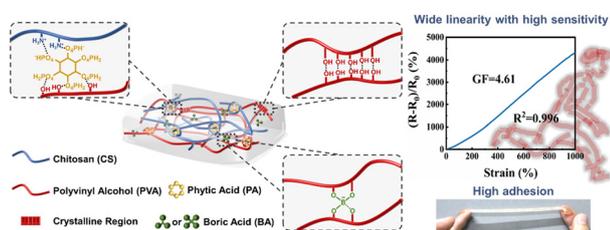
3476

Cation-defect-induced self-reduction towards efficient mechanoluminescence in Mn²⁺-activated perovskites

Yao Xiao, Puxian Xiong,* Shuai Zhang, Yongsheng Sun,
Na Yan, Zhiduo Wang, Qianyi Chen, Peishan Shao,
Mikhail G. Brik, Shi Ye, Dongdan Chen* and
Zhongmin Yang



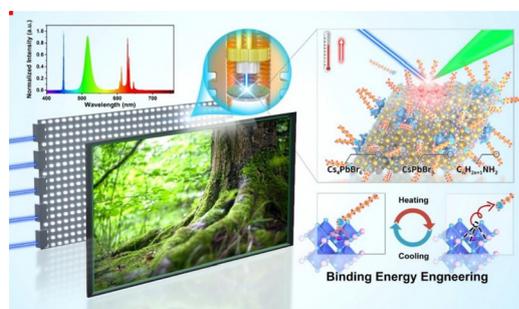
3488



Highly adhesive chitosan/poly(vinyl alcohol) hydrogels via the synergy of phytic acid and boric acid and their application as highly sensitive and widely linear strain sensors

Cuiwen Liu, Ru Zhang, Yao Wang, Chengmeng Wei, Feng Li, Ning Qing and Liuyan Tang*

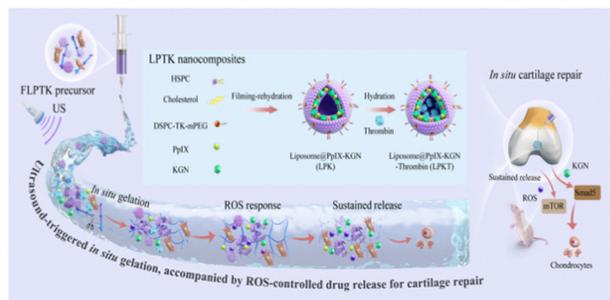
3499



A high-performance metal halide perovskite-based laser-driven display

Shaoan Zhang, Zhenzhang Li, Zaijin Fang, Bao Qiu, Janak L. Pathak, Kaniyarakkal Sharafudeen, S. Saravanakumar, Zhanjun Li, Gang Han* and Yang Li*

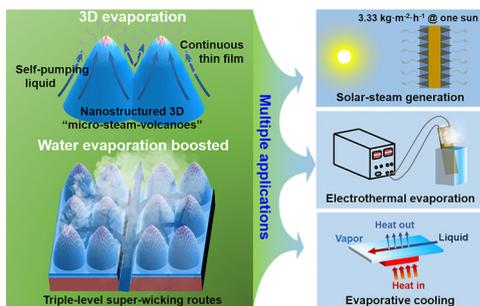
3507



Ultrasound-triggered *in situ* gelation with ROS-controlled drug release for cartilage repair

Shunli Wu, Hao Zhang, Sicheng Wang, Jinru Sun, Yan Hu, Han Liu, Jinlong Liu, Xiao Chen, Fengjin Zhou,* Long Bai,* Xiuhui Wang* and Jiacan Su*

3523



Boosting water evaporation via continuous formation of a 3D thin film through triple-level super-wicking routes

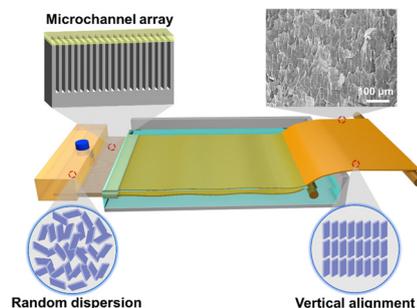
Guochen Jiang, Lizhong Wang, Ze Tian, Changhao Chen, Xinyu Hu, Rui Peng, Daizhou Li, Hongjun Zhang, Peixun Fan* and Minlin Zhong*



3536

Scalable microfluidic fabrication of vertically aligned two-dimensional nanosheets for superior thermal management

Kai Yang, Xiaoran Yang, Zexin Liu, Rong Zhang, Yue Yue, Fanfan Wang, Kangyong Li, Xiaojie Shi, Jun Yuan, Ningyu Liu, Zhiqiang Wang,* Gongkai Wang* and Guoqing Xin*



3548

Soft–hard interface design in super-elastic conductive polymer hydrogel containing Prussian blue analogues to enable highly efficient electrochemical deionization

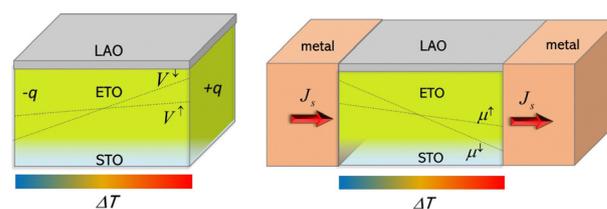
Yifan Ren, Fei Yu, Xin-Gui Li, Brian Yulianto, Xingtao Xu,* Yusuke Yamauchi* and Jie Ma*



3559

Ultra-thin magnetic film with giant phonon-drag for heat to spin current conversion

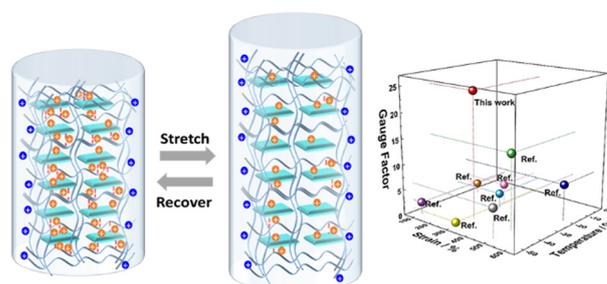
Payal Wadhwa, Andrea Bosin and Alessio Filippetti*



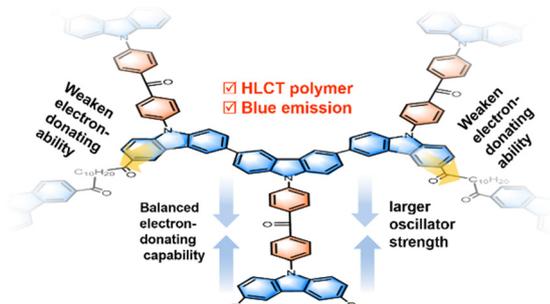
3569

Competitive proton-trapping strategy enhanced anti-freezing organohydrogel fibers for high-strain-sensitivity wearable sensors

Zhujun Chen, He Liu, Xinyiming Lin, Xianming Mei, Wei Lyu* and Yaozu Liao*



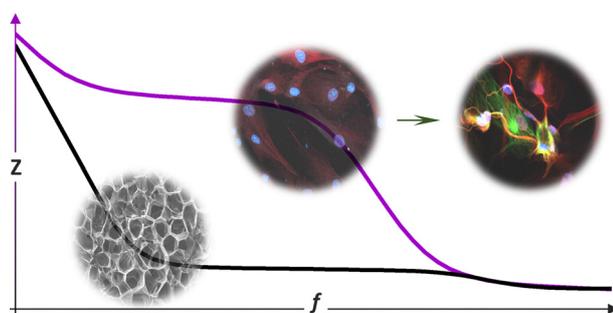
3582



Pioneering research on blue “hot exciton” polymers and their application in solution-processed organic light-emitting diodes

Jiasen Zhang, Wei Li,* Lingling Lyu, Qiang Wei,* Yuanyuan Meng, Deli Li, Zhichuan Wang, Ming Luo, Songyu Du, Xu Xu, Xiaoli Zhang, Guohua Xie* and Ziyi Ge*

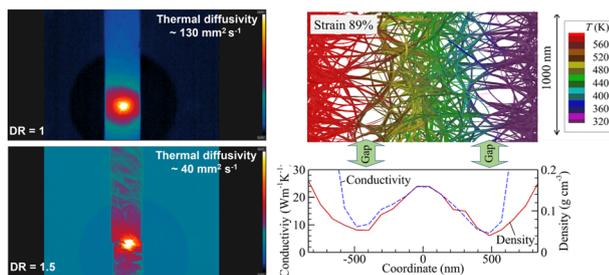
3589



3D organic bioelectronics for electrical monitoring of human adult stem cells

Achilleas Savva,* Janire Saez, Aimee Withers, Chiara Barberio, Verena Stoeger, Shani Elias-Kirma, Zixuan Lu, Chrysanthi-Maria Moysidou, Konstantinos Kallitsis, Charalampos Pitsalidis and Róisín M. Owens*

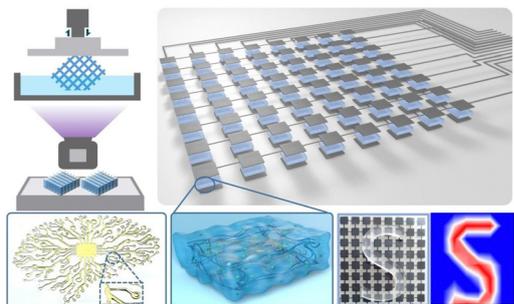
3601



Optimization of thermoelectric properties of carbon nanotube veils by defect engineering

Chongyang Zeng, Pietro Stenier, Kan Chen, Kening Wan, Ming Dong, Suwei Li, Coskun Kocabas, Michael J. Reece, Dimitrios G. Papageorgiou, Alexey N. Volkov, Han Zhang and Emiliano Bilotti*

3610



A liquid-free conducting ionoelastomer for 3D printable multifunctional self-healing electronic skin with tactile sensing capabilities

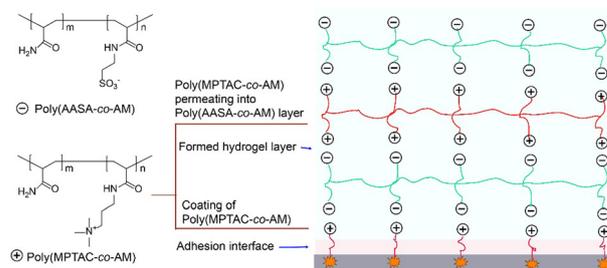
Qirui Wu, Yidan Xu, Songjiu Han, Jundong Zhu, Anbang Chen, Jiayu Zhang, Yujia Chen, Xiaoxiang Yang, Jianren Huang* and Lunhui Guan*



3622

In situ molecular permeation of liquid cationic polymers into solid anionic polymer films enabling self-adaptive adhesion of hydrogel biosensors

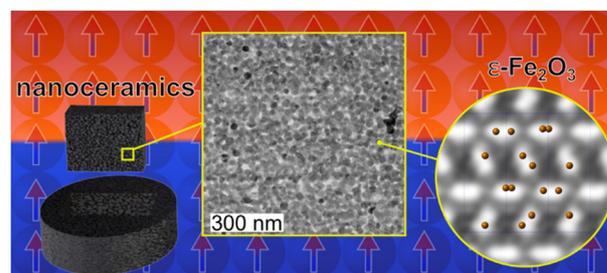
Danqing Zhou, Jiahui Yu,* Qiuhua Zhao* and Lidong Zhang*



3631

Nanoceramics of metastable ϵ - Fe_2O_3 : effect of sintering on the magnetic properties and sub-terahertz electron resonance

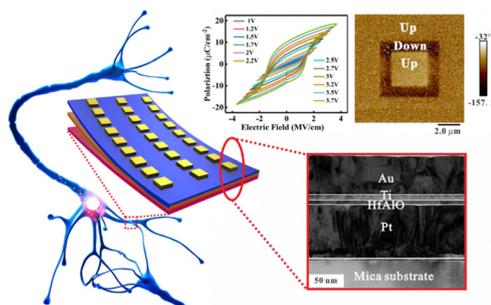
Evgeny A. Gorbachev,* Liudmila N. Alyabyeva, Miroslav V. Soshnikov, Vasily A. Lebedev, Anatolii V. Morozov, Ekaterina S. Kozlyakova, Asmaa Ahmed, Artem A. Eliseev and Lev A. Trusov*



3643

Flexible aluminum-doped hafnium oxide ferroelectric synapse devices for neuromorphic computing

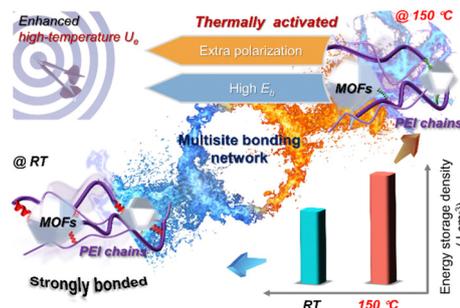
Zhenhai Li, Tianyu Wang,* Jialin Meng, Hao Zhu, Qingqing Sun, David Wei Zhang and Lin Chen*



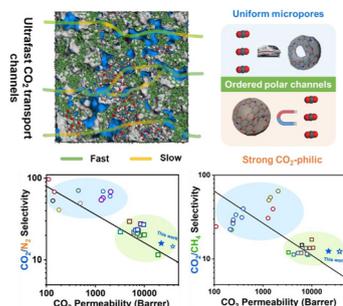
3651

Thermally activated dynamic bonding network for enhancing high-temperature energy storage performance of PEI-based dielectrics

Jialong Li, Xiaoxu Liu,* Bingshun Huang, Dongyang Chen, Zhaoru Chen, Yanpeng Li, Yu Feng, Jinghua Yin, Haozhe Yi and Taoqi Li



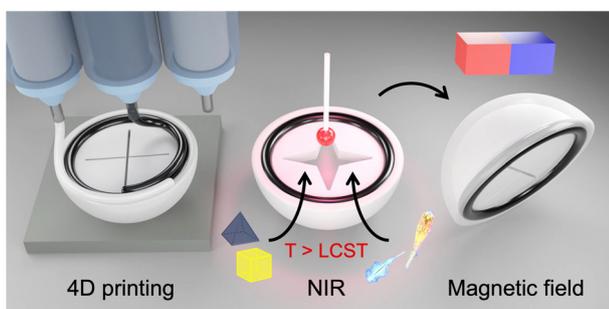
3660



Heteroatom-doped noble carbon-tailored mixed matrix membranes with ultrapermeability for efficient CO₂ separation

Zhihong Tian, Dongyang Li, Weigang Zheng, Qishuo Chang, Yudong Sang, Feili Lai, Jing Wang,* Yatao Zhang,* Tianxi Liu and Markus Antonietti

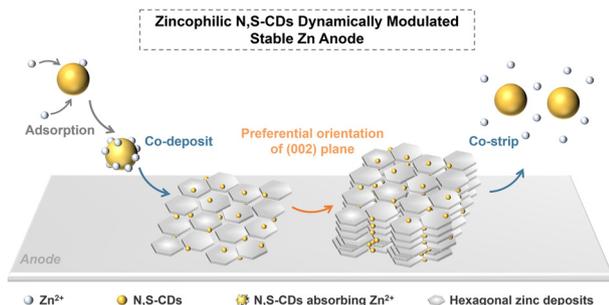
3668



A dual stimuli-responsive smart soft carrier using multi-material 4D printing

Inyoung Choi, Saeun Jang, Seungyeom Jung, Seohyun Woo, Jinyoung Kim, Cheol Bak, Yongmin Lee and Sukho Park*

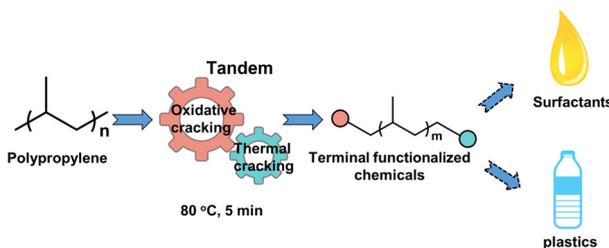
3680



Durable modulation of Zn(002) plane deposition via reproducible zincophilic carbon quantum dots towards low N/P ratio zinc-ion batteries

Zhu Xu, Heng Li,* Yupeng Liu, Kexuan Wang, Huibo Wang, Mingzheng Ge, Junpeng Xie, Jielei Li, Zhaorui Wen, Hui Pan, Songnan Qu, Jilei Liu, Yanyan Zhang, Yuxin Tang* and Shi Chen*

3694



Tandem oxidative and thermal cracking of polypropylene at low temperatures

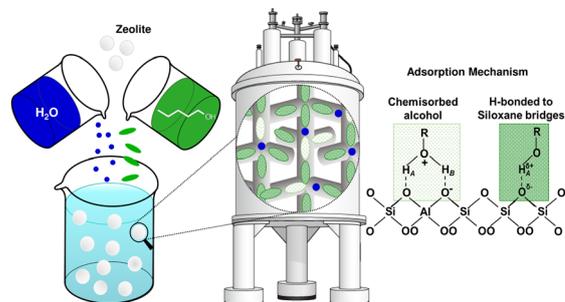
Xiangyue Wei, Qiang Zhang, Chengfeng Shen, Xu Zhao, Fan Zhang, Xuehui Liu, Gang Wu, Shimei Xu* and Yu-Zhong Wang*



3702

Hydrogen bonding to oxygen in siloxane bonds drives liquid phase adsorption of primary alcohols in high-silica zeolites

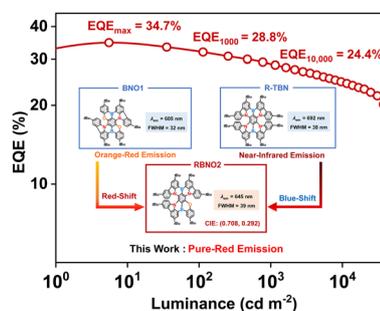
Sambhu Radhakrishnan, Charlotte Lejaegere, Karel Duerinckx, Wei-Shang Lo, Alysson F. Morais, Dirk Dom, C. Vinod Chandran, Ive Hermans, Johan A. Martens and Eric Breyneart*



3712

Precisely regulating the double-boron-based multi-resonance framework towards pure-red emitters: high-performance OLEDs with CIE coordinates fully satisfying the BT. 2020 standard

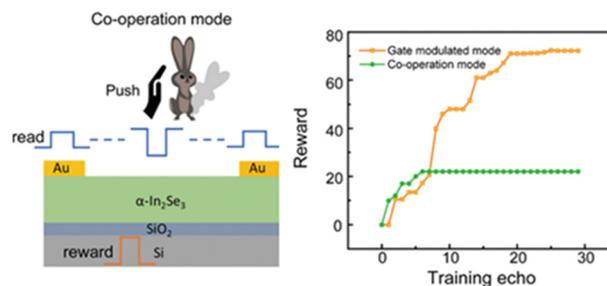
Yang Zou,* Jiawei He, Nengquan Li, Yuxuan Hu, Sai Luo, Xiaosong Cao and Chuluo Yang*



3719

Achieving reinforcement learning in a three-active-terminal neuromorphic device based on a 2D vdW ferroelectric material

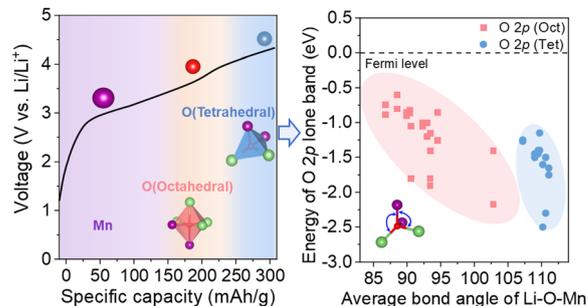
Feng Guo, Weng Fu Io, Zhaoying Dang, Ran Ding, Sin-Yi Pang, Yuqian Zhao and Jianhua Hao*



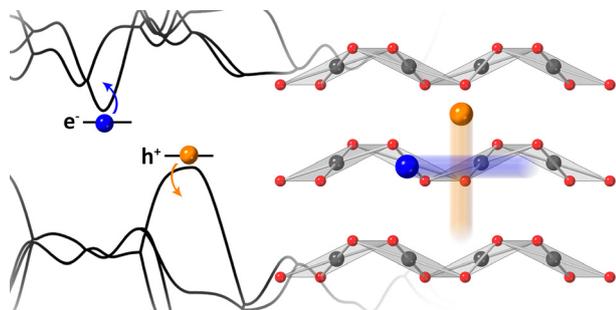
3729

Enhancing anionic redox stability via oxygen coordination configurations

Haixin Li, Yining Li, Xiaolin Zhao, Yang Gan, Wujie Qiu* and Jianjun Liu*



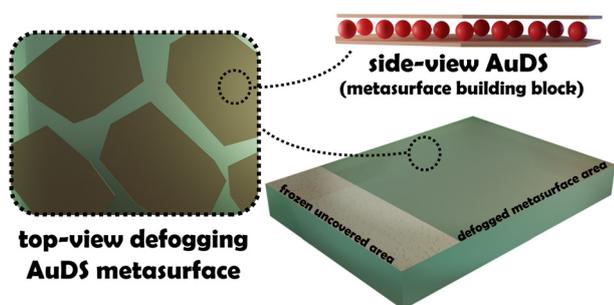
3740



Axis dependent conduction polarity in the air-stable semiconductor, PdSe₂

Ryan A. Nelson, Ziling Deng, Andrew M. Ochs, Karl G. Koster, Cullen T. Irvine, Joseph P. Heremans, Wolfgang Windl and Joshua E. Goldberger*

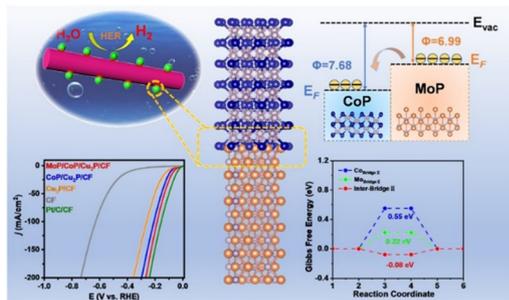
3749



Fabricating defogging metasurfaces via a water-based colloidal route

Olena Khoruzhenko, Volodymyr Dudko, Sabine Rosenfeldt and Josef Breu*

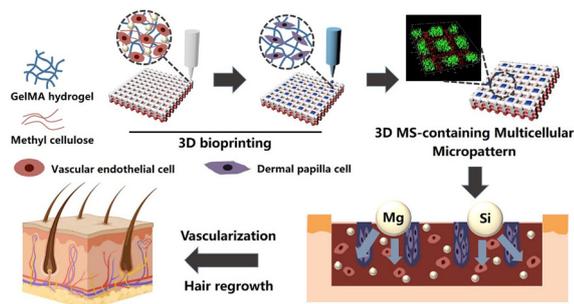
3761



Constructing abundant interfaces by decorating MoP quantum dots on CoP nanowires to induce electronic structure modulation for enhanced hydrogen evolution reaction

Yuanyuan Chen, Tingting Sui, Chaojie Lyu, Kaili Wu, Jiwen Wu, Meifang Huang, Ju Hao, Woon-Ming Lau, Chubin Wan,* Dawei Pang* and Jinlong Zheng*

3773



3D multicellular micropatterning biomaterials for hair regeneration and vascularization

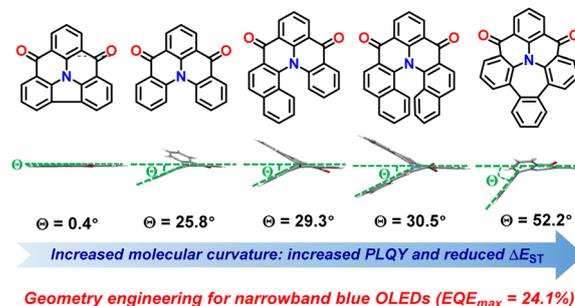
Jingge Ma, Chen Qin, Jinfu Wu, Hui Zhuang, Lin Du, Jinfu Xu and Chengtie Wu*



3785

Geometry engineering of a multiple resonance core via a phenyl-embedded strategy toward highly efficient narrowband blue OLEDs

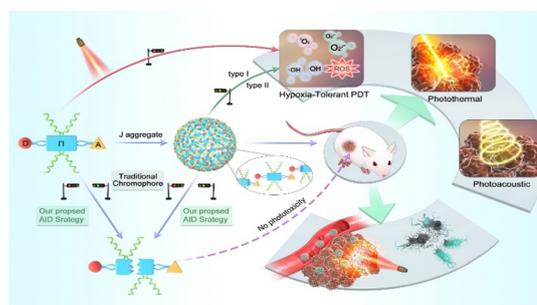
Yimin Wu, Xiaoyu Liu, Junjie Liu, Ge Yang, Songyan Han, Dezhi Yang, Xiaosong Cao, Dongge Ma, Zhengyang Bin* and Jingsong You*



3791

Aggregation-induced type I&II photosensitivity and photodegradability-based molecular backbones for synergistic antibacterial and cancer phototherapy via photodynamic and photothermal therapies

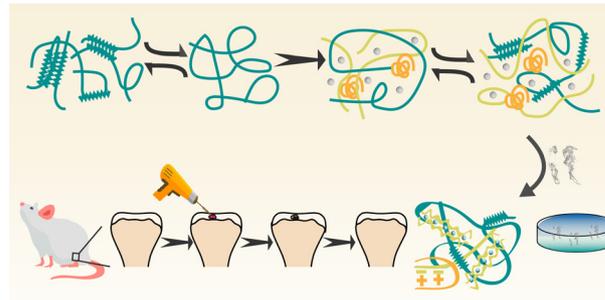
Jun Liu,* Hongyu Chen, Yongsheng Yang, Qihui Wang, Shilu Zhang, Bo Zhao, Zhonghui Li, Guoqiang Yang* and Guowei Deng*



3797

A natural polymer-based hydrogel with shape controllability and high toughness and its application to efficient osteochondral regeneration

Jueying Yang, Hui Wang, Weiting Huang, Kelin Peng, Rui Shi, Wei Tian, Lizhi Lin, Jingjing Yuan, Weishang Yao, Xilan Ma and Yu Chen*



3807

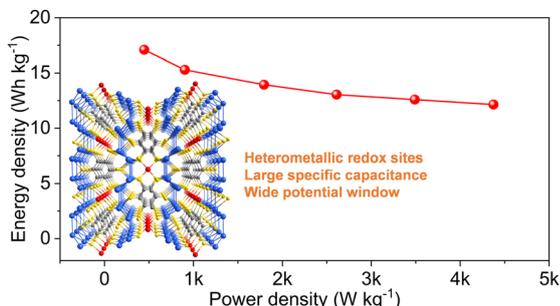
Ultra-robust, high-adhesive, self-healing, and photothermal zwitterionic hydrogels for multi-sensory applications and solar-driven evaporation

Youyou Chen, Chen Zhang,* Rui Yin, Minghan Yu, Yijie Liu, Yaming Liu, Haoran Wang, Feihua Liu, Feng Cao, Guoqing Chen* and Weiwei Zhao*



COMMUNICATIONS

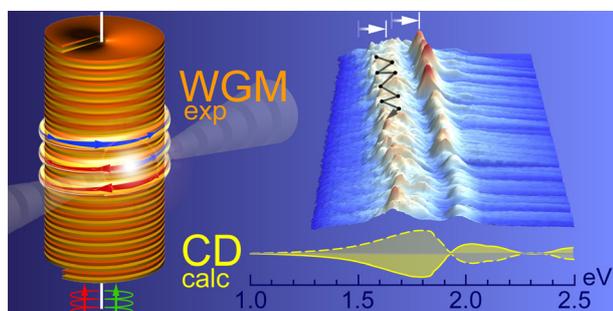
3821



Nonporous, conducting bimetallic coordination polymers with an advantageous electronic structure for boosted faradaic capacitance

Yigang Jin, Sha Wu, Yong Sun, Zixin Chang, Ze Li, Yimeng Sun and Wei Xu*

3830



Chirality and dislocation effects in single nanostructures probed by whispering gallery modes

Peter Sutter,* Larousse Khosravi-Khorashad, Cristian V. Ciobanu and Eli Sutter*

3840



Fabrication of a textile-based triboelectric nanogenerator toward high-efficiency energy harvesting and material recognition

Junjun Huang, Sanlong Wang, Xingke Zhao, Wenqing Zhang, Zhenming Chen, Rui Liu, Peng Li,* Honglin Li* and Chengmei Gui*

CORRECTION

3854

Correction: Anomalous abrupt switching of wurtzite-structured ferroelectrics: simultaneous non-linear nucleation and growth model

Keisuke Yazawa,* John Hayden, Jon-Paul Maria, Wanlin Zhu, Susan Trolier-McKinstry, Andriy Zakutayev and Geoff L. Brennecke*

