# **Industrial Chemistry & Materials**

An international journal of significant innovative research and major technological breakthroughs in all aspects of industrial chemistry and materials rsc.li/icm

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 2755-2500 CODEN ICMNCZ 2(3) 351-482 (2024)



Cover See Shaojie Wang, Xu Hou *et al.*, pp. 424–431. Image reproduced by permission of Xu Hou from *Ind. Chem. Mater.*, 2024, **2**, 424.

### EDITORIALS

#### 357

Outstanding Reviewers for Industrial Chemistry & Materials in 2023



#### THEMED ISSUE ARTICLES

## 359

Introduction to the themed issue on liquid-based materials: novel concepts from fundamentals to applications

Xu Hou\* and Jungmok Seo\*



#### REVIEWS



### Liquid-based electronic materials for bioelectronics: current trends and challenges

Kijun Park, Sangwoo Park, Yejin Jo, Soo A. Kim, Tae Young Kim, Sangwon Kim and Jungmok Seo\*









ts in Primary Liquid

#### Multi-component liquid-infused systems: a new approach to functional coatings

Zachary Applebee and Caitlin Howell\*

# 393



#### Progress on fiber engineering for fabric innovation in ecological hydrophobic design and multifunctional applications

Wei Li,\* Libing Yang, Jianying Huang,\* Chan Zheng, Yu Chen, Yunbo Li, Dapeng Yang, Shuhui Li, Zhong Chen,\* Weilong Cai and Yuekun Lai\*

# COMMUNICATION



## Electrostatically responsive liquid gating system for controlled microbubble generation

Guochao Zeng, Yunmao Zhang, Zhongyi Fang, Lejian Yu, Yawen Zhang, Shaojie Wang\* and Xu Hou\*

# PAPERS

# 432

# Triphase photocatalytic water-gas-shift reaction for hydrogen production with enhanced interfacial diffusion at gas-liquid-solid interfaces

Huige Chen, Zhenhua Li, Chao Zhou, Run Shi\* and Tierui Zhang\*



#### 441

# Asymmetric microfiber actuators with reciprocal deformation

Yuhang Lu, Shiyu Wang and Pingan Zhu\*



# 451

# Enhancing conversion using diffusio-osmosis from patterned catalytic surfaces

Aura Visan, Jeffery A. Wood and Rob G. H. Lammertink\*



#### 458

### An electron beam irradiation-assisted coating method for the regulation of hydrophilicity and hydrophobicity

Haozhe Li, Keyan Sheng, Zhiyan Chen, Shuai Hao, Zijian Zhou, Zhenyi Zhang, Xinwen Liu, Mianzhi Xiong, Yanlong Gu\* and Jiang Huang\*



#### PAPERS



Influence of surfactants on selective mechanical separation of fine active materials used in high temperature electrolyzers contributing to circular economy

Sohyun Ahn,\* Suvarna Patil and Martin Rudolph