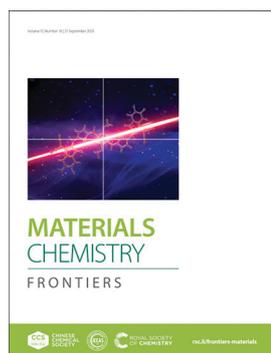


### IN THIS ISSUE

ISSN 2052-1537 CODEN MCFAC5 9(18) 2715-2834 (2025)



#### Cover

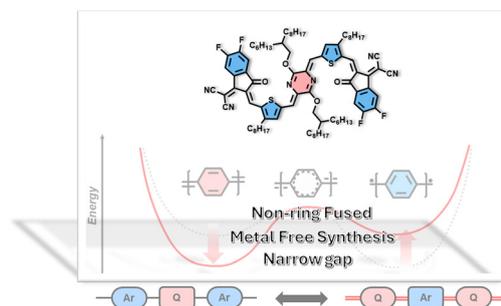
See Gregory C. Welch *et al.*, pp. 2722–2729. Image reproduced by permission of Irene Eunkyung Park from *Mater. Chem. Front.*, 2025, 9, 2722.

### RESEARCH ARTICLES

2722

#### New *p*-azaquinodimethane core based narrow-gap non-ring fused organic acceptor

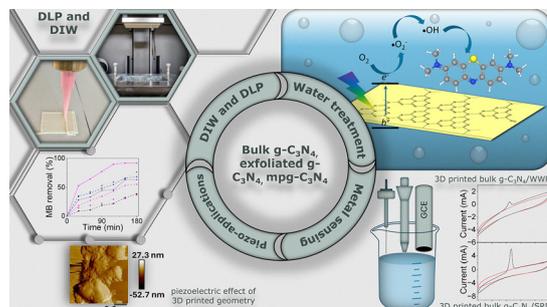
Irene E. Park, Souk Y. Kim, Laura E. Dickson, Pui Mei Helen Tse, Viki Kumar Prasad, Bruno Schmaltz, Benoît H. Lessard, Nutifafa Y. Doumon and Gregory C. Welch\*



2730

#### 3D printed $C_3N_4$ -based structures for photo-, electro-chemical and piezoelectric applications

Alessio Massaro,\* Kiem Giap Nguyen, David Vogelsang Suárez, Artem Glukharev, Chiara Ingresso, Marinella Striccoli, Ahmet Can Kirioglu, Suela Kellici and Vesna Middelkoop\*



**GOLD  
OPEN  
ACCESS**

# EES Batteries

**Exceptional research on  
batteries and energy storage**

**Part of the EES family**



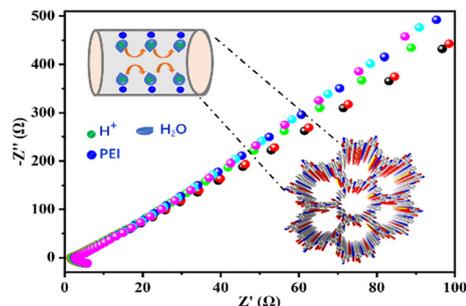
**Join  
in** | Publish with us  
[rsc.li/EESBatteries](https://rsc.li/EESBatteries)

## RESEARCH ARTICLES

2744

**Polyethyleneimine functionalized covalent organic frameworks for efficient proton conduction**

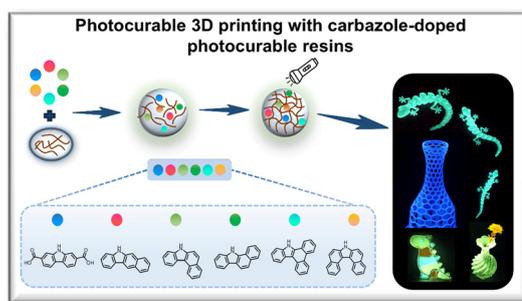
Xinxin Huang, Yongkui Chen,\* Yuling Zhao, Yang Zhao\* and Jianji Wang\*



2752

**Multicolor 3D afterglow structures with high precision and ultralong lifetimes based on carbazole-doped photocurable resins**

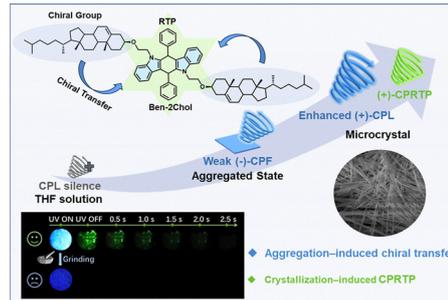
Rui Du, Zhengshuo Wang, Zhipeng Zhao, Huilong Liu, Shouchang Jiao, Yi Wu, Wenhui Li, Hua Yuan, Hanlin Ou\* and Dan Ding\*



2763

**Circularly polarized room-temperature phosphorescence in microcrystals via aggregation-induced chirality transfer**

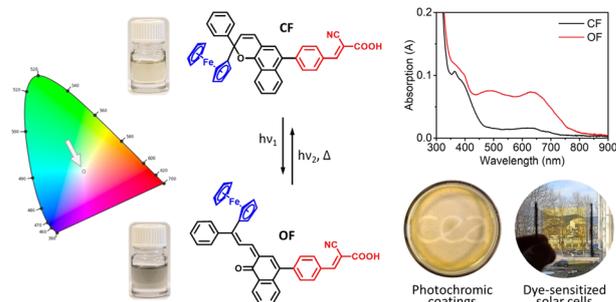
Debin Fu, Shanting Liu and Sheng Hua Liu\*



2770

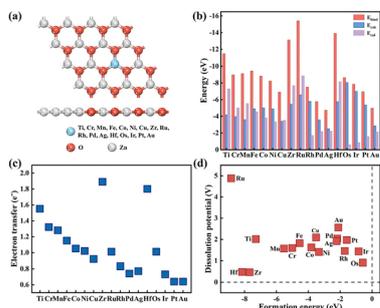
**Panchromatic photochromic push-pull dyes featuring a ferrocene donor group**

Diego Mirani,\* Antonio J. Riquelme, Samuel Fauvel, Cyril Aumaitre, Pascale Maldivi, Jacques Pécaut and Renaud Demadrille\*



## RESEARCH ARTICLES

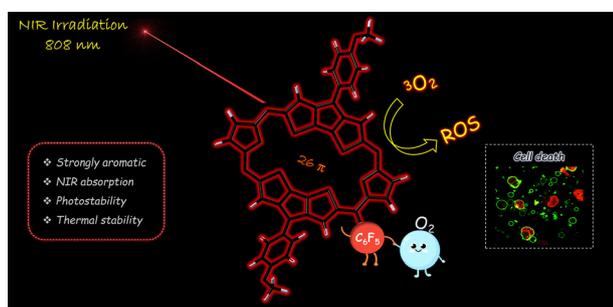
2784



### Single atom embedded ZnO monolayers as bifunctional electrocatalysts for the ORR/OER: a machine learning-assisted DFT study

Siyao Wang, Dongxu Jiao and Jingxiang Zhao\*

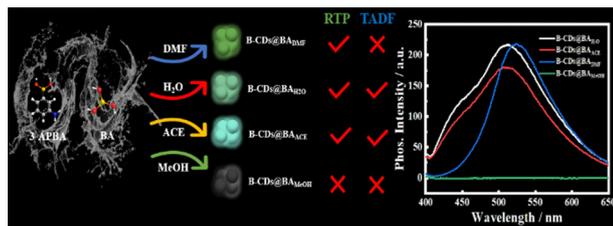
2794



### Photostable rubeprins bearing pentafluorophenyl pendants for enhanced reactive oxygen species generation using an 808 nm laser

Aathira Edwin, Thondikkal Sulfikarali, Gowtham Raj, Athira Naniyil, Reji Varghese and Sabapathi Gokulnath\*

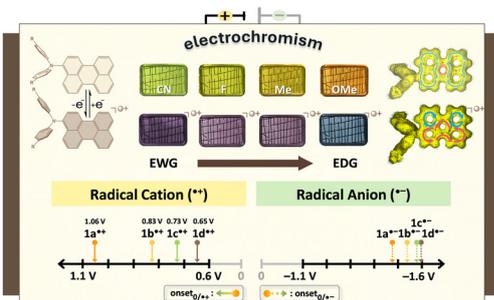
2804



### Afterglow of carbon dots regulated by the solvent effect for temperature sensing and anti-counterfeiting

Feng Wang, Xin Chen and Xiangying Sun\*

2812



### Substituent-dependent modulation of stability and electrochromism in perylene-conjugated radical ions

Soyoon Lee, Daehoon Kim, Jeongyoon Kim, Min-Ji Kim, Dae Won Cho,\* Mina Ahn\* and Kyung-Ryang Wee\*



2820

## Ultrathin layered double hydroxide nanosheets for the production of multifunctional acid-free papers with enhanced durability

Wenzhuo Xia, Sinong Wang,\* Kaige Hou and Yi Tang\*

